BOOSTING THE EARNED INCOME TAX CREDIT FOR SINGLES

Final Impact Findings from the Paycheck Plus Demonstration in New York City

Cynthia Miller
Lawrence F. Katz
Gilda Azurdia
Adam Isen
Caroline Schultz
Kali Aloisi

mdrc
BUILDING KNOWLEDGE TO IMPROVE SOCIAL POLICY

September 2018

Boosting the Earned Income Tax Credit for Singles

Final Impact Findings from the Paycheck Plus Demonstration in New York City

Cynthia Miller
(MDRC)

Lawrence F. Katz
(Harvard University)

Gilda Azurdia
(MDRC)

Adam Isen
(U.S. Department of the Treasury)

Caroline Schultz
(MDRC)

Kali Aloisi
(MDRC)

September 2018

mdrc
BUILDING KNOWLEDGE TO IMPROVE SOCIAL POLICY

Funding for the demonstration in New York is provided by the New York City Mayor's Office for Economic Opportunity (NYC Opportunity), the Robin Hood Foundation, the Laura and John Arnold Foundation, the Edna McConnell Clark Foundation, the Chan Zuckerberg Initiative, and the U.S. Department of Health and Human Services Office of Child Support Enforcement, through a Section 1115 waiver coordinated by the New York State Office of Temporary and Disability Assistance.

Funding for the demonstration in Atlanta is provided by the Annie E. Casey Foundation; the W.K. Kellogg Foundation; the Kresge Foundation; the Ford Foundation; the JPB Foundation; the Chan Zuckerberg Initiative; the U.S. Department of Health and Human Services Office of Planning, Research, and Evaluation; the U.S. Department of Labor; and the Lifepath Project.

Dissemination of MDRC publications is supported by the following funders that help finance MDRC's public policy outreach and expanding efforts to communicate the results and implications of our work to policymakers, practitioners, and others: The Annie E. Casey Foundation, Charles and Lynn Schusterman Family Foundation, The Edna McConnell Clark Foundation, Ford Foundation, The George Gund Foundation, Daniel and Corinne Goldman, The Harry and Jeanette Weinberg Foundation, Inc., The JPB Foundation, The Joyce Foundation, The Kresge Foundation, Laura and John Arnold Foundation, Sandler Foundation, and The Starr Foundation.

In addition, earnings from the MDRC Endowment help sustain our dissemination efforts. Contributors to the MDRC Endowment include Alcoa Foundation, The Ambrose Monell Foundation, Anheuser-Busch Foundation, Bristol-Myers Squibb Foundation, Charles Stewart Mott Foundation, Ford Foundation, The George Gund Foundation, The Grable Foundation, The Lizabeth and Frank Newman Charitable Foundation, The New York Times Company Foundation, Jan Nicholson, Paul H. O'Neill Charitable Foundation, John S. Reed, Sandler Foundation, and The Stupski Family Fund, as well as other individual contributors.

The findings and conclusions in this report do not necessarily represent the official positions or policies of the funders, the U.S. Department of Health and Human Services, or the U.S. Department of the Treasury.

For information about MDRC and copies of our publications, see our website: www.mdrc.org.

Overview

In 2017, one in five workers in the United States earned less than $11.40 per hour. The substantial number of American workers earning such low wages reflects years of wage stagnation and growing inequality in the face of increased automation, international trade, and domestic outsourcing. Although these trends show no sign of letting up, the Earned Income Tax Credit (EITC) is one policy that has helped counter their effects. By providing a refundable credit at tax time, it is widely viewed as a successful public policy that is both antipoverty and pro-work. But most of its benefits have gone to workers with children. The maximum credit available to workers without dependent children — who have been buffeted by the same labor market forces — is just over $500, and they lose eligibility entirely once their annual earnings reach $15,000.

Paycheck Plus is a test of a more generous credit for low-income workers without dependent children. The program, which provides a bonus of up to $2,000 at tax time, is being evaluated using a randomized controlled trial in New York City and Atlanta. This report presents findings through three years from New York, where over 6,000 low-income single adults without dependent children enrolled in the study in late 2013. Half of them were selected at random to be eligible for a Paycheck Plus bonus for three years, starting with the 2015 tax season.

Main Findings

Although the program sought to mirror the process by which filers apply for the federal EITC, bonus receipt was not automatic with tax filing; participants had to actively apply each year. A majority of eligible participants received a bonus each year of the study, though bonus receipt fell over the three-year period as many participants cycled in and out of eligibility.

- Paycheck Plus increased after-bonus earnings (earnings after accounting for taxes and the bonus) and reduced severe poverty.
- The program modestly increased employment rates. Positive effects on employment were concentrated among women and the more disadvantaged men in the study.
- Providing individuals with information about employment services may increase the employment effects of Paycheck Plus.
- Paycheck Plus led to an increase in tax filing rates and the use of Volunteer Income Tax Assistance sites for tax preparation.
- The program also led to an increase in child support payments among noncustodial parents.

The findings are consistent with other research on the federal EITC, indicating that an effective work-based safety net program can increase incomes for vulnerable and low-income individuals and families while encouraging and rewarding work. Future reports from the project will include findings from Atlanta, covering a different policy environment and labor market.

Contents

List of Exhibits

Table

Figure

Box

Preface

The labor market has changed dramatically over the past several decades, with an unprecedented period of stagnant wages and incomes for those in the bottom half of the job market. Reasons for these changes include technological developments, declining unionization, increased international trade, and, more recently, rising automation and domestic outsourcing. These trends are not likely to reverse any time soon, given the prospect of self-driving vehicles and the rise of the gig economy, in which a growing number of independent contractors work without the benefits associated with being a regular employee.

In the ongoing debate about how to address these trends, the Earned Income Tax Credit (EITC) has stood out as one policy success. It was introduced in the mid-1970s with a relatively small benefit and has been expanded several times since then, lifting millions of working parents and their children out of poverty. But it has never been expanded for workers without dependent children, who still only receive a maximum credit of about $500 and lose eligibility entirely once they earn over $15,000. This group of "singles" includes young workers just starting their careers, older workers whose children are grown, and parents who do not have custody of their children. All have faced the same sluggish wages over the past decades that workers with children have faced. Men's employment and earnings have been especially hard hit by these long-run labor market trends and by the Great Recession.

The Paycheck Plus demonstration in New York City and Atlanta looks at the effects of offering this group a more generous credit, an idea that has been proposed by policymakers on both the left and the right. Because a one-time test cannot fully simulate the effects of a national program whose benefits would be widely known, findings from this demonstration can provide but a preliminary sense of the kinds of effects one might expect from a national rollout.

The findings, available from New York City so far, are encouraging. Not all study participants were eligible for the bonus each year it was offered, since some did not work during the year or worked and earned too much to qualify, mimicking eligibility dynamics for the federal EITC. But a majority of those who were eligible received the bonus. The program left them with higher after-bonus earnings (earnings after taxes and the bonus) and left fewer of them in severe poverty. Paycheck Plus also led to a modest increase in employment rates, an increase that was larger for women in the study and larger for a subgroup of particularly disadvantaged men. The effects for the more disadvantaged men are encouraging, given the challenges this group faces in the labor market.

For a significant number of workers in this new and changing labor market, the EITC continues to be an important part of the safety net. The findings here show that expanding this benefit can help make work pay again for low-wage workers.

Gordon L. Berlin
President, MDRC

Acknowledgments

This report reflects the generous contributions and support of many people. We are especially grateful to the individuals participating in the Paycheck Plus evaluation, who have allowed us to learn from their experiences. We also appreciate the assistance of the many staff members at the Volunteer Income Tax Assistance (VITA) sites who helped operate the program.

The project would not have been possible without the work and dedication of several individuals and organizations, including Linda Gibbs, former New York City deputy mayor for Health and Human Services; Kristin Morse, former executive director of the New York City Mayor's Office for Economic Opportunity (NYC Opportunity); and several staff members at New York City's Human Resources Administration. We thank Carson Hicks and Jean-Marie Callan at NYC Opportunity for continued support and guidance throughout the project. We also thank Michele Ahern and her colleagues at the New York City Office of Child Support Services for assistance in implementing the program and for providing child support data. German Tejeda, Arlene Sabdull, and Andy Nieto at Food Bank for New York City were instrumental in recruiting participants and delivering the Paycheck Plus bonus and tax services to participants. We also thank Dale Grant and Patricia Brooks of Grant Associates for assistance with designing and implementing the employment-referral services.

The authors thank Gordon Berlin, Dan Bloom, Rob Ivry, John Hutchins, and James Riccio from MDRC and Carson Hicks and Jean-Marie Callan from NYC Opportunity for their helpful comments on the report. The authors also received comments from the Paycheck Plus Policy Technical Advisory Group: Hilary Hoynes, Harry Holzer, and Ron Mincy.

At MDRC, Alexandra Bernardi coordinated Paycheck Plus program operations in New York City and contributed valuable insights for this report. Kali Aloisi processed the quantitative data, and Rachael Metz coordinated the production of the report. Leslyn Hall helped design the survey instrument and monitored its administration. Jennie Kaufman edited the report and Carolyn Thomas prepared it for publication.

The Authors

Executive Summary

Over the past several decades, the U.S. labor market has been characterized by rising inequality and stagnating or falling real wages for lower-income workers. Although the current tight labor market is starting to generate modest wage increases at the lower end, the longer-term trends are expected to continue for low-wage workers with growing use of automation and both international and domestic outsourcing. Thus, there will continue to be a substantial number of workers whose full-time, full-year earnings would not lift a family out of poverty.

The Earned Income Tax Credit (EITC) was designed to assist the working poor and is widely viewed as a successful public policy that is both antipoverty and pro-work. Its primary effects are to increase the incomes of the working poor and to buffer the incomes of middle-class families when their earnings drop because of unemployment or reduced hours. By providing a refundable credit at tax time, the EITC has moved millions of adults and their children out of poverty and out of severe poverty.

But the generosity of the EITC varies substantially by the presence of dependent children. A low-income worker who is a single mother with two children, for example, can get a federal tax refund of up to $5,616 at tax-filing time. If she had one child she would be eligible for up to $3,400. If she had no children, the most she would receive is $510. Recognizing these disparities, policymakers on both sides of the aisle have promoted the idea of expanding the credit for adults without dependent children.

Paycheck Plus is a test of that idea. The program, which provides up to $2,000 at tax time to low-income working adults without dependent children, is being evaluated using a randomized controlled trial in two major American cities: New York City and Atlanta, Georgia. Paycheck Plus in New York City was funded by the New York City Mayor's Office for Economic Opportunity (NYC Opportunity), the Robin Hood Foundation, the Laura and John Arnold Foundation, the Edna McConnell Clark Foundation, the U.S. Department of Health and Human Services Office of Child Support Enforcement,[1] and the Chan Zuckerberg Initiative. MDRC worked with NYC Opportunity to design the demonstration and partnered with the New York City Human Resources Administration and Food Bank for New York City to implement the program. MDRC also evaluated its effects. The test in Atlanta is being funded by the Ford Foundation, the JPB Foundation, the Chan Zuckerberg Initiative, the Annie E. Casey Foundation, the W.K. Kellogg Foundation, the Kresge Foundation, the U.S. Department of Health and Human Services Office of Planning, Research and Evaluation, the U.S. Department of Labor, and the Lifepath Project.

This report presents the impacts of Paycheck Plus in New York. (Future reports from the project will examine effects from Atlanta.) The report follows study participants for three years after enrollment to assess effects of Paycheck Plus on income, employment, and earnings using

[1]The U.S. Department of Health and Human Services' Office of Child Support Enforcement, with the support of the New York State Office of Temporary and Disability Assistance, is providing funding to the demonstration in New York through a Section 1115 waiver.

administrative data and on a wider range of outcomes using a 32-month survey. The findings are consistent with research on the federal EITC for individuals with dependent children, showing that an EITC-like earnings supplement can also increase incomes and encourage work for individuals without dependent children, without creating work disincentives. However, while a generous EITC can provide an important safety net when earnings are low for a large group of workers, it is just one part of an effective safety net, since people can receive it only when they can find work.

Paycheck Plus

Paycheck Plus tests the effects of a much more generous EITC for childless adults. Figure ES.1 compares Paycheck Plus with the current EITC for workers without dependent children. Under the current EITC, a worker loses eligibility for benefits once his or her earnings reach about $15,000, and the maximum benefit that he or she can receive is $510. Paycheck Plus increases the maximum amount to $2,000 and expands eligibility up to $30,000 so that more low-wage workers qualify for some benefit. As is the case with the federal EITC, some or all of the bonus may be intercepted to pay down child support debt owed by a parent required to pay child support.

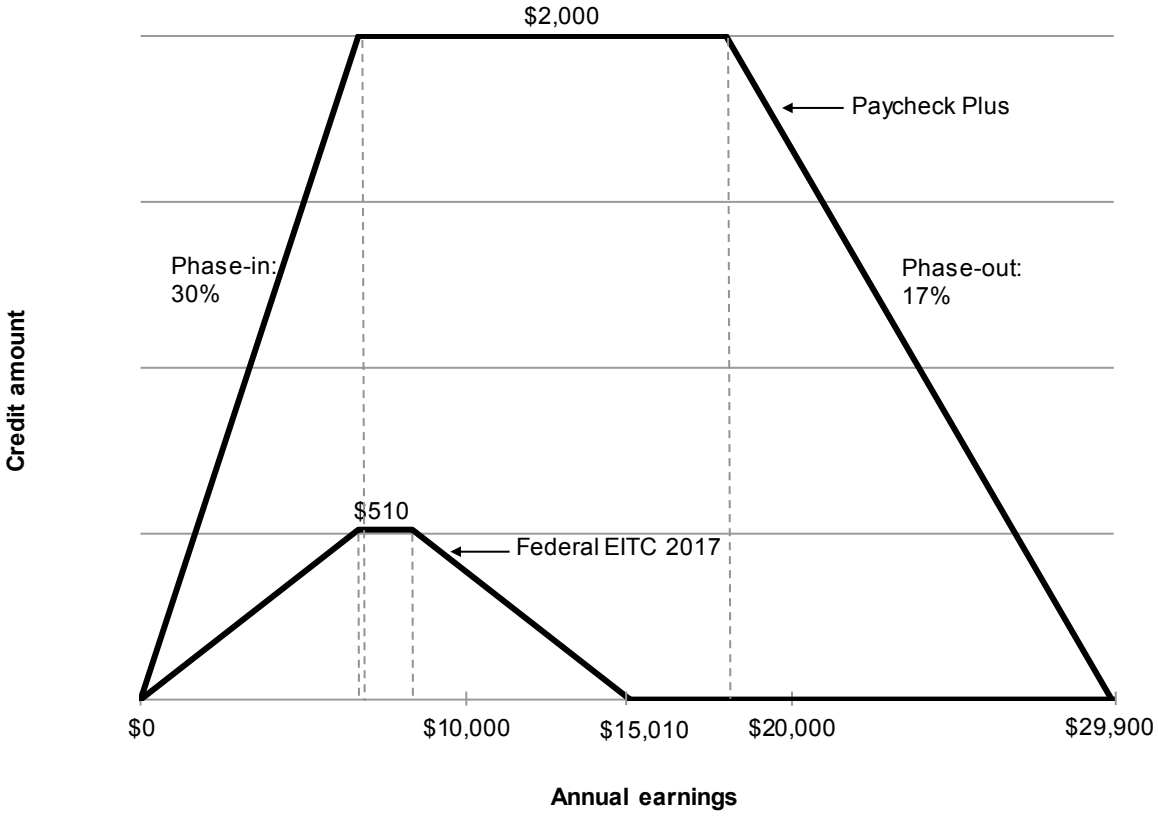
MDRC partnered with Food Bank for New York City (FBNYC) to run the project in New York. FBNYC directed its recruitment effort to organizations in its network and throughout the city that served populations who qualified for Paycheck Plus. Additional outreach was conducted through the New York City Human Resources Administration's cash assistance program, Supplemental Nutrition Assistance Program, and child support program. Between September 2013 and February 2014, the project recruited 6,000 single adults without dependent children to take part in the study, all of whom had earned less than $30,000 in the previous year.

Once they agreed to enroll in the study, half the participants were assigned at random to a group whose members were offered Paycheck Plus and half were assigned to a group not offered the program but still able to claim existing tax credits. Individuals assigned to the Paycheck Plus group were given a brief explanation of the bonus on a take-home sheet that illustrated the bonus amounts for various earnings levels. The bonus was available to the program group for three years, payable at tax time in 2015, 2016, and 2017, based on earnings in the previous calendar year.

Paycheck Plus was designed so that the process of applying for and receiving the bonus would be as similar as possible to the federal EITC, even though it operated outside of the tax system. As with the federal EITC, an individual had to file federal income taxes and have earned income in the eligible range to receive the bonus. One important difference was that participants would need to apply each year to receive the bonus; they did not receive it automatically once they filed taxes. Applying for the bonus required them to identify themselves as Paycheck Plus participants if they filed taxes at one of FBNYC's Volunteer Income Tax Assistance (VITA) sites or, if they filed elsewhere, to bring copies of their tax documents to a VITA site. Once bonus amounts were determined, MDRC worked directly with FBNYC and its payment vendor to request, issue, and monitor the deposit of each bonus payment to a bank account or debit card.

Figure ES.1

Paycheck Plus Versus the Federal Earned Income Tax Credit (EITC)



SOURCES: Urban Institute and Brookings Institution Tax Policy Center; Paycheck Plus program documents.

NOTES: The "Federal EITC 2017" line illustrates the credit schedule for a single adult with no qualifying children.

The phase-in and phase-out rates for the federal EITC shown are 7.65 percent.

Because study participants had to take additional steps to apply for the bonus, the project team conducted substantial marketing and outreach to individuals in the program group, starting in spring 2014 and continuing in the months leading up to each tax season during which the bonus would be paid. The outreach efforts reminded participants about their eligibility for the program. Many study participants were likely to forget about Paycheck Plus as time passed, given the long gap between study enrollment and the payment of the first bonus and the yearlong period between the bonus payments. The outreach also reminded participants about the structure of the program, including the maximum bonus they might receive. As is the case with the existing EITC, the bonus schedule can be challenging to understand.

The study measures the effects of the more generous credit on a range of outcomes. The most important economic outcomes include income, employment, and earnings. The bonus should directly increase the incomes of those who receive it. By conditioning benefits on work,

the program might also encourage those not working to move into work. For those already working, the expected effects on earnings will depend on the level of earnings, since the bonus increases as earnings increase up to a point, stays constant as earnings increase up to a second point, and declines as earnings increase even further, as displayed in Figure ES.1. This phase-up, phase-down design, while necessary to target benefits to the lowest-income workers, raises the possibility that some workers might reduce their earnings to become eligible for a larger credit. Finally, increases in income and work could have other effects on participants, including reductions in material hardship, improvements in health and subjective well-being, increased child support payments, and reduced involvement with the criminal justice system.

The sample recruited for the study in New York reflects the diversity of low-wage workers. About 59 percent of the sample members were men, 47 percent were age 35 or older when they joined the study, 22 percent had not obtained a high school diploma or equivalent, and 18 percent had been incarcerated at some point in the past. In addition, 9 percent were noncustodial parents. Although nearly all participants had worked at some point in the past, about a third had no earnings in the year before they enrolled. Another 30 percent had worked in the previous year but earned less than $7,000.

Findings

- **A majority of eligible participants received a bonus each year of the study, although bonus receipt fell over the three-year period.**

Among those eligible for the bonus, meaning that they earned between $1 and $30,000 during the year and did not claim dependents when filing taxes, 64 percent received it in Year 1, 57 percent in Year 2, and 54 percent in Year 3. Among those who received a bonus in a given year, the average bonus received was about $1,400.

It was expected that not all study participants would be eligible for the bonus every year. In fact, many low-income workers do not claim the federal EITC consistently from year to year, but cycle in and out of eligibility as their earnings increase or if they become unemployed.[2] The same was true for the Paycheck Plus study participants. Eligibility rates fell over time, from 70 percent in Year 1 to 54 percent in Year 3. Most of those who were not eligible in a given year did not have earnings. However, the biggest reason for the fall in eligibility from Year 1 to Year 3 was an increase in the number of participants earning more than $30,000.

There are several possible reasons why all those who were eligible did not receive a bonus. First, not all eligible workers file taxes — those with very low earnings are not required to do so. That group would also be eligible for a relatively small bonus, and take-up rates were lowest for those who stood to receive a small amount. Second, bonus receipt was not automatic for those who filed, as it would be if it were part of the federal tax system, but required extra steps on the part of the worker. Finally, the fact that Paycheck Plus was a new stand-alone program

[2]Tim Dowd and John B. Horowitz, "Income Mobility and the Earned Income Tax Credit: Short-Term Safety Net or Long-Term Income Support," *Public Finance Review* 39, no. 5 (2011): 619-652.

also meant that some study participants could have forgotten about it by the time tax season arrived, may not have understood their eligibility for a bonus, or did not trust that it was a legitimate program. Receipt rates would probably be higher if the bonus were part of the tax code.

- **Paycheck Plus increased after-bonus earnings, or earnings after accounting for taxes and the bonus, and reduced severe poverty.**

Data from IRS tax records were used to estimate effects on earnings net of taxes and credits (including the federal EITC and the Paycheck Plus bonus). On average, the program group had annual after-bonus earnings of $12,054 over the three-year period, compared with $11,419 for the control group, for a statistically significant increase of $635, or about a 6 percent increase (Table ES.1). This increase is averaged over the full sample, including those who never received a bonus; the effects were larger for bonus recipients.

Data from the 32-month survey provide information on total household income in the month before the survey. The program had no effect on average household income, in part because increases at lower income levels were offset by small reductions at higher income levels. However, the increases at lower income levels meant that Paycheck Plus reduced the incidence of severe poverty — 29.2 percent of the program group had incomes below 50 percent of the

Table ES.1

Paycheck Plus Effects on Income and Poverty

Outcome	Program Group	Control Group	Difference (Effect)
After-bonus earnings, Years 1-3 ($)	12,054	11,419	635 ***
Household income at survey ($)	16,210	16,259	-49
Income below 50% of poverty line (%)	29.2	32.6	-3.4 **
Income 50-100% of poverty line (%)	20.2	17.4	2.8 **
Income below poverty line (%)	49.4	50.0	-0.6

SOURCES: IRS tax forms, W-2s, and 1099-MISCs; Paycheck Plus 32-month survey.

NOTES: Estimates of effects on after-bonus earnings rely on IRS data, with a total sample size of 5,968. Estimates of effects on all other outcomes in the table rely on survey data, with a total sample size of 3,289.

Rounding may cause slight discrepancies in sums and differences.

After-bonus earnings refers to earnings plus credit amount minus taxes.

A two-tailed t-test was applied to differences between the outcomes of the program and control groups. Statistical significance levels are indicated as: *** = 1 percent; ** = 5 percent; * = 10 percent.

Estimates were regression-adjusted using ordinary least squares, controlling for pre-random assignment characteristics of sample members.

poverty line, compared with 32.6 percent of the control group, for a statistically significant reduction of 3.4 percentage points. The program had no effect on the overall poverty rate, because most of its effect was to move individuals from severe poverty (less than 50 percent of the poverty line) to less-severe poverty (between 50 percent and 100 percent of the poverty line). The program did not lead to a reduction in material hardship, as measured using several survey questions about food insecurity, evictions, and inability to pay bills or buy necessities.

- **Paycheck Plus increased employment rates.**

Data from IRS tax records were also used to estimate effects on employment and earnings. Data for the control group show that over the three-year period, about 75 percent of study participants worked, although employment rates fell somewhat over time (Table ES.2). Paycheck Plus had no significant effect on employment in Year 1 but increased employment rates in Year 2 and Year 3, by 2.6 percentage points and 2.1 percentage points, respectively. It was expected that the program might take time to have effects, as participants learned about and began to trust that the bonus was legitimate. The effects in Years 2 and 3 are more likely to approximate the ongoing effects of a permanent program. Over the full three-year period, the program increased the average annual employment rate by 1.9 percentage points. The size of the impact on employment is within the range of what would have been predicted, given prior research on how responsive employment rates are to increases in the payoff to work.

The expected effects on earnings were less clear, given the different incentives the bonus creates along different parts of the schedule. The findings show that the effects do in fact differ by earnings level. The program led to statistically significant increases in earnings in the bottom half of the earnings distribution, while effects on earnings in the top half were negative but small and not statistically significant.

- **Providing individuals with information about employment services may make the employment effects of Paycheck Plus larger.**

Some individuals might have difficulty responding to the work incentives created by Paycheck Plus if they cannot find work or increase their earnings. To test whether additional employment support helps, half the program group members who reported earning less than $10,000 in the year before study entry were assigned at random to an "employment-referral group." This group was eligible for the bonus and eligible to receive information about and referrals to existing employment services in their area. The employment-referral group gained access to an admittedly light-touch information intervention, but one that might mimic how local nonprofits would respond if the EITC were made more generous for adults without dependent children.

The findings suggest that adding this employment information to the bonus may lead to larger effects on employment rates than just the bonus alone. The difference in effects between the policies with and without employment service information is not statistically significant, and

Table ES.2

Paycheck Plus Effects on Employment Rates

Outcome	Program Group	Control Group	Difference (Effect)		Program Group	Control Group	Difference (Effect)		Difference Between Groups
	Full study sample								
Year 1	79.7	78.8	0.9						
Year 2	76.4	73.8	2.6	***					
Year 3	75.7	73.6	2.1	**					
Years 1-3	77.3	75.4	1.9	**					
	More disadvantaged men				**Other men**				
Year 1	73.1	72.6	0.6		79.5	80.0	-0.5		
Year 2	60.6	58.4	2.1		79.0	78.8	0.2		
Year 3	62.4	56.6	5.8	**	76.6	78.0	-1.3		††
Years 1-3	65.4	62.5	2.8		78.4	78.9	-0.6		
	All women				**All men**				
Year 1	84.0	81.8	2.3	*	76.7	77.0	-0.3		
Year 2	83.0	78.4	4.6	***	71.7	71.0	0.7		†
Year 3	82.5	79.9	2.6	*	70.8	69.6	1.2		
Years 1-3	83.2	80.0	3.2	***	73.1	72.5	0.5		†
Sample size (total = 5,968)									

SOURCES: IRS tax forms, W-2s, and 1099-MISCs.

NOTES: Employment is defined as having any earnings from wages or self-employment income.
Rounding may cause slight discrepancies in sums and differences.
A two-tailed t-test was applied to differences between the outcomes of the program and control groups. Statistical significance levels are indicated as: *** = 1 percent; ** = 5 percent; * = 10 percent. Statistical significance levels for differences across subgroup impacts are indicated as: ††† = 1 percent; †† = 5 percent; † = 10 percent.
Estimates were regression-adjusted using ordinary least squares, controlling for pre-random assignment characteristics of sample members.

the results should be interpreted with caution. Nonetheless, the pattern of results points toward a potential need for effective and accessible workforce and training services for low-income workers, even in the presence of policies that make work pay.

- **Effects on employment were concentrated among the more disadvantaged men in the study and among women.**

The study examines effects separately for several policy-relevant subgroups, selected because prior research suggested that they might respond differently to the bonus. The key subgroups were women compared with men, individuals with no or low earnings before study entry

compared with those with higher earnings, and more disadvantaged men compared with other men. The group of "more disadvantaged men" was defined to include men who had been incarcerated and men who were noncustodial parents ordered to pay child support, both of whom face particular barriers or disincentives in the labor market.

The findings show that the program's effects on work were significantly larger in Year 3 for more disadvantaged men than for other men (Table ES.2). For example, Paycheck Plus increased employment rates in Year 3 by 5.8 percentage points (or 10 percent) for more disadvantaged men, compared with an insignificant difference of -1.3 percentage points for all other men. In addition, the program led to larger reductions in poverty and severe poverty for the former group. Effects on employment rates were also larger for women than for men, particularly in Year 2.

Finally, there is a pattern of larger effects on employment rates and earnings for those who did not work in the year before study entry (not shown). Although none of the differences in effects between this group and those with earnings were statistically significant, this pattern is consistent with the fact that the strongest work incentives from the program are for those on the margin of work versus not working.

- **Paycheck Plus led to an increase in tax filing rates and the use of VITA sites for tax preparation.**

In 2017, 61.6 percent of people in the control group filed their taxes. Paycheck Plus increased the filing rate by 5.5 percentage points, roughly similar to its effects in 2015 and 2016. The program also led to change in the methods used to prepare taxes, leading to an increase in the use of VITA sites. Low-income workers without dependent children typically do not file using VITA sites, as evidenced by the low rate for the control group — only 11.9 percent filed taxes using a VITA site in 2017. Paycheck Plus more than doubled that rate.

Filing at one of FBNYC's VITA sites was not a requirement for bonus receipt, although it was strongly encouraged. The increase in the use of VITA sites probably reduced out-of-pocket spending on tax preparation for program group members, although it may have increased the time they had to wait for their taxes to be prepared.

- **Paycheck Plus led to an increase in child support payments among noncustodial parents.**

About 9 percent of study participants were noncustodial parents at study entry. This group, almost all of whom were men, also saw fairly large increases in employment and earnings in Year 3 as a result of Paycheck Plus. Data from child support records suggest that these results led to an increase in child support payments. In Year 3, for example, 65.2 percent of program group noncustodial parents made at least one child support payment, compared with 58.0 percent of control group parents, for an increase of 7.2 percentage points.

- **Paycheck Plus had few effects on other secondary outcomes, such as family formation, criminal justice involvement, and health status.**

Although income, poverty, and work are most directly affected by Paycheck Plus, the program could have an impact on other outcomes through effects on the primary ones. The study examined a range of secondary outcomes, including physical and mental health status, marital status and living arrangements, criminal justice involvement, and job characteristics, and found few detectable effects. The relatively modest increases in income and work for the full study sample (which includes those who did not receive a bonus) suggest that any secondary effects studied were likely to be small. The program did lead to a reduction in anxiety and depression, as measured using a well-known mental health scale. It is an interesting and encouraging finding, and one that is consistent with other research. However, it should be considered exploratory at this stage and needs to be confirmed, perhaps with findings from the test in Atlanta.

Conclusion

In 2017, one in five workers in the United States earned less than $11.40 per hour.[3] At this wage rate, someone working full time for the whole year would earn just $22,800. These poverty-level wages reflect decades of changes in the labor market that are unlikely to be reversed in the near future. In fact, among the 10 occupations projected to add the most jobs to the economy over the next 10 years, 5 of them pay less than $25,000 per year.[4]

The EITC has helped to counter these trends, but only for families with children. Paycheck Plus attempts to answer key questions concerning the effects of offering a more generous EITC to adults without dependent children. How many individuals are eligible and receive the bonus in a given year, and how much does it increase their incomes? Does it encourage more individuals to move into work, and does it reduce earnings among higher-income workers? Finally, by increasing income, does the bonus have any secondary effects, such as reducing material hardship, improving mental health, or increasing child support payments?

The findings for the Paycheck Plus test in New York City show that the program increased after-bonus earnings and reduced severe poverty. It generated small but positive effects on employment, especially for very disadvantaged men and for women. It increased the payment of child support among noncustodial parents, but it did not have secondary effects on other outcomes, such as material hardship, criminal justice involvement, or physical health.

The results are consistent with much other research on the EITC, indicating that an effective work-based safety net program can increase incomes for vulnerable and low-income individuals and families while encouraging and rewarding work. Future reports from the project

[3]Economic Policy Institute, "Wages by Percentile," *State of Working America Data Library* (2018), https://www.epi.org/data/#?subject=wage-percentiles.

[4]Bureau of Labor Statistics, "Occupational Outlook Handbook: Most New Jobs," https://www.bls.gov/ooh/most-new-jobs.htm (last modified April 13, 2018). Occupational projections for 2016-2026 are based on 2017 median annual wage. Examples of these occupations include personal care aide, food service worker, and home health aide.

will include findings from Paycheck Plus in Atlanta, providing a test in a different policy environment and labor market. The lessons from Paycheck Plus in both cities will provide important information about the potential effects of expanding the EITC for low-income workers without dependent children.

Introduction

In 2017, one in five workers in the United States earned less than $11.40 per hour.[1] At this wage rate, someone working full time for the whole year (40 hours a week for 50 weeks) would earn $22,800. Those earnings would not lift a family of four above the federal poverty line, about $25,000. The substantial number of American workers earning such low pay reflects years of wage stagnation and growing inequality, as the labor market has been buffeted by labor-displacing technological changes, increased international trade, declining unionization, the Great Recession, and rising domestic outsourcing. Although the tight labor market in 2018 is starting to generate modest wage increases for low-wage workers, many of the market trends are expected to continue with the rise of artificial intelligence and autonomous vehicles. Furthermore, among the 10 occupations projected to add the most jobs to the economy over the next 10 years, 5 of them pay less than $25,000 per year.[2]

The Earned Income Tax Credit (EITC) was designed to address the issue of the working poor. By providing a refundable credit to low-wage workers at tax time, the EITC has moved millions of adults and their children out of poverty and out of severe poverty. But the generosity of the EITC varies substantially by the presence of dependent children. A low-income worker who is a single mother with two children, for example, can get a federal tax refund of up to $5,616 at tax-filing time. If she had one child she would be eligible for up to $3,400. If she had no children, the most she could receive is $510.

By providing such a small credit to low-wage workers without dependent children, the EITC does little to alleviate poverty for millions who have faced a tough labor market with stagnant or declining wages for decades. Less-educated men, in particular, have seen their wages and employment rates fall substantially.[3] Many of these men do not have children but are trying to move up in the labor market and start a family, while others are noncustodial parents who may not live with all of their children but often help support them. And many low-income workers without dependent children are women; some have already raised their children and now may be caring for elderly parents.

The EITC is widely viewed by policymakers and researchers as a successful public policy, since it is antipoverty and pro-work.[4] Its primary effect is to increase incomes, in the process lifting more than 9 million families out of poverty each year. By conditioning benefits on work, the program might also encourage those not working to move into work. Research on the credit for families with children finds that it does modestly increase employment rates among single mothers. One potential concern with the policy is raised by its structure, in which benefits increase

[1]Economic Policy Institute (2018c).

[2]Bureau of Labor Statistics (2018c). Examples of these occupations include personal care aide, food service worker, and home health aide.

[3]Economic Policy Institute (2018a,b).

[4]Hoynes and Patel (2017); Hoynes, Rothstein, and Ruffini (2017).

as earnings increase up to a point, stay constant as earnings increase to a second point, and decline as earnings increase even further. This phase-out design, necessary to target benefits to the lowest-income workers, might cause some workers to reduce their earnings to become eligible for a larger credit. The existing research for families with children suggests that such deliberate reductions in earnings are small to nonexistent.[5]

For low-income workers without dependent children, the Paycheck Plus Demonstration provides a more generous credit than the EITC — up to $2,000 at tax time. The program also extends benefits to workers earning up to $30,000 per year, whereas childless workers become ineligible for the federal EITC upon earning more than $15,000.

Paycheck Plus is being operated and evaluated through a randomized controlled trial in New York City and Atlanta, Georgia. In New York, 6,000 individuals without dependent children who earned less than $30,000 in the prior year were recruited to take part in the study from late 2013 to early 2014. Half the participants were randomly selected to be eligible for the Paycheck Plus program for three years, beginning with the 2015 tax season. The other half of the participants served as a control group. In Atlanta, 4,000 individuals were recruited for the study in late 2015 through early 2016, with half randomly selected to be eligible for the program for three years, beginning with the 2017 tax season. Box 1 provides more details about the Atlanta study.

The demonstration is designed to assess the effects of offering a more generous credit to low-income adults without dependent children. For example, how many people in the study will be eligible for the bonus in a given year, meaning that they worked but earned less than $30,000? How many remain eligible for all three years? How many eligible workers take up the bonus, how much do they receive on average, and how much does it increase incomes? Does the bonus encourage more individuals to move into work, and does it reduce earnings among higher-income workers who may try to qualify for a larger bonus by reducing work effort? Finally, by increasing income, does the bonus have any secondary effects, such as reducing material hardship, improving mental health, or increasing child support payments?

By testing an expanded bonus in two distinct cities, the demonstration will help inform discussions of a national expansion of the EITC for childless adults. There have been a number of proposals in recent years to expand the federal EITC, proposals that focus only on adults without dependent children and proposals that expand the credit for all families.[6] There is also growing interest among the states in the EITC, with 26 currently offering a state EITC, typically set to a percentage of the federal credit.[7]

An earlier report presented effects of the program in New York after two years.[8] The program was successfully implemented in New York City, and in each of the first two years, a

[5]Nichols and Rothstein (2016).

[6]Office of Management and Budget (2015); Ryan (2014); Marr, Horton, and Duke (2017); Sperling (2017).

[7]Internal Revenue Service (2018).

[8]Miller et al. (2017).

Box 1

Paycheck Plus in Atlanta

With support from several funders (see page 4), MDRC has partnered with the United Way of Greater Atlanta to test Paycheck Plus in that city. Atlanta is a good place to replicate the test of Paycheck Plus because it has a diverse and strong economy but lower average wage rates across all occupations.* New York State had a minimum wage of $10.40 per hour in 2018, and New York City's minimum wage was $12 to $13 per hour, depending on employer size.† In contrast, Georgia has a state minimum wage of $5.15 per hour, which is lower than the federal minimum wage ($7.25 per hour), although that rate only applies to workers in exempt occupations, such as farm or seasonal laborers and tipped employees.‡ The bonus might have different effects across areas with higher versus lower wage levels. Lower wages are more likely to place workers on the phase-in or plateau portion of the bonus schedule, which may increase the average bonus amount. Lower wages also mean that a given bonus amount represents a larger percentage increase in income.

The Atlanta team recruited 4,000 individuals for the study between October 2015 and April 2016. Half of them were selected at random to be offered Paycheck Plus, with bonuses to be paid in tax years 2017, 2018, and 2019; the other half serve as a control group. As with the New York project, the evaluation will track outcomes for both groups to determine its effects on income, earnings, well-being, and work. The first report will be published in late 2019.

---

*Bureau of Labor Statistics (2018a,b).
†New York State Department of Labor (2018).
‡National Conference of State Legislatures (2018).

majority of eligible participants received a bonus. The program led to an increase in after-bonus earnings, or earnings after taking taxes and credits into account, and it increased tax filing in both years. It generated a small increase in employment during the second year, with larger effects for women than for men, and there was no evidence that the program reduced work effort or earnings for those with higher initial earnings. Paycheck Plus also increased the payment of child support among noncustodial parents. The relatively high take-up of the bonus among those eligible was encouraging, given that Paycheck Plus takes more effort than the EITC: As a demonstration program operating outside the tax system, it requires participants to take extra steps beyond tax filing to receive the bonus.

This report extends and updates the earlier findings by presenting effects in New York through the first three years following program entry on tax filing, employment, and earnings, using administrative data, as well as on a wider range of outcomes, using a 32-month survey of participants. The new results show that fewer sample members were eligible for the bonus in Year 3, but a majority of those eligible received a bonus in that final year. Access to the Paycheck Plus bonus continued to increase after-bonus earnings through Year 3, and it reduced the incidence of severe poverty. The program generated small, positive effects on employment, effects that were larger for women than for men and larger for a subgroup of particularly disadvantaged men with low expected employment rates and earnings. Paycheck Plus continued to increase child support

payments among noncustodial parents. Finally, Paycheck Plus had few detectable effects on other secondary outcomes, such as on survey-based measures of subjective well-being or criminal justice involvement.

The Paycheck Plus findings are consistent with research on the federal EITC for individuals with dependent children. They show that an EITC-like earnings supplement can increase incomes and employment for individuals without dependent children as well, without creating work disincentives. The EITC helps support both workers with persistently low earnings and a large group of workers whose earnings and employment fluctuate and who move in and out of EITC eligibility from year to year. However, while a generous EITC can provide an important safety net when earnings are low for a wide range of workers, it is just one part of an effective safety net, since people can receive it only when they can find work.

Paycheck Plus in New York City was funded by the New York City Mayor's Office for Economic Opportunity (NYC Opportunity), the Robin Hood Foundation, the Laura and John Arnold Foundation, the U.S. Department of Health and Human Services Office of Child Support Enforcement,[9] and the Chan Zuckerberg Initiative. MDRC worked with NYC Opportunity to design the demonstration and partnered with the NYC Human Resources Administration and Food Bank for New York City to implement the program. MDRC also evaluated its effects. The test in Atlanta is being funded by the Ford Foundation; the JPB Foundation; the Annie E. Casey Foundation; the Chan Zuckerberg Initiative; the W.K. Kellogg Foundation; the Kresge Foundation; the U.S. Department of Health and Human Services Office of Planning, Research, and Evaluation; the U.S. Department of Labor; and the Lifepath Project.

The Paycheck Plus Demonstration

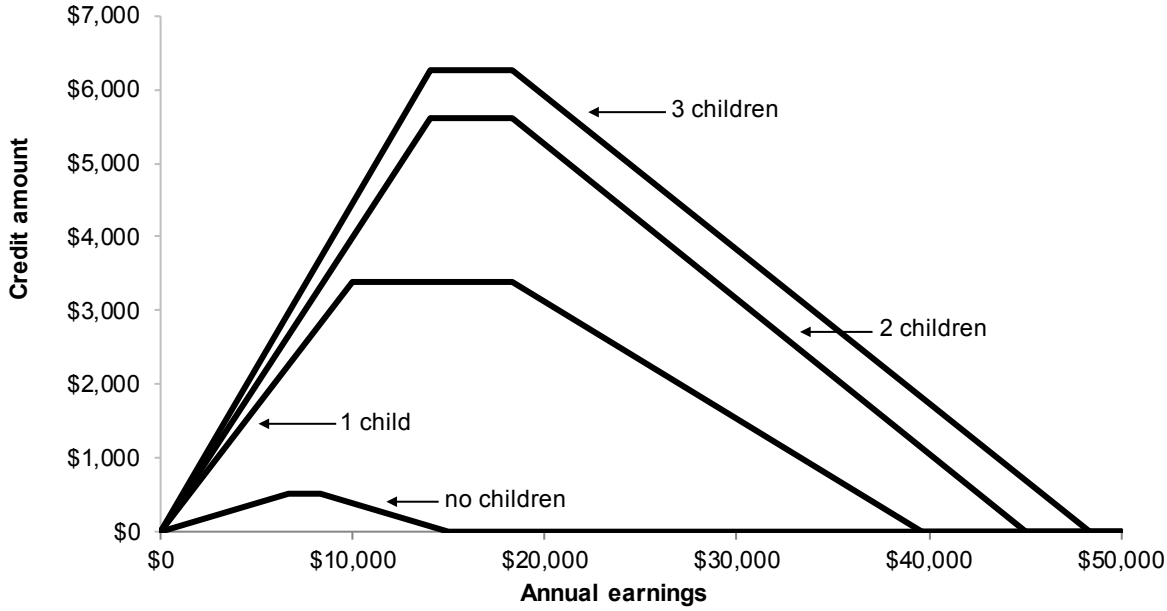
The Bonus

The Paycheck Plus demonstration tests the effects of a much more generous EITC for adults without dependent children. Figure 1 presents 2017 federal EITC schedules for single adults, by number of dependent children. The EITC structure consists of a phase-in region where the credit accumulates as earnings increase to supplement the earnings of eligible individuals, a plateau region where the credit remains constant as earnings increase, and a phase-out region where the credit is reduced as earnings increase. For a single worker with three children, for example, the phase-in rate is 45 percent (the bonus is equal to 45 percent of earnings up to a maximum bonus of just over $6,000). Once earnings reach a certain point, the bonus phases out at a rate of 21 percent (the bonus is reduced by 21 cents for each dollar increase in earnings). In contrast, the phase-in rate is just under 8 percent for single adults without children and the maximum credit is only around $500. An individual without dependent children working full time, year-round at $9 per hour would earn too much to qualify for any benefits.

[9]The U.S. Department of Health and Human Services' Office of Child Support Enforcement, with the support of the New York State Office of Temporary and Disability Assistance, is providing funding to the demonstration in New York through a Section 1115 waiver.

Figure 1

Earned Income Tax Credit (EITC) for Single Adults with Different Numbers of Children, 2017



SOURCE: Tax Policy Center (2017).

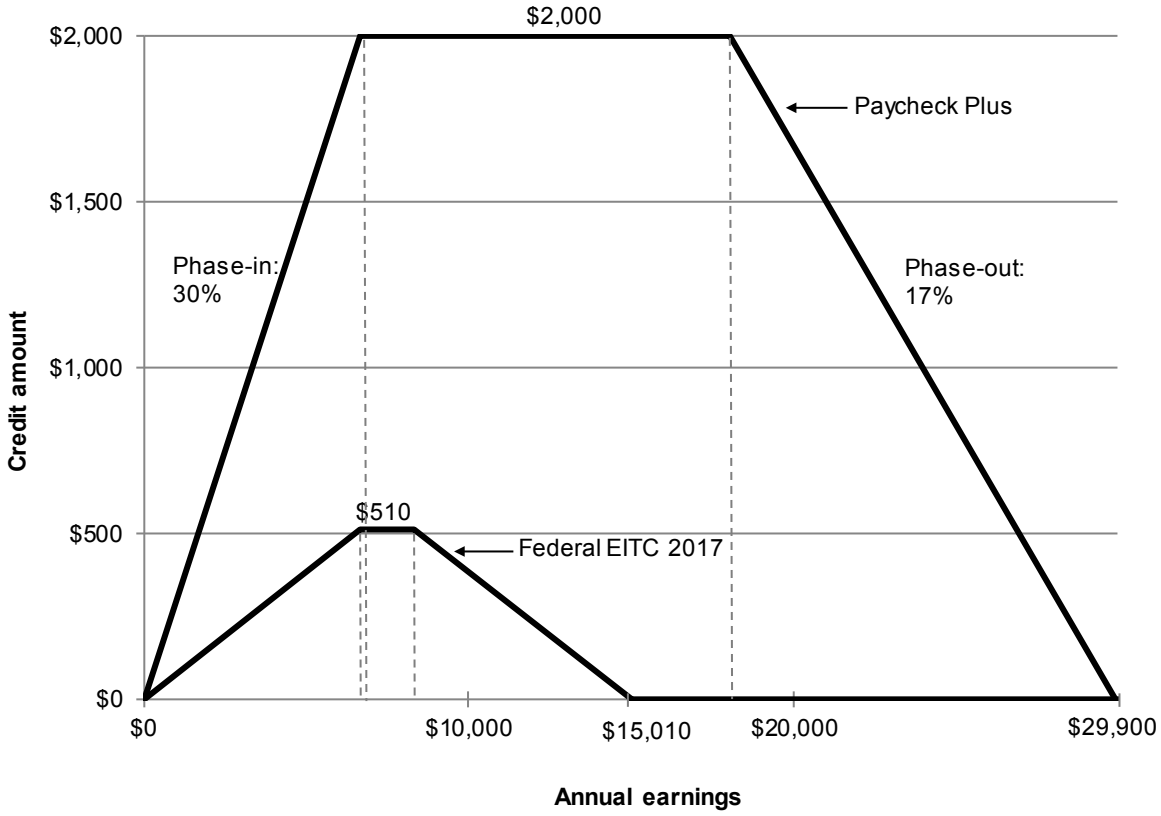
Paycheck Plus provides a maximum credit to childless adults equal to about 60 percent of the maximum benefit available to a single parent with one child. It also expands the reach of the plateau region, so more low-wage workers qualify for the maximum benefit. As Figure 2 shows, benefits are phased in at a rate of 30 percent, with a maximum benefit of $2,000, and phased out at a rate of 17 percent. An individual can continue receiving some benefits until his or her earnings reach just under $30,000. The bonus "tops up" the existing federal EITC for this group to bring their total credit up to a maximum of $2,000. Thus, if a worker were eligible for $2,000 from Paycheck Plus and received $300 from the federal EITC, the Paycheck Plus bonus would equal $1,700.

Paycheck Plus was designed so that the process of applying for and receiving the bonus would be as similar as possible to the federal EITC, even though it operates outside of the tax system. To receive the bonus, an individual must file federal income taxes and have earned income in the eligible range. Similarly, following the federal EITC, some or all of the bonus for New York participants may have been intercepted to pay down child support debt owed by a noncustodial parent.[10]

[10]The intercept is the one feature of the program that differs between the programs in New York and Atlanta: The bonus is not intercepted for child support debt in Atlanta. Program designers at MDRC opted to test a version without an intercept where it was feasible to do so (Atlanta) to enhance the attractiveness of the bonus to noncustodial parents. OCSE was not a partner on the Atlanta project and as a general policy supports the inclusion of an intercept in New York.

Figure 2

Paycheck Plus Versus the Federal Earned Income Tax Credit (EITC)



SOURCES: Tax Policy Center (2017); Paycheck Plus program documents.

NOTES: The "Federal EITC 2017" line illustrates the credit schedule for a single adult with no qualifying children.
The phase-in and phase-out rates for the federal EITC shown are 7.65 percent.

Intake and Recruitment

Paycheck Plus is being tested using a randomized controlled trial. Between September 2013 and February 2014, the project in New York recruited just over 6,000 single adults without dependent children to take part in the study. Individuals were eligible for study enrollment if they were not married, had a valid Social Security number, were not planning to claim a dependent child on their taxes in the subsequent year, were between the ages of 21 and 64 (note that the federal credit is available only to individuals ages 25 and older),[11] earned less than $30,000 in the

[11]Paycheck Plus was made available to younger adults (ages 21 to 24) because they were significantly affected by the changes in the labor market discussed earlier and because of the importance of early work experience on later work outcomes.

prior year, and were not receiving or applying for Supplemental Security Income (SSI) or Social Security Disability Insurance (SSDI).

Once eligible individuals agreed to participate, half of them were assigned at random to a group eligible for Paycheck Plus and half were assigned to a group not eligible for the program but still eligible for existing tax credits. Individuals assigned to the Paycheck Plus group were given a brief explanation of the credit on a take-home sheet that illustrated the bonus amounts for various earnings levels, indicating that the bonus was reduced to $0 once earnings reached just under $30,000. The bonus was available to the program group for three years, payable at tax time in 2015, 2016, and 2017, based on earnings in the previous year: that is, earnings in 2014, 2015, and 2016.

Although individuals had to be single to enroll in the study, they remained eligible to receive the bonus for three years if they subsequently married. In addition, to avoid creating a "marriage penalty," the Paycheck Plus bonus for married participants was calculated based on individual earnings, rather than family earnings. If an individual gained dependent children through birth, adoption, or marriage, however, that person would not be able to receive any Paycheck Plus bonus since the federal EITC for families with one or more children is more generous than Paycheck Plus.[12]

The demonstration also included a second randomized controlled trial embedded within the larger trial. Among the program group members who reported earning less than $10,000 in the year before study entry, half were assigned at random to an "employment referral group," eligible to receive additional information about and referrals to existing employment services in their local area — an admittedly light-touch information intervention. The test of the employment referral intervention was undertaken because of the concern that some individuals might have difficulty responding to the work incentives created by Paycheck Plus if they could not find work or increase their earnings. The employment referral intervention mimicked how local nonprofits might respond to an enhanced work incentive for low-income individuals without dependent children if the EITC were permanently expanded for this group in the manner simulated by the Paycheck Plus demonstration. The findings from this embedded test show whether Paycheck Plus in combination with additional employment services information led to larger effects on work than the bonus by itself.

Recruitment occurred a full year before the first bonus payout, because the bonus amount paid in 2015 would depend on earnings in 2014. Thus, participants were given a full year to adjust their work and earnings in response to the program. MDRC's partner, Food Bank for New York City (FBNYC), which runs the largest network of Volunteer Income Tax Assistance (VITA) sites in the city, directed its recruitment effort to organizations in its network and throughout the city that served populations eligible for Paycheck Plus. These included FBNYC's database of former VITA clients, food pantries and soup kitchens, programs that serve formerly incarcerated people, workforce and job training organizations, one-stop career centers, community colleges,

[12]In principle, the expanded credit would continue to "top up" the federal EITC received by the individual's family, but the "top up" would be zero in these cases.

fatherhood programs, and social service agencies. New York City's Human Resource Administration, which also helped coordinate the start of recruitment for the study, sent letters introducing the study to cash assistance recipients, Supplemental Nutrition Assistance Program (SNAP) recipients, and noncustodial parents and worked with the study team to recruit individuals on-site at SNAP and job centers. In addition, the study was advertised using various media outlets, including local radio stations, New York City government websites (such as 311), and Twitter, and through a community flyer campaign.

Data Sources

The demonstration used several data sources to administer the program and track its effects. Basic demographic and background data were collected from all study participants in a baseline survey administered just before random assignment. The baseline data include information on education level, employment and earnings, household composition, and involvement with the criminal justice system. These data are used to describe the sample and identify key subgroups.

To track key outcomes over time, administrative records data were collected from several sources. As Table 1 shows, work, income, and earnings data were available from three sources: unemployment insurance (UI) wage records, tax records from the Internal Revenue Service (IRS), and a survey of participants fielded about 32 months after enrollment. The administrative tax data are more comprehensive than the New York State UI records since the tax data include self-employment earnings (from 1099 forms and Schedule C filings) and out-of-state earnings. The survey collected information on income and work, but also information on subjective and material well-being, housing status, criminal justice involvement, family structure, and child support payments. The survey was fielded to a random subset of 80 percent of the participants and achieved a response rate of 70 percent, with a slightly higher survey response rate for the program group than for the control group.[13] Finally, administrative records measuring child support payments and arrears were obtained from the New York City Office of Child Support Services for the period of January 2014 through December 2016.

Because individuals were randomly assigned either to the program group or to the control group, the effects of the program can be estimated as the differences between the two groups' outcomes after the point of random assignment.[14] Impacts are estimated for each outcome using a regression model in which the outcome of interest is regressed on an indicator for program status and several variables measured at or before the time of random assignment. Including such baseline variables as covariates in the regression can serve to improve the precision of the impact

[13]Appendix B presents a detailed analysis of the survey responses; Appendix Table B.1 provides survey response rates by research group for the full sample and for subgroups.

[14]Appendix Table A.1 presents a comparison of the baseline characteristics of the program and control groups, showing that the two groups were similar on average when they enrolled in the study and indicating that random assignment was properly administered.

Table 1

Data Sources and Key Outcomes

Data Source	Period Covered	Key Outcomes Created
Unemployment insurance wage records[a]	September 2013 - December 2017	Ever employed Years 1-3 Average earnings Years 1-3
IRS tax records, W-2s, and 1099s[b]	January 2013 - December 2016	Any earnings (2014, 2015, and 2016)
		Average earnings from wage and salary earnings (2014, 2015, and 2016)
		Average earnings from self-employment (2014, 2015, and 2016)
		After-bonus earnings (earnings plus credits and the bonus, minus taxes)
32-month survey[c]	Month of study entry through 32 months after study entry	Household income from all sources in the month before survey interview
		Income below the poverty line
Child support records[d]	January 2014 - December 2016	Ever made a payment and average monthly payment amount (2014, 2015, and 2016)
		Owed child support debt at the end of 2014, 2015, and 2016
		Average amount owed at the end of 2014, 2015, and 2016
Program data on bonus receipt[e]	January 2015 - December 2017	Bonus receipt rates and average amount received (2015, 2016, 2017)

NOTES: [a]From the New York State Department of Labor.

[b]Filing status, earnings, and self-employment income were obtained for all tax filers; wage earnings from W-2 forms and self-employment income from 1099 forms were obtained for tax filers and nonfilers.

[c]The survey was fielded to a random subset of the full study sample during summer 2016. The survey obtained information on income, well-being, work, health status, family structure, child support payments, and criminal justice involvement.

[d]New York City Office of Child Support Services (OCSS) administrative records indicated child support order amounts, monthly payment amounts, and debt amounts for all noncustodial parents registered in the OCSS system.

[e]Information was derived from MDRC's tracker databases and tax records collected by Food Bank for New York City.

estimates. The baseline covariates included are the participant's age, sex, education level, race/ethnicity, prior earnings, and prior incarceration status, and whether the participant was a noncustodial parent.[15]

[15]Noncustodial parents are defined as participants who have open, IV-D child support cases (that is, cases where the custodial parent is receiving services from the child support agency) with a monthly obligation amount and/or an arrears amount, according to administrative records. Using this definition, just under 9 percent of the sample were noncustodial parents at study entry. In contrast, about 12 percent of study participants reported that they had minor children who did not live with them, a group that may include some parents who did not have child support orders in place or who had orders set outside of the IV-D system.

Key Outcomes and Expected Effects

The study measures the effects of the more generous credit on a range of outcomes. The most important economic outcomes are income, work, and earnings. The bonus should directly increase the incomes of those who receive it, depending on a participant's earnings level. Those with earnings on the phase-in part of the schedule, for example, would see a 30 percent increase in earnings, owing to the 30 percent phase-in rate of the bonus. Such increases in income should reduce the poverty rate and potentially have other effects on participants, such as reductions in material hardship and improvements in health and subjective well-being.

The predicted effect of Paycheck Plus on work decisions depends on where an individual's earnings place him or her on the bonus schedule and how well he or she understands its precise structure. For someone who is not working, being assigned to the program group and offered the bonus should create an unambiguous, positive incentive to work, since it increases the payoff to working. For those whose earnings place them on the bonus schedule, the effect of being offered the bonus will depend on two sometimes competing factors — the wage effect (also known as the substitution effect) and the income effect. The wage effect suggests that an individual will want to work more hours if the reward for work is higher; under the income effect, a bonus discourages work because the individual can earn the target income in fewer hours. On the phase-in part of the schedule (the upward sloping portion, as shown in Figure 2), the wage effect encourages work, since individuals face a higher effective wage rate (gaining additional benefits as they earn more). The income effect might encourage someone to work less over the course of the year, although it would not encourage the individual to drop out of work entirely. On the plateau, or flat, region of the bonus, the wage effect is zero, since the bonus amount does not change with earnings, and the income effect serves to discourage work. On the phase-out portion, the wage effect encourages fewer hours, since benefits are reduced as earnings increase, while the income effect also encourages fewer hours, since the bonus still exists. Finally, for workers with earnings above the eligibility point for any benefits, being assigned to the program group and offered the bonus might encourage them to reduce their earnings to become eligible for some benefits. In fact, one concern with the structure of the EITC, and thus Paycheck Plus, is that it might encourage higher-earning individuals to cut back on work.

Thus, the bonus is expected to increase the employment rate, although its overall effect on earnings is not clear given the different incentives it creates along the schedule. Estimates from research in economics on how responsive employment rates are to changes in wage rates suggest that a 10 percent increase in wage rates could increase employment anywhere from 0 percent to 6 percent.[16] Thus, if the bonus produces a 9 percent increase in the effective wage for the typical program group member, it should increase employment rates by anywhere from 0 percent to

[16]See McClelland and Mok (2012) for a review. Labor supply wage elasticity estimates tend to vary by sex, income level, education level, and race/ethnicity.

5 percent.[17] The findings from the earlier report were consistent with this range, showing an increase in the employment rate in Year 2 of about 3.5 percent. Effects in Year 2 were also larger for women than for men.[18] This finding is consistent with the typical findings in the economics literature showing that women's employment is more responsive to changes in the payoff to work, likely because women have lower employment rates to begin with and are often more likely to be secondary earners in families. In fact, much research suggests that men's responsiveness is close to zero, although some estimates suggest greater responsiveness among men with lower incomes.[19]

The bonus also might affect participation in different types of employment. The most obvious effect is that it might reduce informal work and increase formal work, as the payoff to reporting earnings to the tax authorities and filing taxes is increased. Data from the survey will be used to present effects on the type of employment participants engage in. Finally, through effects on income and work, the program might have effects on secondary outcomes, including criminal justice involvement, child support payments by noncustodial parents, and marriage. The earlier report documented an increase in child support payments by noncustodial parents in Year 2.[20]

Characteristics of the Sample

Table 2 presents data on the characteristics of the sample at study entry. Just under 60 percent of study participants were black, and 30 percent were Hispanic. The sample was fairly diverse in terms of gender, age, educational attainment, and recent work history. About 59 percent of the sample were male, 47 percent were older than age 35 when they enrolled, 22 percent had not obtained a high school diploma or the equivalent, and 18 percent had been incarcerated at some point in the past. In addition, about 9 percent of study participants were noncustodial parents who had an open child support case with the child support (IV-D) system and owed child support or arrears. Less than half the study participants were working at the time of study entry, and about 30 percent reported having no earnings in the prior year. Another 28 percent had worked in the past year but earned less than $6,667 (the end of the phase-in range for the Paycheck Plus bonus). Less than half (46 percent) of the participants indicated on the baseline survey that they had heard of the EITC, and 61 percent had filed a tax return in 2013.

[17]The typical program group member who worked during 2016 earned $19,521, which would lead to a bonus of $1,781, implying an increase in the effective wage of about 9 percent (given by the ratio of the bonus to earnings).

[18]Miller et al. (2017).

[19]Pencavel (1986); McClelland and Mok (2012).

[20]Miller et al. (2017).

Table 2

Sample Characteristics

Characteristic (%)	Full Sample
Male	59.0
Age	
35 or younger	53.0
Older than 35	47.0
Race/ethnicity	
Hispanic	30.0
Non-Hispanic black	57.8
Non-Hispanic white/other	12.2
Education	
High school diploma or equivalent	54.0
Some college or higher	24.2
Noncustodial parent[a]	8.6
Ever incarcerated in jail or prison	18.1
More disadvantaged men subgroup[b]	21.7
Currently working	45.2
Working full time[c]	23.8
Earnings in the past year	
$0	29.4
$1-$6,666	28.2
$6,667-$17,999	29.4
$18,000 or higher	13.0
Filed a tax return for tax year 2012	60.7
Has heard of the Earned Income Tax Credit (EITC)	45.8
Has received the EITC in the past	19.0
Sample size	5,968

SOURCES: Paycheck Plus baseline survey data; New York City Office of Child Support Services (OCSS) administrative records.

NOTES: Includes sample members randomly assigned between September 27, 2013, and February 18, 2014.

Percentages for some categories may not add up to 100 due to rounding or missing values.

[a]The measure refers to noncustodial parents who, according to OCSS records, had open child support cases with positive monthly obligation amounts or positive child support debt amounts when they enrolled in the study.

[b]The more disadvantaged men subgroup includes individuals who either were noncustodial parents at the time of random assignment or had been incarcerated at some point prior to random assignment.

[c]The measure refers to working 30 hours or more per week.

Implementation of Paycheck Plus and Levels of Bonus Receipt

Program Implementation

FBNYC operated the program with assistance from MDRC.[21] To apply for a Paycheck Plus bonus each year, participants would begin the process by filing their taxes. FBNYC offered free tax preparation at its VITA sites; participants who used FBNYC's VITA tax services could apply for the bonus at the same time. Alternatively, participants could choose to prepare their own tax returns or engage other tax preparers, and then bring a copy of their completed tax forms to an FBNYC VITA site to apply for the bonus. After participants applied for the bonus, MDRC would calculate the bonuses based on information from their federal tax returns. MDRC would then work with the New York City Office of Child Support Services to determine, for the non-custodial parents in the study, whether all or part of the bonus would be intercepted to pay down child support debt.

FBNYC would then issue bonus payments to participants, who had the option of receiving their payment by direct deposit or on a debit card that they could pick up from an FBNYC VITA site that remained open year-round and also served as a Paycheck Plus customer service office. Bonus payments typically took at least two months to process, and the Paycheck Plus bonus application procedure included a number of steps that would not be required if a similar expanded EITC were part of the tax code.[22]

Because bonus application did not occur automatically as part of tax filing, each year FBNYC and MDRC reminded participants to apply for the bonus.[23] This annual outreach included several rounds of postcards, letters, email messages, text messages, automated "robocalls," and individual phone calls to participants. Reminders were sent beginning in autumn and then intensively from January through April. After the mid-April tax deadline, additional reminders were sent to engage late tax filers and to follow up with participants whose bonus applications were incomplete. Participants could also obtain application instructions and check on the status of their bonus payments using a telephone hotline or using a website that was updated frequently.

---

[21]A more detailed description of the first two years of program implementation appears in Miller et al. (2017).

[22]For example, FBNYC required documentation that the IRS had accepted each participant's tax return, and that the key information shown on the return — earnings, adjusted gross income, refund amount, and federal earned income credit amount — matched the tax information that was submitted in the participant's bonus application. This documentation could take the form of an electronic notice from the IRS, a paper IRS statement, or a bank statement showing a federal refund deposit. Most participants who filed their taxes through FBNYC's VITA program were able to skip this step because FBNYC would receive electronic tax-return acceptance notices from the IRS, but many other participants had to collect this documentation themselves to complete their bonus applications.

[23]As part of the effort to remind participants about the program, they were offered gift cards to come into a participating VITA site during mid-2014 to hear again about the bonus. A test was embedded into this outreach effort to assess whether messages informed by behavioral science principles led to greater attendance at these meetings. The results are presented in Dechausay, Anzelone, and Reardon (2015).

During the final year of Paycheck Plus, or the 2017 tax season, FBNYC's VITA program was operated with fewer locations and shorter hours than during the first two years.[24] To help compensate for this reduction, FBNYC extended tax preparation services for Paycheck Plus participants through July, promoted a mail-in bonus application option for those who had independently filed their taxes without help from FBNYC, and continued to accept bonus applications through early November (whereas the bonus application deadline occurred in early July during the first two years of Paycheck Plus). Additional outreach efforts were made to individuals who had indicated that they intended to apply for the bonus but had failed to apply because they had difficulty gaining access to VITA and Paycheck Plus services during the regular tax season.

Eligibility and Bonus Receipt

Estimates show that most workers who are eligible for the federal EITC receive it, although take-up varies across types of families. In 2009, for example, it is estimated that 83 percent of eligible workers with two or more children received the credit, compared with 65 percent of those without children.[25] Credit receipt also varies with how much the worker stands to receive, with the lowest take-up rates for those whose earnings place them in the phase-in part of the schedule, who would earn a relatively small credit. Since credit receipt is largely automatic once someone files taxes, the lower take-up rate for this group is in part due to lower tax filing rates.

Research also finds that many low-income workers do not claim the EITC consistently, from year to year, but rather cycle in and out of eligibility as their earnings increase or decrease, or as they become unemployed or ineligible for other reasons. Looking over a 15-year period, for example, one study found that a slight majority of those with dependent children who ever received the EITC claimed the credit for only one or two years.[26] In contrast, about 20 percent of recipients claimed the credit for five or more years, suggesting that there is a small group of workers whose earnings are persistently low and who need to rely on the credit for the longer term.

Such earnings dynamics are relevant to interpreting the findings from Paycheck Plus, given that the sample consists of a fixed group of individuals recruited for the study, based on their eligibility in a single year (2013). Given the variability of work and earnings from year to year and given possible changes in family structure as well, eligibility rates are expected to fall over time for the Paycheck Plus sample regardless of any behavioral effects of the bonus. In contrast, if the program were open to newly eligible individuals each year, the overall eligibility

[24]During the third year, the number of FBNYC VITA sites was reduced from 17 to 11, and most of the remaining sites operated on a reduced schedule with a smaller staff. Paycheck Plus services in Staten Island and Queens were all but eliminated. The decision to make these changes did not reflect the needs or requirements of the Paycheck Plus program; rather, the changes were part of a broader effort by FBNYC to restructure its long-existing tax program, in a shift of organization priorities. As part of that shift, FBNYC VITA staff members gave priority to families with children and turned away many single tax filers during the busiest part of tax season. As a result, some Paycheck Plus participants were also inadvertently turned away.

[25]Jones (2014).

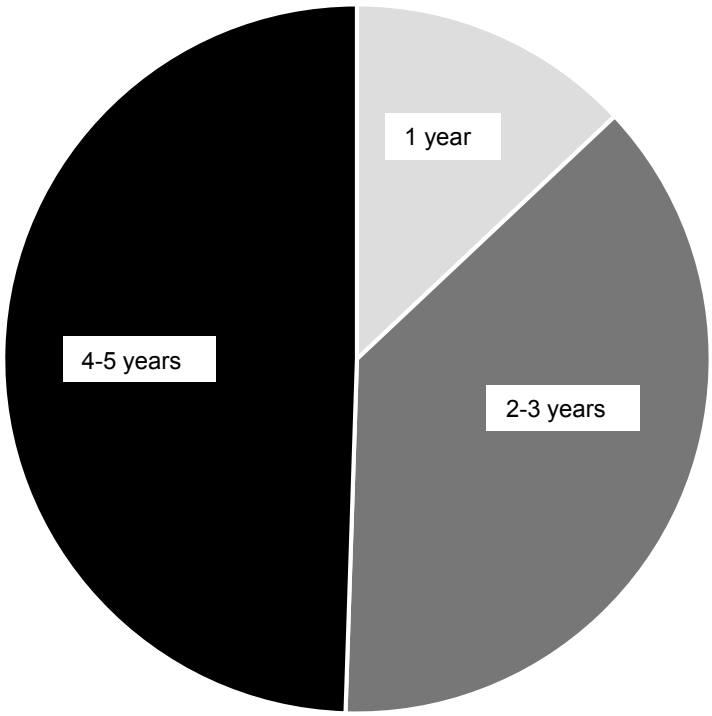
[26]Dowd and Horowitz (2011).

rate would be expected to vary with economic conditions but not to systematically rise or fall over time.

Figure 3 gives some indication of these dynamics for the control group in the study sample. Tax data were used to determine eligibility (having earnings less than $30,000 and filing without dependents) for the study sample over the five years between 2012 and 2016. Among control group members who were eligible for at least one year, 13 percent were eligible for only one year over the period, 37 percent were eligible for two or three years, and 50 percent were eligible for four or five years of the five-year period. About 10 percent of the control group were never eligible for Paycheck Plus over the five-year period.[27]

Figure 3

Number of Years Meeting Eligibility for Bonus, Among Control Group Members Meeting Criteria at Least One Year Between 2012 and 2016



SOURCES: IRS tax forms, W-2s, and 1099-MISCs.

Thus, the Paycheck Plus sample includes a large group who were eligible for nearly the entire period, although this outcome is partly by design, since the study attempted to recruit a

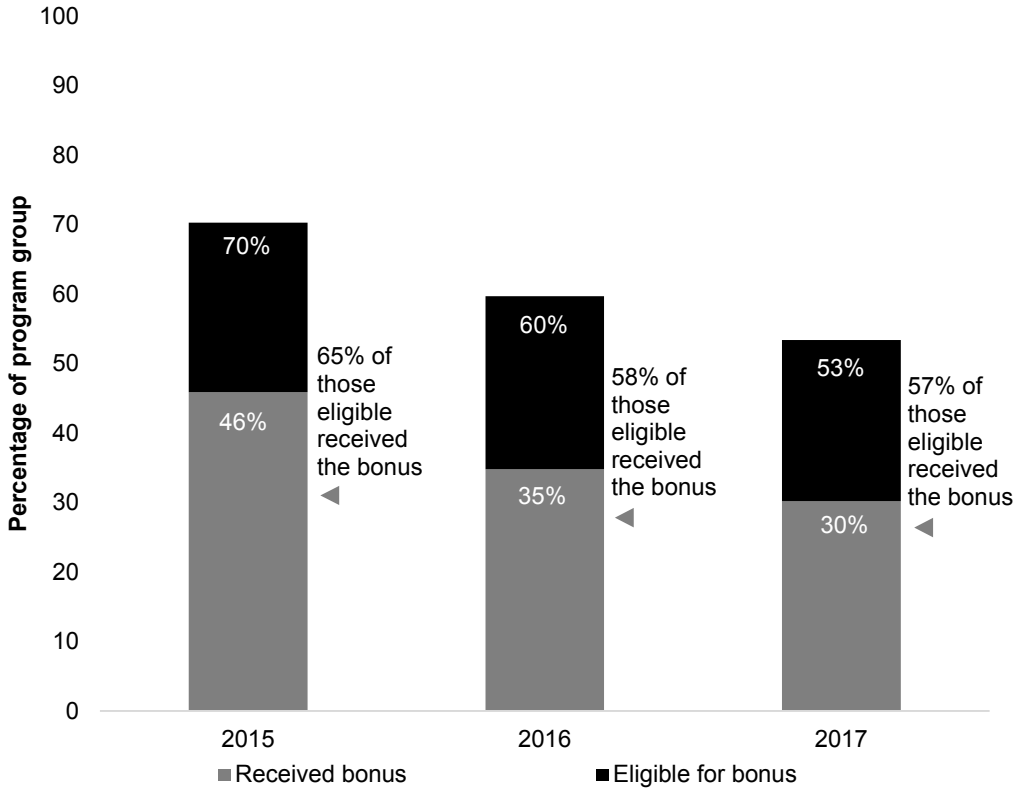
[27]Eligibility for the study was determined using individuals' self-reports that they did not claim dependent children and that they earned less than $30,000 in the prior year. Thus, the small percentage of the control group never eligible for the bonus according to the tax data reflects self-reporting errors.

large group with no earnings in the prior year. Nonetheless, the data indicate that even for this sample, a significant fraction of them would not be eligible for the credit most years.

Figure 4 presents data on eligibility and bonus receipt for the program group. An individual is defined as eligible for the bonus if he or she earned between $1 and $30,000 during the year and did not claim dependents when filing taxes. The number of eligible individuals declined over the three-year period, from 70 percent in Year 1 to 53 percent by Year 3.[28]

Figure 4

Bonus Eligibility and Bonus Receipt Among Program Group Members



SOURCES: IRS tax forms, W-2s, and 1099-MISCs; Paycheck Plus program data on bonus receipt.

NOTE: Percentage calculations account for rounding.

To receive the bonus, individuals had to file taxes and apply for it. The lighter shaded segments of the bars present bonus receipt rates. Among the full program group, bonus receipt rates fell from 46 percent in 2015 to 30 percent in 2017. However, among those eligible for the bonus, take-up rates were higher — 65 percent in 2015, 58 percent in 2016, and 57 percent in

[28]Among those who received a bonus at some point during the three-year period, 45 percent received it in all three years, 24 percent received it for only two years, and 31 percent received it for only one year.

2017. The bonus take-up rates in Paycheck Plus are roughly similar to take-up rates of the federal EITC among adults without dependent children.

Part of the reason for the less-than-full take-up among eligible individuals is that a noticeable fraction of those with eligible earnings do not file taxes. Only about 80 percent to 85 percent of eligible individuals filed taxes in a given year. (Individuals with earnings below a certain level are not legally required to file.) Take-up rates among those who were eligible and filed taxes were higher, going from 75 percent in Year 1 to 68 percent in Year 3 (not shown).

The fact that not all eligible individuals applied for and received bonuses is also related to the amount they stood to receive. As shown in Figure 5, individuals whose earnings placed them on the phase-in part of the schedule had lower take-up rates, while those on the plateau and in the initial part of the phase-out schedule had the highest take-up rates. Take-up rates were lowest among those with the lowest earnings in part because they are less likely to file taxes.

As noted earlier, it was expected that not all individuals in the program group would be eligible for the bonus in each year. Figure 6 presents additional information on the reasons for ineligibility and how the prevalence of these reasons changes over time. Most of the individuals who were not eligible did not have earnings during the year, and this number increased over the period, from 17 percent in Year 1 to 21 percent in Year 3. However, the biggest source of the decline in eligibility is an increase in the share of individuals with earnings too high to qualify (more than $30,000). By Year 3, 14 percent of the program group members were ineligible for the bonus because they earned too much, compared with only 4 percent in Year 1. Finally, about 8 percent of program group members were ineligible in 2015 because they claimed a dependent when filing taxes, and this percentage increased slightly over time. Appendix Figure A.1 presents these data for the control group, showing a similar trend over time.[29]

Table 3 presents additional data on bonus receipt. The top panel presents bonus amounts received in 2016 from program data, to match the period of the survey. Among those who received a bonus in 2016, the average bonus received was $1,380. About 17 percent received the full $2,000 and over 50 percent received between $1,000 and $1,999. The average amount received was very similar in the other two years (not shown).

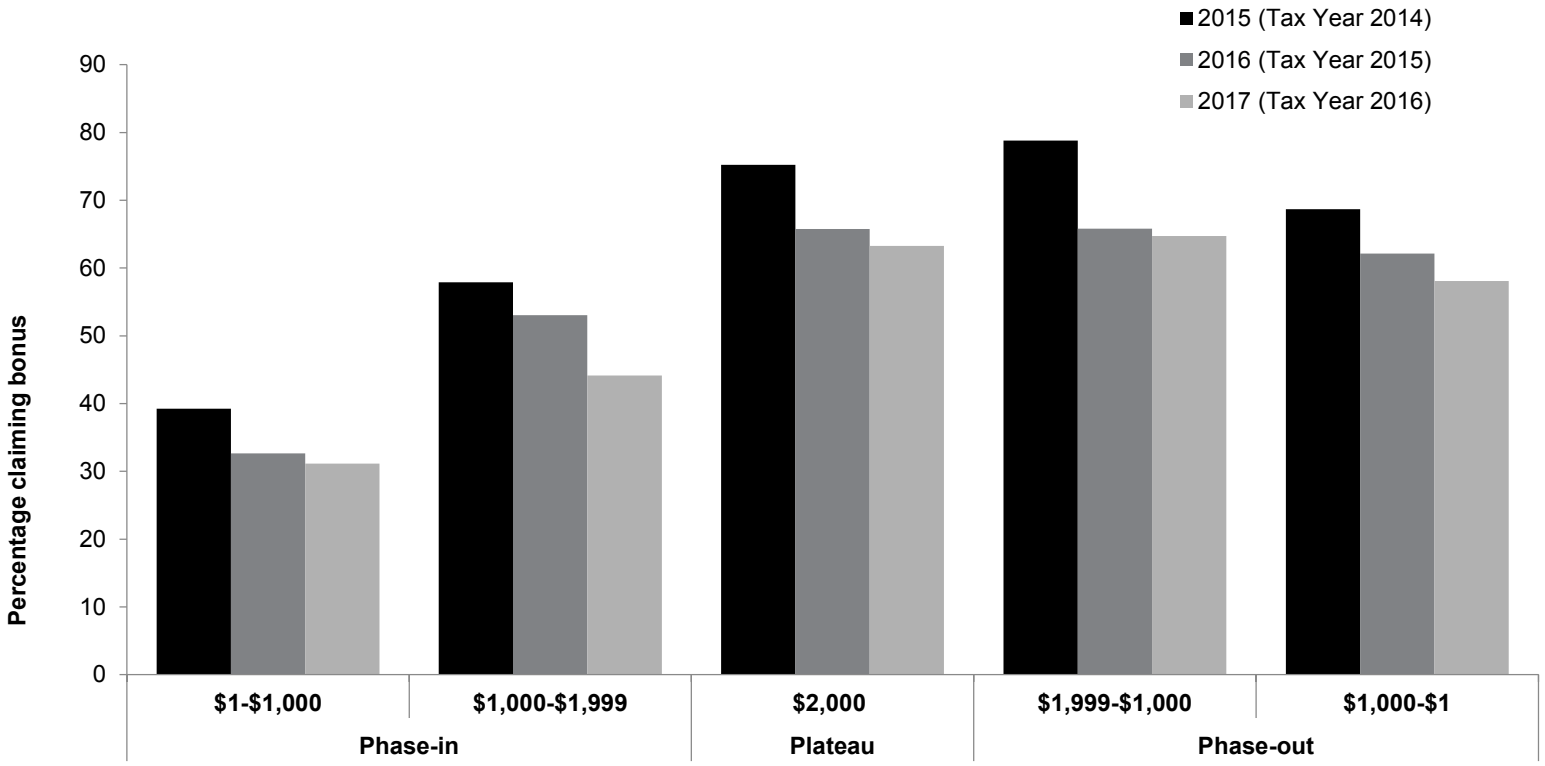
The most common uses for the bonus were to pay regular expenses and to pay off bills. Research on how EITC recipients spend their tax refunds indicates a similar increase in spending in all areas, although there are notable increases in spending on durable goods, or items such as cars, appliances, and furniture.[30] Relatively few of the Paycheck Plus recipients, by contrast, reported using the bonus for a "major purchase." Some reasons for the difference may be that the other research focused largely on families with children, who may have different

[29]As the impact analysis will show more formally, eligibility rates for the control group were slightly lower than for the program group in each year, in part because fewer of them had any earnings and more of them claimed dependents when they filed taxes.

[30]Goodman-Bacon and McGranahan (2008).

Figure 5

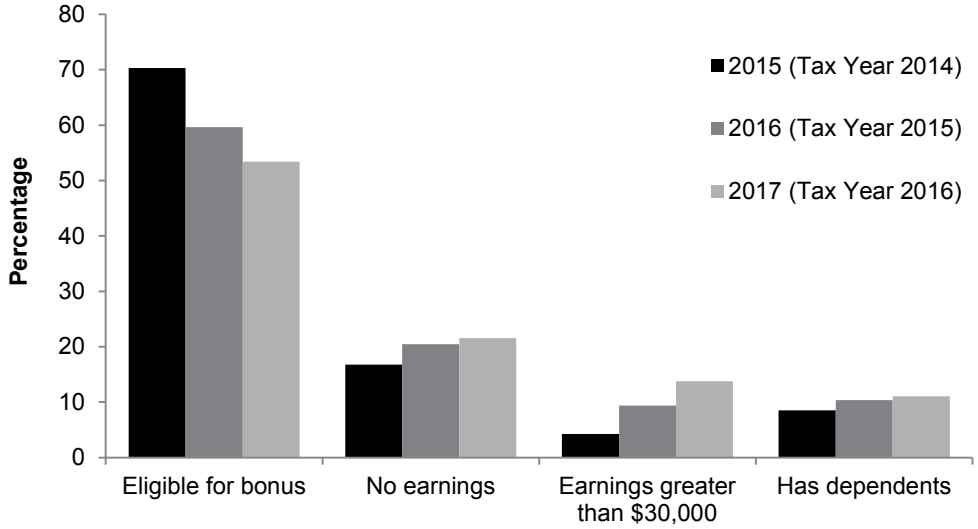
Bonus Receipt Among Eligible Individuals by Expected Bonus Amount



SOURCES: IRS tax forms, W-2s, and 1099-MISCs; Paycheck Plus program data on bonus receipt.

Figure 6

Distribution of Program Group Members by Eligibility Status



SOURCES: IRS tax forms, W-2s, and 1099-MISCs.

NOTE: Individuals were eligible for the bonus if they had earnings less than $30,000 and no dependent children.

spending behaviors, or that the receipt of the Paycheck Plus bonus, being part of a new demonstration program, was not as certain or trusted as the federal EITC. In that case, bonus recipients might not have planned on using it for a large purchase, the way that EITC recipients do.

The survey data also shed some light on why individuals did not take up the bonus. Program group members who responded to the 32-month survey were asked whether they had filed taxes and applied for the bonus during 2016. About half the respondents who did not apply for the bonus did not file taxes; about 16 percent reported that they were not eligible; and one-quarter reported a lack of interest or awareness (13 percent and 11 percent, respectively). It is often the case that individuals in a new or experimental program forget about the program over time, which is why study participants were sent repeated reminders about the bonus each tax season. Data from the survey indicate that 95 percent of respondents in the program group reported being aware of the bonus, although only one-third remembered that the maximum bonus was $2,000.

Effects on Income, Poverty, and Employment

Paycheck Plus might affect a wide range of outcomes, but its most direct effects should be on income, poverty, and work. The bonus should increase income among those who receive it. It

Table 3

Receipt and Use of Paycheck Plus Bonus

Outcome	Mean
Bonus receipt[a]	
Average 2016 bonus received, among recipients ($)	1,380
Amount received (%)	
$1-499	13.0
$500-999	12.4
$1,000-1,499	21.9
$1,500-1,999	35.9
$2,000	16.8
How bonus was used[b] **(%)**	
To help pay for regular expenses, like rent and utilities	86.7
To pay off bills	61.6
For a major purchase	7.4
For savings	25.0
For health expenses	11.2
For a few luxuries, like eating out or going to the movies	33.1
For child expenses	6.9
To help other family members or friends with their expenses	29.6
Other	3.5
Reasons for not applying for bonus[b,c] **(%)**	
Did not file taxes in 2016	47.3
Not eligible	15.8
Not interested or forgot	13.1
Was not aware he or she could apply in Year 2	11.2
Too much of a hassle or not worth it	3.1
Did taxes elsewhere or moved out of New York City	4.3
Other	5.2

SOURCES: Paycheck Plus program data on bonus receipt; Paycheck Plus 32-month survey data.

NOTES: Sample sizes may vary because of missing values.
[a]Information is from program data for bonus recipients; sample size = 2,997.
[b]Information is from survey data; sample size = 1,701. Percentages represent how bonus was used among survey respondents who received it, or reasons for not applying among respondents who did not.
[c]Categories are mutually exclusive.

could also increase employment rates by increasing the payoff to work. As noted earlier, the effects of eligibility for the bonus on average earnings are ambiguous, since the bonus, as with the federal EITC, creates different financial incentives for work at different points along the schedule, with positive incentives at lower earnings in the phase-in range and negative incentives at higher earnings in the flat part and phase-out range of the schedule (as seen in Figure 2). This section examines the program's effects on employment, earnings, income, and poverty. The earlier report documented an increase in employment in Year 2 and an increase in after-bonus earnings (net of taxes and the bonus) in both Year 1 and Year 2.

Findings from IRS Data

Table 4 presents the effects for each of the three years for which program participants were eligible for the bonus (2014, 2015, and 2016 corresponding to Year 1, Year 2, and Year 3, respectively) and for the overall three-year average of outcomes. Recall that Year 1 (or 2014) covers the year before any bonuses were received, since the first bonus paid was during the 2015 tax season. Data used for this analysis are tax records from the IRS, including information from

Table 4

Effects on Employment and Earnings

Outcome	Program Group	Control Group	Difference (Effect)	P-Value
After-bonus earnings (earnings plus credits minus taxes) ($)				
Year 2014	10,191	9,527	664 ***	0.001
Year 2015	12,350	11,669	681 **	0.012
Year 2016	13,621	13,059	561 *	0.073
3-year average	12,054	11,419	635 ***	0.006
Any earnings (%)				
Year 2014	79.7	78.8	0.9	0.338
Year 2015	76.4	73.8	2.6 ***	0.009
Year 2016	75.7	73.6	2.1 **	0.043
3-year average	77.3	75.4	1.9 **	0.020
Average earnings ($)				
Year 2014	10,219	10,186	33	0.893
Year 2015	13,153	12,925	228	0.499
Year 2016	14,777	14,569	209	0.582
3-year average	12,716	12,560	157	0.581
Sample size (total = 5,968)	2,997	2,971		

SOURCES: IRS tax forms, W-2s, and 1099-MISCs.

NOTES: Earnings refers to wages plus self-employment income.
Rounding may cause slight discrepancies in sums and differences.
A two-tailed t-test was applied to differences between the outcomes of the program and control groups. Statistical significance levels are indicated as: *** = 1 percent; ** = 5 percent; * = 10 percent.
Estimates were regression-adjusted using ordinary least squares, controlling for pre-random assignment characteristics of sample members.
All dollar amounts are adjusted for inflation using the Consumer Price Index Research Series (CPI-U-RS) and shown in constant 2016 dollars.

tax forms for all tax filers and from W-2 and 1099 forms available for both filers and nonfilers. The measure of earnings presented in the table is the sum of wage earnings and self-employment income and is obtained for all sample members regardless of whether they filed taxes.[31]

The top panel of the table presents program effects on one measure of income, defined as total earnings in a given tax year plus any tax credits received from filing for that tax year (including the Paycheck Plus bonus) and minus any taxes paid. Because the program group received the Paycheck Plus bonus, their taxes are much lower than the control group's taxes (or put differently, the tax credits they received are much higher). On average, the program group had after-bonus earnings of $12,350 in 2015, for example, compared with $11,669 for the control group, for a statistically significant increase of $681, or a 5.8 percent increase.[32] The increase in after-bonus earnings for 2016 was $561, for a 4.3 percent increase. Over the full three years of Paycheck Plus, the program group experienced an increase of $635 (or 5.6 percent) in average annual after-bonus earnings relative to the control group. Because these increases are averages calculated over the full sample, including those who never took up the bonus, the effects on after-bonus earnings diminish in size over time, as take-up of the bonus fell. Thus, the effects for those who actually received a bonus are larger than those shown in the table.

The next several rows present data on employment, or whether an individual had any earnings in a given year, from wages or self-employment income. There has been substantial observational research on the labor market effects of the EITC, most of which has focused on single mothers and married couples with dependent children, since the EITC for childless adults is so small.[33] In general, this research finds that increases in the generosity of the EITC have led to fairly sizable increases in employment rates for single mothers.[34]

Data for the control group show that over the three-year period, about 75 percent of individuals worked in a typical year, although employment rates fell somewhat over time from 79 percent in 2014 to 74 percent in 2016. Paycheck Plus increased employment rates by over 2 percentage points in both Year 2 and Year 3 and by 1.9 percentage points on average over the full three-year period. Although the three-year period results present a summary of the impacts over the full program period, the effects in the later years seem more likely to represent the ongoing effects of a more permanent increase in the generosity of the EITC for childless adults along the lines of Paycheck Plus. It was expected that the program might take time to have effects, as participants learned about it and began to trust that the bonus was legitimate, and as learning occurred

[31]After-bonus earnings and average earnings are adjusted for inflation using the Consumer Price Index research series (CPI-U-RS) and shown in constant 2016 dollars in all years.

[32]As indicated by the asterisks, this difference is statistically significant at the 1 percent level, meaning there is less than a 1 percent chance that a difference this large could have been observed if the program had no true effect. The p-value in the right-hand column indicates that there is actually only a 0.6 percent probability (or 0.006) that a difference this large could have been observed by chance.

[33]Eissa and Liebman (1996); Meyer and Rosenbaum (2001); Eissa and Hoynes (2006); Chetty and Saez (2013); Chetty, Friedman, and Saez (2013).

[34]Meyer and Rosenbaum (2001).

among VITA tax preparers. Other research finds, for example, that expansions to the EITC for single parents took one or two years to generate employment effects.[35]

The final panel of the table presents effects on earnings. Average earnings for both groups (including zeroes for those not working) increased over time, from about $10,200 in 2014 to about $14,600 in 2016. Average earnings among those who worked in Year 3 were just under $20,000 (not shown).

Average earnings are somewhat higher for the program group than the control group in Years 2 and 3, but the differences are not statistically significant. The observed proportional increase in earnings in Years 2 and 3 of almost 2 percent is not that different from and quite consistent with the increases in employment of about 3 percent. However, a difference in earnings of that size is typically less likely than a difference in employment to reach statistical significance, given the greater variability of earnings. In other words, there is substantial statistical noise in measures of annual earnings compared with measures of employment. Thus, it is not possible to conclude that earnings increased because of the program. However, making another comparison, the size of the effect on earnings (of about 1.3 percent over the full three-year period) is not statistically different from the size of the effect on employment (1.9 percentage points, or about a 2.5 percent gain). Thus, the differences in earnings between the program and control groups are consistent with the observed effects on employment.

Recent research on the EITC has attempted to estimate effects on earnings, or whether individuals change their level of work in response to the incentives created by the phase-in and phase-out parts of the schedule. Some effects have been identified: positive effects on the phase-in part of the schedule and negative effects on the phase-out part (especially for the self-employed), although the effects on earnings (the intensive margin of earnings levels and hours worked in a given year) are much smaller than estimated effects on employment rates (the extensive margin of work versus no work in a given year).[36] The small response in the case of earnings may be partly due to the difficulty many employees face in precisely adjusting their work schedules to change hours and earnings, but it may also arise from most recipients, and some tax preparers, not fully understanding the more detailed structure of the credit, including the phase-in and phase-out rates.[37] Instead, the large tax refund associated with the EITC is its most salient feature, and many recipients may view it as increasing the returns to work since they understand that they will receive a refund at tax time if they work.[38]

The earlier report tested for these effects using earnings in Year 2 and found no evidence of this type of earnings reduction: That is, the findings showed an increase in the number of workers with earnings in the plateau region of the bonus, roughly matching the increase in

[35]Eissa and Liebman (1996).

[36]Chetty, Friedman, and Saez (2013).

[37]Eissa and Liebman (1996); Chetty and Saez (2013); Chetty, Friedman, and Saez (2013); Bhargava and Manoli (2015).

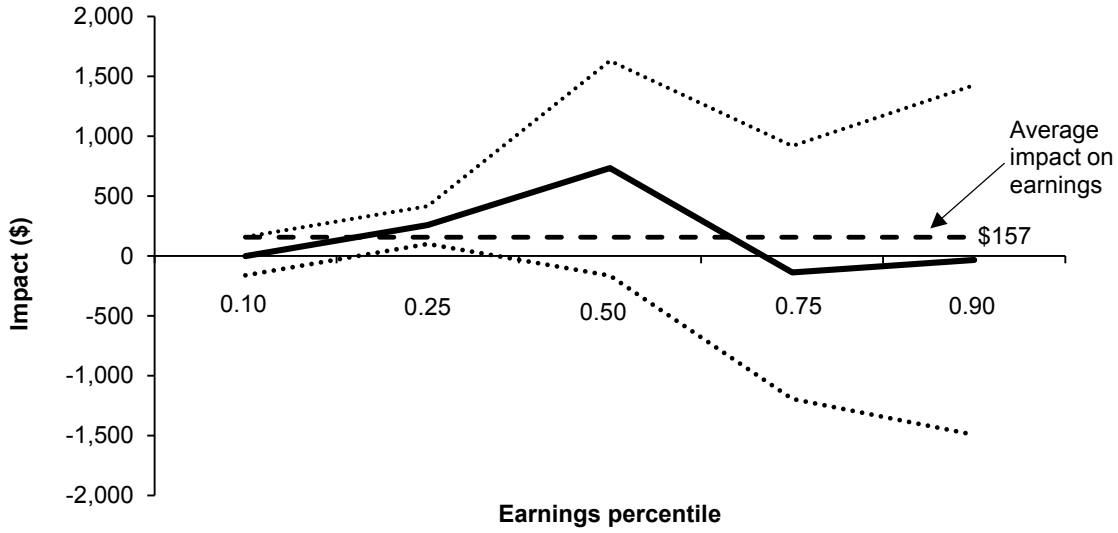
[38]Sykes, Križ, Edin, and Halpern-Meekin (2015).

employment, but no difference between the program and control groups in the percentage with earnings either in the phase-out portion of the schedule or with earnings beyond the phase-out portion (more than $30,000). An analysis using earnings in Year 3 found similar results.

Another take on the issue is to examine how the program affected earnings at various percentiles of the earnings distribution.[39] Quantile regression goes beyond the average effect typically presented in evaluations to examine how the program affected the entire distribution of an outcome. Figure 7 presents estimates from a quantile regression of effects on earnings, from the tax records, over the three-year period. The average effect on earnings, of $157, from Table 4, is presented for comparison. Effects are presented for the 10th, 25th, 50th, 75th and 90th percentiles. The dark line represents estimated effects, and the dashed lines represent 90 percent confidence intervals around those estimates. The confidence interval illustrates the uncertainty, or margin of error, around an estimate. If that interval includes the value 0, then the estimate is not statistically different from zero.

Figure 7

Quantile Effects on Earnings, Years 1-3



SOURCES: IRS tax forms, W-2s, and 1099-MISCs; Paycheck Plus program data on bonus receipt.

NOTES: The thick solid line presents the impact of Paycheck Plus on earnings at each point in the distribution. The dotted lines show the confidence interval around that estimate.

An estimate is not statistically significant at the 10 percent level if the confidence interval includes the value of 0.

[39]Bitler, Gelbach, and Hoynes (2006).

The figure shows that the effects on the distribution do mask some variation around the average effect, with more positive effects at the lower end of the distribution. For example, Paycheck Plus increased earnings at the 25th percentile by $258, meaning that the level of earnings at that percentile for the program group was $258 above that for the control group — a statistically significant effect. The difference at the 50th percentile is $733, but this difference just misses statistical significance. The pattern of findings suggests the potential for a reduction in earnings at the top, although there is substantial variation around those estimates, and the negative estimated earnings effects at the 75th and 90th percentiles are not statistically significant. Appendix Figure A.2 presents effects for after-bonus earnings, with increases throughout the middle of the distribution.

Findings from State Records and the Survey

Data on employment and earnings are also available from unemployment insurance (UI) records for New York State and from the 32-month survey of the participants. Table 5 presents effects on work and earnings from the UI data. In general, the levels of employment and earnings are quite similar to those from the tax data. Employment rates from the UI data are somewhat lower, reflecting the fact that these data do not capture self-employment income, but average

Table 5

Effects on Employment and Earnings Covered by Unemployment Insurance

Outcome	Program Group	Control Group	Difference (Effect)	P-Value
Ever employed (%)				
Year 1	74.3	74.2	0.0	0.968
Year 2	70.2	67.3	3.0***	0.006
Year 3	68.3	65.6	2.7**	0.016
3-year average	70.9	69.0	1.9**	0.026
Yearly earnings ($)				
Year 1	9,507	9,328	179	0.439
Year 2	11,714	11,433	280	0.385
Year 3	13,179	12,885	294	0.437
3-year average	11,467	11,216	251	0.360
Sample size (total = 5,968)	2,997	2,971		

SOURCE: New York State unemployment insurance wage records.

NOTES: Rounding may cause slight discrepancies in sums and differences.
Sample sizes may vary because of missing values.
Statistical significance levels are indicated as: *** = 1 percent; ** = 5 percent; * = 10 percent.
All dollar amounts are adjusted for inflation using the Consumer Price Index Research Series (CPI-U-RS) and shown in constant 2016 dollars.

earnings are very similar. And effects on employment rates and earnings are similar. The UI data, for example, show a statistically significant increase in employment in Year 3 of 2.7 percentage points, and a difference in earnings in that year of $294, which is not statistically significant. The three-year earnings impact in the UI data is $251, which is not statistically significant, but it represents a proportional increase in earnings (2.2 percent) similar to the increase observed in employment (an impact of 1.9 percentage points, representing a 2.8 percent increase). The survey data also show an increase in work over the year before the survey, but no difference in hours worked, wage rates, or other job characteristics (see Appendix Table C.1). The tax data, UI data, and survey data all consistently show the program having similar modest positive impacts on employment.

Table 6 presents effects on income, poverty, and material hardship, as measured from the survey administered during the middle of 2016, about 32 months after program enrollment. Income data are based on a series of questions that ask respondents about all sources of household income the past month. The income measures reported in Table 6 are annualized for the analysis and include any Paycheck Plus bonus received by members of the program group. Average household income was $21,527 for the control group. About $13,500 of this income was from the participant's earnings (not shown), which matches fairly well with the IRS tax records. Another $1,000 was the participant's other income, which could include public benefits, such as SNAP, and unemployment insurance or other income. The remaining $8,000 includes income from other household members.

Household income is slightly lower for individuals in the program group, although the difference of $223 is not statistically significant. Individuals in the program group were somewhat less likely to report living with another adult (see Appendix Table C.3). For this reason, a measure of income per household member was also computed, called income per equivalent member.[40] Accounting for differences in household size explains most of the reduction in total income. Income per equivalent for program group members is only $49 (or 0.3 percent) less than that for the control group, a difference that is not statistically distinguishable from zero.

The next several rows present effects on various measures of poverty. About 50 percent of the study sample had income below the federal poverty line, and the program did not affect that rate. For reference, the federal poverty level for a single individual is about $12,700. However, Paycheck Plus did reduce the number of individuals in severe poverty, or with income below 50 percent of the poverty line. The program seems to have moved most of them from severe poverty into the group with income between 50 percent and 100 percent of the poverty line.[41]

[40]The per equivalent member measure is different from a per capita measure because it accounts for the fact that adding another individual to a one-person household, for example, does not double expenses. The equivalence scales used were those implicit in the weighted-average federal poverty thresholds.

[41]The program's effect of reducing severe poverty is different from the effect found for the EITC for families with children; research suggests the EITC moves families from just under the poverty line to just above it (Hoynes and Patel, 2017). The difference is likely due to the size and structure of the Paycheck Plus bonus and

Table 6

Effects on Income and Poverty

Outcome	Program Group	Control Group	Difference (Effect)	P-Value
Income ($)				
Total household income (including bonus)	21,303	21,527	-223	0.753
Income per equivalent member (including bonus)[a]	16,210	16,259	-49	0.924
Poverty (%)				
Income below poverty line	49.4	50.0	-0.6	0.730
Income below 50% of poverty line	29.2	32.6	-3.4 **	0.032
Income 50-100% of poverty line	20.2	17.4	2.8 **	0.042
Income 100-150% of poverty line	15.2	14.9	0.3	0.804
Income 150-200% of poverty line	12.7	11.3	1.3	0.242
Income above 200% of poverty line	22.7	23.7	-1.1	0.460
Material hardship (%)				
Had at least one hardship in the past 12 months	50.8	47.7	3.1 *	0.078
Sometimes or often did not have enough food to eat in the past month	23.9	23.0	0.9	0.566
Sample size (total = 3,289)	1,701	1,588		

SOURCES: Paycheck Plus 32-month survey data.

NOTES: Rounding may cause slight discrepancies in sums and differences.
A two-tailed t-test was applied to differences between the outcomes of the program and control groups. Statistical significance levels are indicated as: *** = 1 percent; ** = 5 percent; * = 10 percent.
Estimates were regression-adjusted using ordinary least squares, controlling for pre-random assignment characteristics of sample members.
[a]Income per equivalent member is a measure of income per household member using the equivalence scales implicit in the weighted-average federal poverty thresholds.

There are few effects at higher thresholds. The lack of impact on household income can be explained by this pattern of effects, where even minor reductions at the top end (income above 200 percent of the poverty line) can offset increases at the bottom, for no change in the average.

The final rows of the table present effects on two measures of material hardship, taken from the survey. Nearly half the survey respondents reported experiencing one of several hardships during the prior year (such as being evicted, not paying full rent, having the phone or utilities

its relation to the poverty line for a single individual (of $12,700). The plateau region of the bonus, for example, starts at about 50 percent of the poverty line. In addition, most of the bonus's effects on work and earnings were concentrated at the lower end of the earnings distribution. Although higher earners claimed the bonus at higher rates (Figure 5), either the amount received ($1,400 on average) was not enough to push them above the poverty line or their earnings already placed them above it.

turned off, or not being able to buy needed food or medicine). The program group, surprisingly, was slightly more likely to experience a hardship than the control group, by 3.1 percentage points. Further analysis (not shown) indicates that the statistically significant increases were in the areas of "not paying full rent" and "having the phone or utilities cut off." Although this effect may be related to the effect mentioned earlier — that individuals in the program group were somewhat less likely to live with another adult — it is difficult to reconcile this finding with the reduction in severe poverty. Finally, the program did not have an effect on food security. Nearly one in four respondents reported being food insecure at some point in the month before the survey.

Effects on Other Outcomes

Although income, poverty, and work are most directly affected by Paycheck Plus, the program could affect other outcomes — in some cases, through effects on these primary outcomes. The relatively modest increases in income and work, however, suggest that any secondary effects of the program are likely to be small. This section presents effects in two additional areas. In the first domain, tax filing, the outcomes should be directly affected by the program. In the second domain, physical and mental health, any effects of the program should come through its effects on work and income. Effects on additional secondary outcomes are presented in Appendix Tables C.2 through C.4.

Table 7 presents impacts on several tax filing outcomes. First, Paycheck Plus led to an increase in the number of participants who filed taxes in all three years. In 2017 (covering earnings for 2016), for example, 62 percent of the control group filed taxes, and the program led to an increase in filing of almost 6 percentage points. Filing rates fell a bit each year over the period, matching the decline in employment rates shown in Table 4, but the program impact on tax filing rates remained steady at around 5 percentage points in all three years.

The program also led to a change in how individuals prepared their taxes. Low-income workers without dependent children typically do not file using VITA sites, as evidenced by the low rate for the control group — only 12 percent filed taxes using a VITA site in 2017. Not surprisingly, the program led to a large increase in the use of VITA sites, of about 26 percentage points in Year 1, 21 percentage points in Year 2, and 17 percentage points in Year 3. As a result, the program reduced the use of paid preparers (not shown). Filing at one of FBNYC's VITA sites was not a requirement for bonus receipt, although it was strongly encouraged. The increase in tax filing at VITA sites undoubtedly reduced the monetary cost of tax preparation for the program group, although possibly not the time cost if wait times were longer. A recent survey found that the cost of using paid preparers among EITC recipients can be up to $400.[42]

The program also increased receipt of the federal EITC in all three years, by 3.9 percentage points in 2015, 2.7 percentage points in 2016, and 2.5 percentage points in 2017. The

[42]Wu and Hernandez (2016).

Table 7

Effects on Tax Filing Outcomes

Outcome (%)	Program Group	Control Group	Difference (Effect)	P-Value
Filed taxes				
Year 2015	73.7	68.7	5.0 ***	0.000
Year 2016	69.9	65.3	4.6 ***	0.000
Year 2017	67.0	61.6	5.5 ***	0.000
Filed taxes at a VITA site				
Year 2015	45.9	20.0	25.9 ***	0.000
Year 2016	37.2	16.2	20.9 ***	0.000
Year 2017	28.7	11.9	16.7 ***	0.000
Received the EITC				
Year 2015	38.7	34.8	3.9 ***	0.001
Year 2016	32.8	30.1	2.7 **	0.021
Year 2017	29.5	27.0	2.5 **	0.027
Sample size (total = 5,968)	2,997	2,971		

SOURCES: IRS tax forms, W-2s, and 1099-MISCs.

NOTES: VITA = Volunteer Income Tax Assistance; EITC = Earned Income Tax Credit.
Rounding may cause slight discrepancies in sums and differences.
A two-tailed t-test was applied to differences between the outcomes of the program and control groups. Statistical significance levels are indicated as: *** = 1 percent; ** = 5 percent; * = 10 percent.
Estimates were regression-adjusted using ordinary least squares, controlling for pre-random assignment characteristics of sample members.

increase in EITC receipt is most likely due to the increase in the rate of tax filing, indicating that the program increased tax filing rates among those with relatively low incomes. Recall that workers without dependent children lose eligibility for the federal EITC once their earnings are above $15,000. Note also that EITC receipt rates fell over time, from 35 percent for the control group in Year 1 to 27 percent by Year 3, due to a decline in tax filing rates but also to a drop in the number of tax filers who remained eligible for the federal credit.

Turning to the second domain, the relationship between income and health has been well documented. Low income is associated with higher mortality, lower self-rated health, higher rates of disease, fewer positive health behaviors, and higher stress.[43] Particularly relevant to Paycheck Plus, recent nonexperimental research finds that increased income from the EITC improved self-

[43]Case, Lubotsky, and Paxson (2002); Muennig, Sohler, and Mahato (2007); House, Kessler, and Herzog (1990); Chetty et al. (2016).

reported physical and mental health among single mothers and reduced stress.[44] In that study, effects on stress were found from self-reported data but also from biomarker data obtained from medical exams, which collected information from physical exams and blood and urine samples.[45] And although, as noted above, any secondary effects of Paycheck Plus are likely to be small given the modest changes in income and work, the lump sum nature of the bonus might directly affect mental health. Receiving a large tax refund at one time, for example, might reduce stress or anxiety by allowing an individual to pay off debts or make other purchases that would not be possible otherwise.

The Paycheck Plus survey asked respondents a series of questions about physical health, including overall health, problems with mobility or daily activities, and weight and height. Subjective well-being was captured through a frequently used and well-validated question about happiness, and mental health problems were assessed through a series of questions designed to assess risk for depression or anxiety. In Table 8, the findings show that Paycheck Plus did not affect self-rated health (nor did it affect other physical health measures not reported in the table), but it did reduce the percentage of respondents who were at risk for depression or anxiety. This outcome is derived from a six-question scale (the K6 or Kessler 6) that has been validated and used in numerous surveys and is designed to measure psychological distress.[46] Respondents are defined as "at risk" if their scale scores are above a certain cutoff value. About 41 percent of the control group was at risk for depression or anxiety, compared with 38 percent of the program group, for a statistically significant reduction of 3.1 percentage points. The findings suggest that the program may have led to reductions in extreme mental distress, similar to its impact on reducing extreme poverty.

Paycheck Plus also affected self-rated happiness, reducing the percentage of respondents who reported being "very happy" and increasing the percentage who are "pretty happy." The effects on happiness do not align neatly with effects on depression and anxiety, suggesting that both sets of results should be interpreted with some caution. The findings on subjective well-being and mental health warrant further exploration.[47]

Effects of the Employment Referral

As noted above, an additional randomized controlled trial was embedded in the larger study to test the effects of offering information about and referrals to local employment services to program group members eligible for the Paycheck Plus bonus. The employment referral test was

[44]Evans and Garthwaite (2014).

[45]In particular, Evans and Garthwaite found a reduction in biomarkers associated with stress, including inflammation and high blood pressure.

[46]Kessler et al. (2002).

[47]The demonstration in Atlanta will administer a similar survey to the study sample, allowing for another estimate of the program's effects on mental health and subjective well-being. That study will also collect biomarker data as a source of information on physical and mental health.

Table 8

Effects on Physical and Mental Health

Outcome (%)	Program Group	Control Group	Difference (Effect)	P-Value
Health				
Fair or poor self-rated health	21.6	21.7	-0.1	0.952
Has depression or anxiety[a]	38.1	41.2	-3.1*	0.073
Self-reported happiness				
Very happy	23.1	25.9	-2.8*	0.062
Pretty happy	51.8	49.3	2.5	0.151
Not too happy	25.2	24.9	0.3	0.836
Sample size (total = 3,289)	1,701	1,588		

SOURCE: Paycheck Plus 32-month survey data.

NOTES: Percentages for some categories may not add up due to rounding or missing values.
Sample sizes may vary because of missing values.
A two-tailed t-test was applied to differences between the outcomes of the program and control groups. Statistical significance levels are indicated as: *** = 1 percent; ** = 5 percent; * = 10 percent.
Estimates were regression-adjusted using ordinary least squares, controlling for pre-random assignment characteristics of sample members.
[a]Based on the Composite International Diagnostic Interview, Short Form; Kessler et al. (2002).

added to better simulate how local nonprofits might respond to more generous work incentives for low-income individuals without dependent children if the federal EITC were expanded in a manner similar to Paycheck Plus. To target the referral to those more likely to need services, the study focused on program group members who earned less than $10,000 in the year before study entry. Among this group, half were randomly selected to receive this additional information. (More detail about the services is presented in Appendix D.) About half the employment referral group members attended an in-person meeting to learn about employment services in their area and were referred to the nearest American Job Center (or Workforce1 Career Center, as they are called in New York City). They also received a follow-up call, to encourage them to visit the center if they had not done so already.[48] The remaining half of the employment referral group received this information only via mailings.

The results of this embedded test are presented in Table 9. The table presents three sets of impacts. The first column presents the employment and earnings effects of the bonus plus the referral services compared with no bonus (that is, comparing the employment referral group with

[48]Staff members were able to conduct follow-up calls with over 80 percent of these individuals and found that one-quarter of those they contacted were working and one-quarter had visited a Workforce1 Career Center. The others were encouraged again to visit a nearby Workforce1 Center.

Table 9

Effects of Employment Referral Services, Among Program Group Members Who Earned Less Than $10,000 in the Year Before Study Entry

Outcome	(1) Impact of Bonus Plus Referral Versus Control Condition	(2) Impact of Bonus Alone Versus Control Condition	(3) Added Impact of Referral (1) - (2)
Any earnings (%)			
Year 2014	1.8	0.2	1.6
Year 2015	4.4 ***	1.9	2.5
Year 2016	3.4 **	1.6	1.8
Average earnings ($)			
Year 2014	183	229	-47
Year 2015	540	510	30
Year 2016	427	259	168
Sample size	3,207	3,218	

SOURCES: IRS tax forms, W-2s, and 1099-MISCs.

NOTES: Earnings refers to wages plus self-employment income.

A two-tailed t-test was applied to differences between the outcomes of the program and control groups. Statistical significance levels are indicated as: *** = 1 percent; ** = 5 percent; * = 10 percent.

Estimates were regression-adjusted using ordinary least squares, controlling for pre-random assignment characteristics of sample members.

All dollar amounts are adjusted for inflation using the Consumer Price Index Research Series (CPI-U-RS) and shown in constant 2016 dollars.

the subset of the control group who earned less than $10,000 in the year before study entry). The second column presents the effects of the bonus alone (the nonreferral group versus the subset of the control group). The final column presents the effect of adding the referral to the bonus (calculated by comparing the referral group with the nonreferral group, or by taking the difference between the impacts shown in columns 1 and 2). Note that this "added effect" is not the effect of the referral by itself, since the referral may be made more salient and effective in the presence of the expanded credit.

The findings show that the effects of adding the referral information to the bonus (column 1) are larger than the effects of the bonus alone (column 2). The effect of the bonus plus referral on employment rates (any earnings) in Year 3, for example, is a statistically significant 3.4 percentage points, compared with an insignificant difference of 1.6 percentage points for the bonus alone. However, the difference in these two effects, shown in column 3, is not statistically significant. Although the lack of statistical significance may be due to small sample sizes for each test, it is not possible to conclude that the added services led to larger effects.

Many community-based organizations already offer employment services and referrals to low-income adults, and this effort is often made in conjunction with EITC outreach campaigns.

Two such organizations in New York, for example, include Urban Upbound and the Bedford Stuyvesant Restoration Corporation, both of which provide financial counseling, free tax preparation, and employment and other services to low-income residents. Part of their goal is to increase access to available benefits, including the EITC.

It is easy to imagine that a more generous EITC for adults without dependent children would lead to more referrals and outreach directed to such individuals, suggesting that the effects with the referral added may better approximate what would happen if the federal EITC were expanded for this group.[49] In any case, the pattern of findings suggests that accessible workforce and training services for low-income workers could strengthen the effects of policies that make work pay, and possibly vice versa — that employment services would be more effective when there is an added incentive to work.

Effects for Subgroups

This section presents program effects for subgroups in three key areas, based on characteristics at study entry: more disadvantaged men (defined as noncustodial fathers who had an open child support case with the child support [IV-D] system and owed child support or arrears, or formerly incarcerated men) compared with all other men; women compared with men; and participants grouped by earnings in the year before the study: those with no earnings, low earnings, or higher earnings.

Past research guided the choice to focus on these three subgroups. Existing evidence tends to find larger work responses to wages for women than for men, for example, and the Paycheck Plus bonus schedule generates different work incentives for those with lower versus higher earnings potential. Noncustodial fathers and formerly incarcerated men face unique challenges in the labor market. Many men with prior involvement with the criminal justice system, for example, have low education levels and limited work experience. And employers have demonstrated a reluctance to hire individuals with criminal records. Certain child support policies have also reduced the perceived payoff to work for men who are noncustodial parents. Child support orders are often not adjusted downward during a period of unemployment, for example, leading to the accumulation of debt, which may discourage these fathers from working in the formal labor market, where earnings might be withheld to pay support. These issues suggest that Paycheck Plus might potentially have different effects for these men relative to other low-income men.

The earlier report presented effects separately for noncustodial parents and for the formerly incarcerated group, but given that the findings were similar for the two groups, they were

[49] A separate analysis suggests that the overall effects of the program on employment rates without the referral would have been 1.9 percentage points in Year 2 and 1.3 percentage points in Year 3, compared with 2.6 percentage points and 2.1 percentage points, respectively (from Table 4). In contrast, if the entire low-earnings group had been offered the referral, rather than just half of the group, overall effects would have been 3.5 percentage points in Year 2 and 2.5 percentage points in Year 3.

combined for this report to provide the more precise estimates afforded by a larger sample.[50] Separate effects for the noncustodial parents and formerly incarcerated groups are presented in Appendix Tables A.4 and A.5. The earlier report also presented effects by age, comparing effects for those age 35 or younger with effects for those older than 35. Findings by age group are shown in Appendix Table A.3.[51]

Bonus Receipt

Figure 8 presents bonus receipt rates for each of the subgroups. Bonus receipt fell over time for all the groups, but the differences in receipt rates apparent in the early years held up throughout the program. For example, women were more likely to receive the bonus than men in all years; in Year 3, 38 percent of women received a bonus, compared with 25 percent of men. Take-up is also higher among those who entered the program with higher earnings and lowest for those with no earnings in the year before study entry. Take-up rates are especially low in Year 3 for more disadvantaged men and for those with no earnings in the year before study entry, at 17 percent and 15 percent, respectively. Further analysis (not shown) indicates that take-up rates are low for these groups because they are less likely to be eligible (have eligible earnings), but also because they are less likely to file taxes even if eligible.

Effects on Employment and Earnings

Table 10 presents Paycheck Plus program effects for more disadvantaged men versus other men. Effects on work and earnings are significantly larger in Year 3 for the more disadvantaged group. For example, the program increased employment rates in Year 3 by 5.8 percentage points (or by 10 percent) for the more disadvantaged group, compared with an insignificant difference of -1.3 percentage points for all other men, and the difference between impacts is statistically significant, as indicated by the daggers in the rightmost column. Similarly, the increase in average earnings for the more disadvantaged group, of $1,205, is quite large (representing almost a 13 percent increase) and just misses statistical significance at the 10 percent level. Recall that Year 1 covers 2014, before any bonus was paid out, meaning that Years 2 and 3 are better estimates of the program's longer-run effects. Appendix Tables A.4 and A.5 present effects separately for noncustodial parents and previously incarcerated men, showing that the employment effects were very similar in Year 3 for both groups, although the program's effects on earnings were much larger for noncustodial parents.

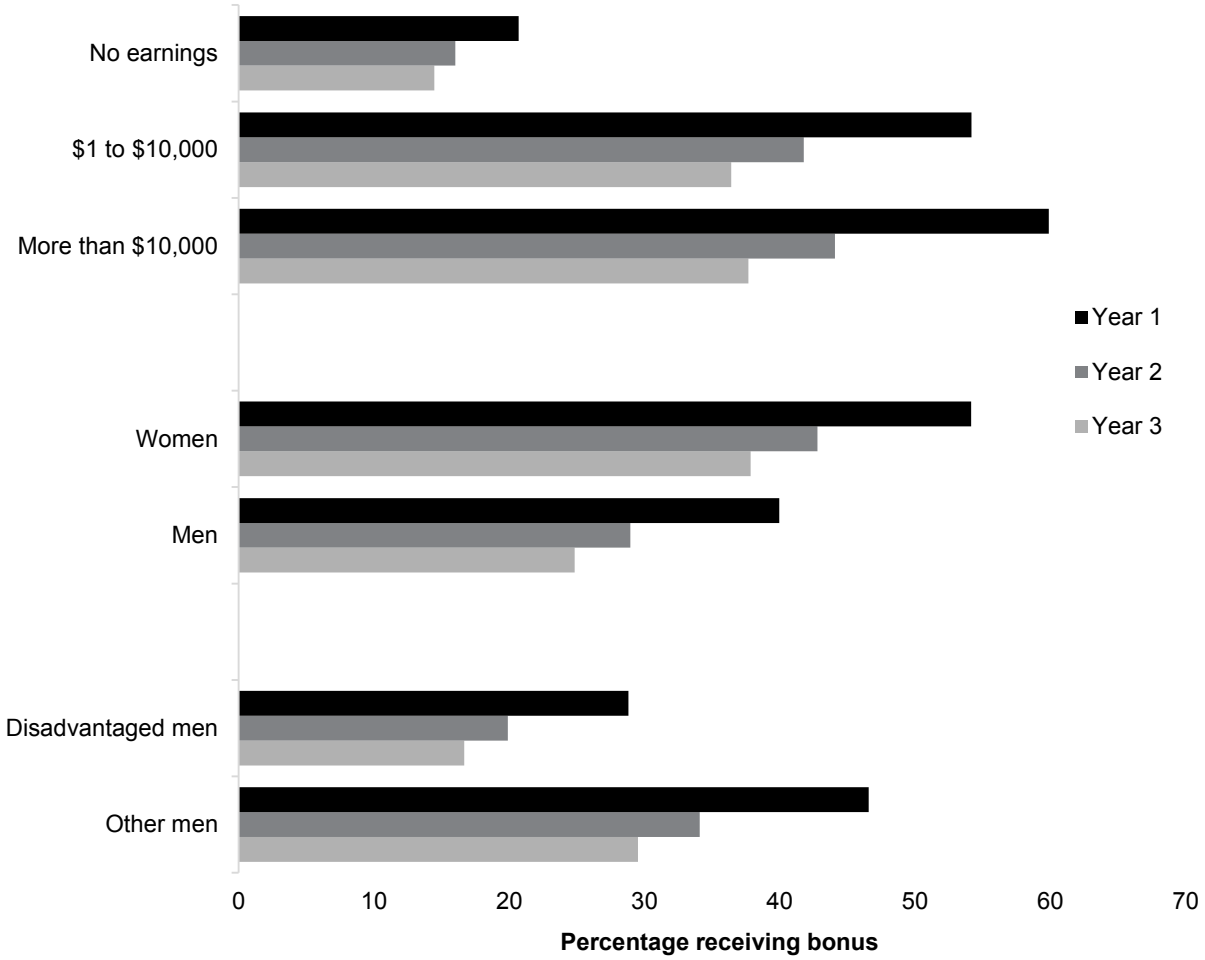
Paycheck Plus led to a sizable increase in household income for the more disadvantaged group and a larger reduction in poverty and severe poverty, and these effects on poverty were significantly different from the effects for other men. The differences in effects on work and

[50]There is minor overlap between the two groups. About 11 percent of disadvantaged men were both noncustodial parents and formerly incarcerated, 63 percent were just formerly incarcerated, and 26 percent were just noncustodial parents. See Appendix Table A.2 for baseline characteristics for each of the subgroups.

[51]The interim report found no statistically significant differences in effects between the younger and older samples, although the effects on work were somewhat larger for older participants. The updated results in Table A.3 tell a similar story.

Figure 8

Bonus Receipt for Subgroups



SOURCE: Paycheck Plus program data on bonus receipt.

NOTES: Earnings subgroups reflect program members' earnings in the year before study entry. The more disadvantaged men subgroup includes individuals who either were noncustodial parents at the time of random assignment or had been incarcerated at some point prior to random assignment.

earnings make sense, given that the disadvantaged group has much lower employment rates in the absence of the program (as seen the employment rates for the control groups). The program creates a clear incentive to work for those out of the labor market, and the more disadvantaged men also are more likely to have earnings in the phase-in portion of the bonus schedule. In contrast, the group of other men has much higher employment rates and earnings, suggesting a smaller share facing positive work incentives. The pattern of negative effects on average earnings for this group (although not statistically significant) is potentially consistent with the varying incentives the bonus creates at higher earnings levels (phase-out range) versus lower earnings levels (phase-in range).

Table 10

Effects for More Disadvantaged Men Compared with Other Men

Outcome	More Disadvantaged Men[a] Program Group	More Disadvantaged Men[a] Control Group	More Disadvantaged Men[a] Difference (Effect)	Other Men Program Group	Other Men Control Group	Other Men Difference (Effect)	Difference Between Subgroups
Records outcomes							
After-bonus earnings (earnings plus credits minus taxes) ($)							
Year 1	7,159	7,028	132	10,603	10,349	254	
Year 2	8,807	7,958	849	13,068	12,862	206	
Year 3	9,803	8,488	1,315 **	14,250	14,514	-265	†
Years 1-3	8,590	7,825	765	12,640	12,575	65	
Any earnings (%)							
Year 1	73.1	72.6	0.6	79.5	80.0	-0.5	
Year 2	60.6	58.4	2.1	79.0	78.8	0.2	
Year 3	62.4	56.6	5.8 **	76.6	78.0	-1.3	††
Years 1-3	65.4	62.5	2.8	78.4	78.9	-0.6	
Average earnings ($)							
Year 1	7,060	7,327	-267	10,791	11,303	-512	
Year 2	9,326	8,659	667	14,075	14,503	-428	
Year 3	10,554	9,349	1,205	15,625	16,433	-808	††
Years 1-3	8,980	8,445	535	13,497	14,080	-582	
Filed taxes, Years 1-3 (%)	49.4	43.0	6.4 ***	72.8	68.6	4.3 ***	
Sample size (total = 3,409)	618	645		1,074	1,072		

(continued)

Table 10 (continued)

Outcome	More Disadvantaged Men[a] Program Group	More Disadvantaged Men[a] Control Group	More Disadvantaged Men[a] Difference (Effect)	Other Men Program Group	Other Men Control Group	Other Men Difference (Effect)	Difference Between Subgroups
Survey outcomes							
Income per equivalent member (including bonus)[b] ($)	15,073	13,681	1,393	16,950	16,858	93	
Income below 50% of poverty line (%)	31.7	41.8	-10.1 **	28.6	30.4	-1.9	†
Income below 100% of poverty line (%)	52.0	58.9	-6.9 *	49.1	46.7	2.3	†
Has depression or anxiety[c] (%)	36.3	40.7	-4.4	38.1	38.7	-0.6	
Sample size (total = 1,731)	295	301		578	557		

SOURCES: IRS tax forms, W-2s, and 1099-MISCs; Paycheck Plus 32-month survey data.

NOTES: Earnings refers to wages plus self-employment income.

Rounding may cause slight discrepancies in sums and differences.

A two-tailed t-test was applied to differences between the outcomes of the program and control groups. Statistical significance levels are indicated as: *** = 1 percent; ** = 5 percent; * = 10 percent. Statistical significance levels for differences across subgroup impacts are indicated as: ††† = 1 percent; †† = 5 percent; † = 10 percent.

Estimates were regression-adjusted using ordinary least squares, controlling for pre-random assignment characteristics of sample members.

All dollar amounts are adjusted for inflation using the Consumer Price Index Research Series (CPI-U-RS) and shown in constant 2016 dollars.

[a]The more disadvantaged men subgroup includes individuals who either were noncustodial parents at the time of random assignment or had been incarcerated at some point prior to random assignment.

[b]Income per equivalent member is a measure of income per household member using the equivalence scales implicit in the weighted-average federal poverty thresholds.

[c]Based on the Composite International Diagnostic Interview, Short Form; Kessler et al. (2002).

Table 11 presents effects for women compared with men. Effects on employment and earnings are larger for women, although these differences are not significant in Year 3. Effects on after-bonus earnings are also much bigger for women, reflecting their higher take-up rates of the bonus and the more positive effects on earnings. The lack of effects for the full group of men is not surprising, given the differences shown in Table 10 and the fact that disadvantaged men make up only about one-third of the full sample of men. Larger program effects for women on work, earnings, and after-bonus earnings are to be expected based on past research showing women's labor supply being more responsive to work incentives (net wages) than men's labor supply. The program led to similar increases in tax filing rates by gender, and it led to somewhat larger reduction in extreme poverty for men and a greater reduction in depression or anxiety rates for women. But the gender differences in program effects for these additional outcomes are not statistically significant.

Finally, Table 12 presents effects by earnings in the year before study entry. Although none of the differences in effects on work or average earnings is statistically significant, there is a pattern of larger effects for those with no earnings before study entry consistent with the strongest work incentives from the program being for those on the margin of working versus not working. Effects on after-bonus earnings are largest for the middle group, since they are more likely to have been working and able to claim the bonus, although this difference is not statistically significant. There are no significant differences in effects for most other outcomes, although the data suggest a larger reduction in severe poverty for the no-earnings group. Nearly half the control group members with no prior earnings reported a household income that left them below 50 percent of the poverty level.

Effects on Child Support Payment and Debt for Noncustodial Parents

The positive effects on employment and earnings for more disadvantaged men, a group including noncustodial parents, suggest that Paycheck Plus may lead to an increase in child support payments and a reduction in child support debt. Child support payments might rise through an increase in noncustodial parents' employment or through a change in their payment behavior, or both. Wage withholding, for example, could automatically increase payments if a parent moves into work. But higher income from earnings and the bonus payment might also encourage noncustodial parents to make payments.

Additionally, these payments might increase due to the Paycheck Plus intercept. Paycheck Plus in New York modeled the Federal Tax Refund Offset Program, which "intercepts" tax refunds to help pay down past-due child support payments. In each of the three program years, MDRC worked with the New York City Office of Child Support Services (OCSS) to identify program group members who earned a bonus but also had child support debt. Intercepted funds were forwarded to the state child support agency and paid to whom they were owed, either to the custodial parent or the Department of Social Services.

Table 11

Effects for Women Compared with Men

Outcome	Women Program Group	Women Control Group	Women Difference (Effect)	Men Program Group	Men Control Group	Men Difference (Effect)	Difference Between Subgroups
Records outcomes							
After-bonus earnings (earnings plus credits minus taxes) ($)							
Year 1	11,542	10,231	1,310 ***	9,211	9,081	130	†††
Year 2	13,747	12,673	1,074 ***	11,352	11,001	350	
Year 3	15,294	14,378	916 *	12,368	12,202	165	
Years 1-3	13,527	12,427	1,100 ***	10,977	10,762	215	†
Any earnings (%)							
Year 1	84.0	81.8	2.3 *	76.7	77.0	-0.3	
Year 2	83.0	78.4	4.6 ***	71.7	71.0	0.7	†
Year 3	82.5	79.9	2.6 *	70.8	69.6	1.2	
Years 1-3	83.2	80.0	3.2 ***	73.1	72.5	0.5	†
Average earnings ($)							
Year 1	11,504	10,805	699 *	9,274	9,797	-523	††
Year 2	14,563	13,859	703	12,145	12,295	-151	
Year 3	16,503	15,877	626	13,467	13,719	-252	
Years 1-3	14,190	13,514	676	11,629	11,937	-309	†
Filed taxes, Years 1-3 (%)	80.0	74.9	5.2 ***	63.4	58.7	4.7 ***	
Sample size (total = 5,903)	1,234	1,184		1,727	1,758		

(continued)

Table 11 (continued)

Outcome	Women Program Group	Women Control Group	Women Difference (Effect)	Men Program Group	Men Control Group	Men Difference (Effect)	Difference Between Subgroups
Survey outcomes							
Income per equivalent member (including bonus)[a] ($)	16,343	16,958	-616	16,108	15,636	473	
Income below 50% of poverty line (%)	28.0	30.3	-2.3	30.5	34.8	-4.4 **	
Income below 100% of poverty line (%)	48.4	49.0	-0.5	50.6	51.2	-0.6	
Has depression or anxiety[b] (%)	39.1	43.7	-4.6 *	37.4	39.3	-1.9	
Sample size (total = 3,249)	781	701		897	870		

SOURCES: IRS tax forms, W-2s, and 1099-MISCs; Paycheck Plus 32-month survey data.

NOTES: Earnings refers to wages plus self-employment income.

Rounding may cause slight discrepancies in sums and differences.

A two-tailed t-test was applied to differences between the outcomes of the program and control groups. Statistical significance levels are indicated as: *** = 1 percent; ** = 5 percent; * = 10 percent. Statistical significance levels for differences across subgroup impacts are indicated as: ††† = 1 percent; †† = 5 percent; † = 10 percent.

Estimates were regression-adjusted using ordinary least squares, controlling for pre-random assignment characteristics of sample members.

All dollar amounts are adjusted for inflation using the Consumer Price Index Research Series (CPI-U-RS) and shown in constant 2016 dollars.

[a]Income per equivalent member is a measure of income per household member using the equivalence scales implicit in the weighted-average federal poverty thresholds.

[b]Based on the Composite International Diagnostic Interview, Short Form; Kessler et al. (2002).

Table 12

Effects by Prior Earnings

Outcome	No Earnings			$1-10,000			> $10,000			Difference Across Subgroups
	Program Group	Control Group	Difference (Effect)	Program Group	Control Group	Difference (Effect)	Program Group	Control Group	Difference (Effect)	
Records outcomes										
After-bonus earnings (earnings plus credits minus taxes) ($)										
Year 1	5,205	4,616	589	9,694	9,042	652 **	16,058	15,367	691 *	
Year 2	6,816	6,501	316	12,167	11,029	1,138 ***	18,390	17,972	418	
Year 3	7,841	7,117	723	13,310	12,846	463	20,082	19,485	597	
Years 1-3	6,620	6,078	543	11,724	10,972	751 **	18,177	17,608	569	
Any earnings (%)										
Year 1	60.1	57.7	2.4	84.0	83.9	0.1	93.5	92.7	0.8	
Year 2	54.7	50.6	4.0 *	81.5	79.3	2.2	91.2	89.4	1.8	
Year 3	55.8	52.0	3.8	79.9	78.3	1.6	89.5	88.8	0.8	
Years 1-3	56.8	53.5	3.4 *	81.8	80.5	1.3	91.4	90.3	1.1	
Average earnings ($)										
Year 1	4,999	4,676	323	9,338	9,460	-123	16,915	17,012	-97	
Year 2	7,102	6,924	178	12,629	12,052	577	20,265	20,442	-177	
Year 3	8,320	7,651	669	14,179	14,215	-35	22,396	22,216	180	
Years 1-3	6,807	6,417	390	12,049	11,909	140	19,859	19,890	-31	
Filed taxes, Years 1-3 (%)	44.5	40.1	4.3 **	76.5	69.6	7.0 ***	87.3	84.3	3.0 **	†
Sample size (total = 5,948)	899	863		1,228	1,271		860	827		

(continued)

Table 12 (continued)

Outcome	No Earnings: Program Group	No Earnings: Control Group	No Earnings: Difference (Effect)	$1-10,000: Program Group	$1-10,000: Control Group	$1-10,000: Difference (Effect)	> $10,000: Program Group	> $10,000: Control Group	> $10,000: Difference (Effect)	Difference Across Subgroups
Survey outcomes										
Income per equivalent member (including bonus)[a] ($)	12,140	11,732	408	15,062	15,320	-258	21,034	21,494	-460	
Income below 50% of poverty line (%)	39.6	46.3	-6.7 *	30.3	32.4	-2.2	18.9	21.6	-2.7	
Income below 100% of poverty line (%)	62.6	65.7	-3.1	52.8	51.7	1.1	33.4	34.8	-1.4	
Has depression or anxiety[b] (%)	44.7	47.6	-2.9	37.4	40.8	-3.4	33.9	36.0	-2.1	
Sample size (total = 3,274)	412	425		750	698		532	457		

SOURCES: IRS tax forms, W-2s, and 1099-MISCs; Paycheck Plus 32-month survey data.

NOTES: Earnings refers to wages plus self-employment income.

Percentages for some categories may not add up due to rounding or missing values.

Sample sizes may vary because of missing values.

A two-tailed t-test was applied to differences between the outcomes of the program and control groups. Statistical significance levels are indicated as: *** = 1 percent; ** = 5 percent; * = 10 percent. Statistical significance levels for differences across subgroup impacts are indicated as: ††† = 1 percent; †† = 5 percent; † = 10 percent.

Estimates were regression-adjusted using ordinary least squares, controlling for pre-random assignment characteristics of sample members.

All dollar amounts are adjusted for inflation using the Consumer Price Index Research Series (CPI-U-RS) and shown in constant 2016 dollars.

[a]Income per equivalent member is a measure of income per household member using the equivalence scales implicit in the weighted-average federal poverty thresholds.

[b]Based on the Composite International Diagnostic Interview, Short Form; Kessler et al. (2002).

Table 13 shows the effects on child support payments and debt (arrears) among noncustodial parents, defined as those individuals who had a child support order or child support debt in early 2014 according to OCSS records.[52] The data used for this analysis are from administrative records provided by OCSS for the years 2014, 2015, and 2016. The table presents summary outcomes in each of the three years. An extended list of child support outcomes for 2014-2016 can be found in Appendix Tables A.9 and A.10.

Table 13

Effects on Child Support Payments and Debt Among Noncustodial Parents

Outcome	Program Group	Control Group	Difference (Effect)	P-Value
2014				
Ever made a payment (%)	75.6	76.5	-0.9	0.809
Average monthly amount paid ($)	141	127	13	0.369
Had child support debt in December 2014 (%)	85.5	85.7	-0.2	0.956
Average debt amount in December 2014 ($)	12,245	13,399	-1,154*	0.071
2015				
Ever made a payment (%)	72.6	65.0	7.6*	0.052
Average monthly amount paid ($)	172	124	48***	0.010
Had child support debt in December 2015 (%)	78.4	80.7	-2.2	0.525
Average debt amount in December 2015 ($)	12,189	13,036	-847	0.319
2016				
Ever made a payment (%)	65.2	58.0	7.2*	0.083
Average monthly amount paid ($)	144	121	23	0.205
Had child support debt in December 2016 (%)	71.9	76.6	-4.7	0.213
Average debt amount in December 2016 ($)	12,388	13,012	-624	0.527
Sample size (total = 513)	258	255		

SOURCE: New York City Office of Child Support Services (OCSS) administrative records.

NOTES: Rounding may cause slight discrepancies in sums and differences.
Sample sizes may vary because of missing values.
A two-tailed t-test was applied to differences between the outcomes of the program and control groups. Statistical significance levels are indicated as: *** = 1 percent; ** = 5 percent; * = 10 percent.
Estimates were regression-adjusted using ordinary least squares, controlling for pre-random assignment characteristics of sample members, plus the amount of child support debt owed prior to study entry.
All dollar amounts are adjusted for inflation using the Consumer Price Index Research Series (CPI-U-RS) and shown in constant 2016 dollars.

As Table 13 shows, the payment rate fell over the three-year period for both research groups. On average, for both groups combined, 76 percent made at least one payment in 2014, followed by 69 percent in 2015 and 62 percent in 2016. The fall in child support payments over

[52]Although the sample of noncustodial parents includes women and men, men make up 95 percent of that sample.

time can be explained in part by some sample members having their cases closed, for instance as their children reach the age of majority. On average, 98 percent of the noncustodial parent subgroup owed monthly child support in 2014, followed by 93 percent in 2015 and 88 percent in 2016 (not shown). The percentage of parents with accumulated debt follows a similar trend. In terms of amount paid, the control group paid on average $127 per month in 2014, which includes zeroes for those who did not pay. Among those who paid in a given month, the average amount paid was $261 (not shown).

Paycheck Plus led to an increase in child support payments in 2015 and 2016. In 2015, for example, about 73 percent of noncustodial parents in the program group made a payment, compared with 65 percent of those in the control group, for an increase of 7.6 percentage points. The program group paid on average $172 per month in 2015, for example, for an increase of $48 over the control group. The effect on ever making a payment in 2016 is similar in size, with an impact of 7.2 percentage points, but the effect on the amount paid is smaller and not statistically significant.

Some part of the effect on the payment rate may be due to the intercept of the Paycheck Plus bonus; the intercept was sometimes used to make payments on a noncustodial parent's monthly order in addition to paying down the debt, meaning that it would count as a payment during the year. However, the intercept is unlikely to account for the majority of the effect on payment rates, given its low incidence: Only about 20 percent of noncustodial parents had their bonuses intercepted in 2015, and that rate fell to 11 percent for 2016.

In addition, a separate analysis (not shown) estimated effects on payment rates and amounts excluding any payments coming through the intercept. While the effect on the monthly average payment amount in 2015 is reduced (to $29, statistically significant at the 11 percent level), the effect on ever making a payment is similar in size to the effect reported in Table 13 (6.8 percentage points) and statistically significant. The effect on ever making a payment in 2016 is also similar in size (at 6.5 percentage points) but only statistically significant at the 12 percent level. The effect on the average payment amount is reduced to $13 and no longer statistically significant. Thus, the effects of Paycheck Plus on child support payments appear to be due to both a mechanical effect through the intercept and a behavioral effect through increased employment and payments from noncustodial parents.

The bottom two rows from each year show effects on child support debt. The group of noncustodial parents had quite high debt levels, with an average of over $12,000 in each year. That average masks significant variation, however, and more than half of these parents owe less than $7,500. The average also includes zeroes for those without debt; among only those with some debt in 2014, the average amount owed was about $16,000.

While the data suggest some reduction in average amounts, particularly in 2014, this result should be interpreted with caution. There was a notable difference in average debt at study entry, with the program group owing less than the control group. Although the analysis controls for this difference, it is difficult to conclude that the reduction was due to the program. In addition, the biggest effect on debt occurred in 2014, before any intercepts would have occurred (the first

bonus payment occurred during the 2015 tax season), suggesting that the difference is an artifact of the difference that existed before study entry.

Effects on Criminal Justice Outcomes for Former Prisoners

Former prisoners face particular barriers in the labor market. They tend to have lower education and skill levels than other adults, and, when seeking jobs, they typically face the stigma of prior involvement with the criminal justice system.[53] Paycheck Plus, by increasing employment and helping make work pay, might reduce recidivism among former prisoners. A recent study found evidence that higher minimum wages reduce recidivism and that benefits from state EITCs also had small effects on recidivism, although only for women.[54] The larger effects for women may have been due to the fact that they received much larger EITC benefits than the men, since many of them were custodial parents.

Table 14 presents self-reported criminal justice outcomes among former prisoners at study entry. The data come from the Paycheck Plus survey. Survey respondents were asked about charges, convictions, and incarceration since random assignment. The Paycheck Plus program did not have any statistically detectable effect on any of these outcomes. In a separate analysis, effects on self-reported criminal justice outcomes were estimated for all men in the sample, and the findings were similar.

Table 14

Effects on Arrests, Convictions, and Incarceration Among Those Previously Incarcerated

Outcome (%)	Program Group	Control Group	Difference (Effect)	P-Value
Since random assignment				
Charged with any offense	18.8	16.0	2.9	0.430
Convicted of a crime	10.2	8.0	2.1	0.439
Incarcerated in a prison, jail, or other correctional facility	12.2	10.8	1.4	0.635
Sample size (total = 463)	224	239		

SOURCE: Paycheck Plus 32-month survey data.

NOTES: Rounding may cause slight discrepancies in sums and differences.
Sample sizes may vary because of missing values.
A two-tailed t-test was applied to differences between the outcomes of the program and control groups.
Estimates were regression-adjusted using ordinary least squares, controlling for pre-random assignment characteristics of sample members.

[53]Raphael (2011).

[54]Agan and Makowsky (2018).

Conclusion

Over the past several decades, the U.S. labor market has been characterized by rising inequality and stagnating or falling real wages for lower-income workers. Although the current tight labor market is starting to generate modest wage increases at the lower end, the longer-term trends are expected to continue for low-wage workers in the face of rising automation and international and domestic outsourcing.

The EITC was designed to improve the economic circumstances of the working poor, and it has become one of the most successful antipoverty programs in the country, lifting more than 9 million families out of poverty each year. Policymakers on both sides of the aisle have recognized this success and promoted the idea of expanding it for adults without dependent children. The Paycheck Plus demonstration in New York City was a first attempt to test this idea.

The findings presented here show that, as with the federal EITC, individuals cycled in and out of eligibility for the Paycheck Plus bonus over time, although there was a group of workers who stayed consistently in low-wage work and relied on the credit. Most eligible workers received the bonus, although take-up rates would likely be higher if it were part of the tax system and workers received it automatically when they filed taxes.

Paycheck Plus increased after-bonus earnings (or earnings net of taxes and credits), and it did so for all types of participants. The typical recipient earned a bonus of nearly $1,400 in a given program year. Not everyone received the bonus, so the increase in after-bonus earnings was smaller (but still sizable) for the program group as a whole: $635 per year (or about 6 percent) on average over the three years of the program, according to administrative tax data. The increase in after-bonus earnings evident from the tax records, measuring the study participants' earnings, taxes, and credits, was not apparent in self-reports of total household income from the 32-month survey, covering income from all household members and all sources. Nonetheless, the program also led to a reduction in severe poverty in the survey data, suggesting that increases in income at the lower end may have been offset by small reductions at the higher end.

Paycheck Plus led to a modest overall increase in annual employment rates of about 2 percentage points over the three years following program entry. The employment effects were larger for women than for men, larger for more disadvantaged men (those who had been incarcerated or were noncustodial parents) than for other low-income men, and larger for those with no earnings before program entry than for those with positive prior earnings. The effects for more disadvantaged men are especially encouraging, given their low employment rates and the challenges they face in the labor market. The program did not detectably increase earnings on average, but it increased earnings at the lower end of the earnings distribution. Although there were negative differences in earnings for the program group relative to the control group for some subgroups with high initial earnings, such effects were not statistically significant.

Finally, the program had effects on a few secondary outcomes. Paycheck Plus increased tax filing rates and the use of VITA sites, reducing the monetary costs of tax preparation. It also increased child support payments among noncustodial parents. The program had no detectable

effects on criminal justice or physical health outcomes. Paycheck Plus had mixed impacts on material well-being, including a reduction in extreme poverty but a small increase in the incidence of self-reported material hardship. The impacts on subjective well-being and mental health also varied, with a reduction in depression and/or anxiety among the program group but also a reduction in the share of the program group reporting to be very happy. Reductions in depression and anxiety from the Paycheck Plus bonus are consistent with nonexperimental research on the impacts of the EITC for single parents, but more evidence is needed to fully assess the broader impacts on health and well-being of a more generous EITC for childless adults.

The findings presented here for Paycheck Plus in New York City are consistent with much other research on the EITC, indicating that an effective work-based safety net program can increase incomes for vulnerable and low-income individuals and families by encouraging and rewarding work.

The findings from the Atlanta site will provide additional evidence on the program's effects on income, poverty, work, and earnings, as well as on mental health and subjective well-being.[55] The different context makes those upcoming findings of independent interest, and a pooled analysis of the New York and Atlanta sites will lead to more precise estimates of the Paycheck Plus program impacts for a more representative overall sample of low-income adults without dependent children.

[55]The fact that the Atlanta program does not include an intercept of the bonus to pay down child support debt will also provide a test of how these different versions of the model affect noncustodial parents.

Appendix A

Supplementary Tables: Sample Characteristics and Subgroup Effects

Appendix Table A.1

Baseline Characteristics by Research Group

Characteristic (%)	Program Group	Control Group	
Male	58.3	59.8	
Age			*
35 or younger	54.1	52.0	
Older than 35	45.9	48.0	
Race/ethnicity			
Hispanic	29.6	30.4	
Non-Hispanic black	57.9	57.6	
Non-Hispanic white/other	12.5	11.9	
Education			*
High school diploma or equivalent	52.7	55.3	
Some college or higher	25.3	23.2	
Noncustodial parent[a]	8.6	8.6	
Ever incarcerated in jail or prison	17.2	18.9	
More disadvantaged men subgroup[b]	36.5	37.6	
Currently working	45.4	44.9	
Working full time[c]	23.5	24.1	
Earnings in the past year			
$0	29.9	29.0	
$1-$6,666	27.9	28.4	
$6,667-$17,999	29.4	29.4	
$18,000 or higher	12.7	13.2	
Filed a tax return for tax year 2012	60.6	60.8	
Has heard of the Earned Income Tax Credit (EITC)	45.9	45.7	
Has received the EITC in the past	18.7	19.3	
Sample size (total = 5,968)	2,997	2,971	

(continued)

Appendix Table A.1 (continued)

SOURCES: Paycheck Plus baseline survey data; New York City Office of Child Support Services (OCSS) administrative records.

NOTES: Includes sample members randomly assigned between September 27, 2013, and February 18, 2014.

Percentages for some categories may not add up due to rounding or missing values.

In order to assess differences in characteristics across noncustodial parent groups, chi-square tests were used for categorical variables. Significance levels are indicated as: *** = 1 percent; ** = 5 percent; * = 10 percent. The significance level indicates the probability that one would be making an error in concluding that there is a difference between research groups for the variable in question.

[a]The measure refers to noncustodial parents who, according to OCSS records, had open child support cases with positive monthly obligation amounts or positive child support debt amounts when they enrolled in the study.

[b]The more disadvantaged men subgroup includes individuals who either were noncustodial parents at the time of random assignment or had been incarcerated at some point prior to random assignment.

[c]The measure refers to working 30 hours or more per week.

Appendix Table A.2

Baseline Characteristics for Selected Subgroups

Characteristic (%)	Men	Women	No Earnings in Prior Year	$1-$10,000 in Prior Earnings	> $10,000 in Prior Earnings	More Disadvantaged Men[a]	Other Men
Male	100.0	0.0	70.2	54.5	54.1	100.0	100.0
Age							
35 or younger	52.1	54.1	43.4	57.3	56.6	43.3	57.6
Older than 35	47.9	45.9	56.6	42.7	43.4	56.7	42.4
Race/ethnicity							
Hispanic	30.8	28.9	31.3	28.7	30.8	31.3	30.2
Non-Hispanic black	57.9	57.6	60.1	57.9	55.0	62.5	55.4
Non-Hispanic white/other	11.3	13.6	8.6	13.4	14.2	6.2	14.4
Education							
High school diploma or equivalent	56.3	50.8	51.7	55.7	53.6	54.9	57.5
Some college or higher	19.2	31.5	14.4	24.6	33.9	12.8	22.8
Noncustodial parent[b]	13.7	1.2	10.1	7.8	8.4	37.9	0.0
Ever incarcerated in jail or prison	27.1	5.0	37.7	11.7	7.1	73.9	0.0
More disadvantaged men subgroup[a]	37.0	0.0	55.5	29.4	23.7	100.0	0.0
Currently working	38.2	55.3	5.0	53.5	74.8	25.0	46.1
Working full time[c]	22.1	26.4	2.9	22.7	47.5	16.7	25.6
Sample size	3,485	2,418	1,762	2,499	1,687	1,263	2,146

(continued)

Appendix Table A.2 (continued)

Characteristic (%)	Men	Women	No Earnings in Prior Year	$1-$10,000 in Prior Earnings	> $10,000 in Prior Earnings	More Disadvantaged Men[a]	Other Men
Earnings in the past year							
$0	35.1	21.3	100.0	0.0	0.0	52.6	24.6
$1-$6,666	25.8	31.5	0.0	66.8	0.0	21.1	28.5
$6,667-$17,999	26.7	33.3	0.0	33.2	54.4	17.7	32.0
$18,000 or higher	12.4	13.9	0.0	0.0	45.6	8.6	14.9
Filed a tax return for tax year 2012	52.5	72.6	26.2	67.6	86.2	33.0	64.5
Has heard of the Earned Income Tax Credit (EITC)	42.1	51.1	37.8	47.2	52.0	42.7	42.0
Has received the EITC in the past	16.0	23.2	13.3	21.5	21.4	15.4	16.5
Sample size	3,485	2,418	1,762	2,499	1,687	1,263	2,146

SOURCES: Paycheck Plus baseline survey data; Paycheck Plus 32-month survey data; New York City Office of Child Support Services (OCSS) administrative records.

NOTES: Includes sample members randomly assigned between September 27, 2013, and February 18, 2014.

Percentages for some categories may not add up to 100 due to rounding or missing values.

[a]The more disadvantaged men subgroup includes individuals who either were noncustodial parents at the time of random assignment or had been incarcerated at some point prior to random assignment.

[b]The measure refers to noncustodial parents who had open child support cases with positive monthly obligation amounts or positive child support debt amounts when they enrolled in the study.

[c]The measure refers to working 30 hours or more per week.

Appendix Table A.3

Effects by Age

Outcome	35 or Younger			Older Than 35			Difference Between Subgroups
	Program Group	Control Group	Difference (Effect)	Program Group	Control Group	Difference (Effect)	
Records outcomes							
After-bonus earnings (earnings plus credits minus taxes) ($)							
Year 1	11,410	10,556	854 ***	8,832	8,414	418	
Year 2	14,127	13,434	692 *	10,396	9,759	637 *	
Year 3	16,216	15,459	757 *	10,829	10,463	365	
Years 1-3	13,918	13,150	768 **	10,019	9,545	473	
Any earnings (%)							
Year 1	85.7	84.6	1.1	73.2	72.5	0.7	
Year 2	83.3	81.7	1.6	68.9	65.3	3.6 **	
Year 3	82.9	82.1	0.8	67.9	64.5	3.4 **	
Years 1-3	83.9	82.8	1.2	70.0	67.4	2.6 **	
Average earnings ($)							
Year 1	11,524	11,291	233	8,751	8,990	-239	
Year 2	15,155	14,890	264	10,951	10,798	152	
Year 3	17,752	17,253	500	11,586	11,664	-78	
Years 1-3	14,810	14,478	332	10,429	10,484	-55	
Filed taxes, Years 1-3 (%)	76.6	72.4	4.3 ***	63.4	57.4	6.0 ***	
Sample size (total = 5,968)	1,622	1,544		1,375	1,427		

(continued)

Appendix Table A.3 (continued)

Outcome	35 or Younger			Older Than 35			Difference Between Subgroups
	Program Group	Control Group	Difference (Effect)	Program Group	Control Group	Difference (Effect)	
Survey outcomes							
Income per equivalent member (including bonus)[a] ($)	17,975	18,501	-527	14,179	13,835	344	
Income below 50% of poverty line (%)	26.3	27.8	-1.5	32.5	37.8	-5.3 **	
Income below 100% of poverty line (%)	45.0	44.0	1.0	54.5	56.5	-2.0	
Has depression or anxiety[b] (%)	36.6	41.5	-4.8 **	39.4	41.3	-1.8	
Sample size (total = 3,289)	922	814		779	774		

SOURCES: IRS tax forms, W-2s, and 1099-MISCs; Paycheck Plus 32-month survey data.

NOTES: Earnings refers to wages plus self-employment income.

Rounding may cause slight discrepancies in sums and differences.

A two-tailed t-test was applied to differences between the outcomes of the program and control groups. Statistical significance levels are indicated as: *** = 1 percent; ** = 5 percent; * = 10 percent. Statistical significance levels for differences across subgroup impacts are indicated as: ††† = 1 percent; †† = 5 percent; † = 10 percent.

Estimates were regression-adjusted using ordinary least squares, controlling for pre-random assignment characteristics of sample members.

All dollar amounts are adjusted for inflation using the Consumer Price Index Research Series (CPI-U-RS) and shown in constant 2016 dollars.

[a]Income per equivalent member is a measure of income per household member using the equivalence scales implicit in the weighted-average federal poverty thresholds.

[b]Based on the Composite International Diagnostic Interview, Short Form; Kessler et al. (2002).

Appendix Table A.4

Effects by Noncustodial Parent Status

Outcome	Noncustodial Parent[a] Program Group	Noncustodial Parent[a] Control Group	Noncustodial Parent[a] Difference (Effect)	Not a Noncustodial Parent Program Group	Not a Noncustodial Parent Control Group	Not a Noncustodial Parent Difference (Effect)	Difference Between Subgroups
Records outcomes							
After-bonus earnings (earnings plus credits minus taxes) ($)							
Year 1	8,982	8,462	520	10,327	9,627	700 ***	
Year 2	11,025	9,614	1,411	12,510	11,862	648 **	
Year 3	12,556	10,400	2,156 *	13,761	13,309	452	
Years 1-3	10,854	9,492	1,362 *	12,199	11,599	600 **	
Any earnings (%)							
Year 1	76.4	75.7	0.8	80.0	79.1	0.9	
Year 2	66.1	66.3	-0.1	77.4	74.5	2.9 ***	
Year 3	68.8	64.3	4.5	76.4	74.5	1.9 *	
Years 1-3	70.5	68.8	1.7	77.9	76.0	1.9 **	
Average earnings ($)							
Year 1	9,022	8,932	90	10,357	10,304	54	
Year 2	11,902	10,336	1,565	13,317	13,168	149	
Year 3	13,821	11,532	2,290 *	14,917	14,854	63	
Years 1-3	11,582	10,267	1,315	12,864	12,775	89	
Filed taxes, Years 1-3 (%)	54.2	46.3	7.9 **	71.8	67.0	4.9 ***	
Sample size (total = 5,968)	258	255		2,739	2,716		

(continued)

Appendix Table A.4 (continued)

Outcome	Noncustodial Parent[a] Program Group	Noncustodial Parent[a] Control Group	Noncustodial Parent[a] Difference (Effect)	Not a Noncustodial Parent Program Group	Not a Noncustodial Parent Control Group	Not a Noncustodial Parent Difference (Effect)	Difference Between Subgroups
Survey outcomes							
Income per equivalent member (including bonus)[b] ($)	15,943	14,111	1,832	16,257	16,448	-191	
Income below 50% of poverty line (%)	29.4	34.6	-5.1	29.1	32.5	-3.4 **	
Income below 100% of poverty line (%)	44.3	51.3	-7.0	49.9	49.9	0.0	
Has depression or anxiety[c] (%)	28.8	47.7	-18.9 ***	39.0	40.6	-1.6	†††
Sample size (total = 3,289)	148	141		1,553	1,447		

SOURCES: IRS tax forms, W-2s, and 1099-MISCs; Paycheck Plus 32-month survey data; New York City Office of Child Support Services (OCSS) administrative records.

NOTES: Earnings refers to wages plus self-employment income.

Rounding may cause slight discrepancies in sums and differences.

A two-tailed t-test was applied to differences between the outcomes of the program and control groups. Statistical significance levels are indicated as: *** = 1 percent; ** = 5 percent; * = 10 percent. Statistical significance levels for differences across subgroup impacts are indicated as: ††† = 1 percent; †† = 5 percent; † = 10 percent.

Estimates were regression-adjusted using ordinary least squares, controlling for pre-random assignment characteristics of sample members.

All dollar amounts are adjusted for inflation using the Consumer Price Index Research Series (CPI-U-RS) and shown in constant 2016 dollars.

[a]The measure refers to noncustodial parents who had open child support cases with positive monthly obligation amounts or positive child support debt amounts when they enrolled in the study.

[b]Income per equivalent member is a measure of income per household member using the equivalence scales implicit in the weighted-average federal poverty thresholds.

[c]Based on the Composite International Diagnostic Interview, Short Form; Kessler et al. (2002).

Appendix Table A.5

Effects by Former Incarceration Status

Outcome	Previously Incarcerated: Program Group	Previously Incarcerated: Control Group	Previously Incarcerated: Difference (Effect)	Not Previously Incarcerated: Program Group	Not Previously Incarcerated: Control Group	Not Previously Incarcerated: Difference (Effect)	Difference Between Subgroups
Records outcomes							
After-bonus earnings (earnings plus credits minus taxes) ($)							
Year 1	6,524	6,291	232	11,083	10,332	751 ***	
Year 2	7,632	7,339	293	13,460	12,683	777 **	
Year 3	8,604	7,836	768	14,838	14,322	516	
Years 1-3	7,586	7,155	431	13,127	12,446	682 ***	
Any earnings (%)							
Year 1	71.9	69.9	2.0	81.8	81.2	0.6	
Year 2	57.6	55.9	1.7	80.9	78.3	2.6 **	
Year 3	59.4	55.3	4.1	79.7	78.4	1.4	
Years 1-3	63.0	60.4	2.6	80.8	79.3	1.5 *	
Average earnings ($)							
Year 1	6,357	6,427	-70	11,156	11,110	46	
Year 2	7,905	7,871	34	14,386	14,090	296	
Year 3	9,126	8,454	671	16,153	16,037	117	
Years 1-3	7,796	7,584	212	13,898	13,745	153	
Filed taxes, Years 1-3 (%)	48.0	43.0	5.1 **	75.8	70.7	5.1 ***	
Sample size (total = 5,788)	501	544		2,407	2,336		

(continued)

Appendix Table A.5 (continued)

Outcome	Previously Incarcerated: Program Group	Previously Incarcerated: Control Group	Previously Incarcerated: Difference (Effect)	Not Previously Incarcerated: Program Group	Not Previously Incarcerated: Control Group	Not Previously Incarcerated: Difference (Effect)	Difference Between Subgroups
Survey outcomes							
Income per equivalent member (including bonus)[a] ($)	14,685	13,671	1,014	16,681	16,852	-171	
Income below 50% of poverty line (%)	30.9	41.9	-11.0 **	28.3	30.5	-2.2	†
Income below 100% of poverty line (%)	56.0	60.4	-4.4	47.8	48.1	-0.3	
Has depression or anxiety[b] (%)	39.8	38.8	1.0	38.1	41.7	-3.6 *	
Sample size (total = 3,185)	224	239		1,416	1,306		

SOURCES: IRS tax forms, W-2s, and 1099-MISCs; Paycheck Plus 32-month survey data.

NOTES: Earnings refers to wages plus self-employment income.

Rounding may cause slight discrepancies in sums and differences.

Sample sizes may vary because of missing values.

A two-tailed t-test was applied to differences between the outcomes of the program and control groups. Statistical significance levels are indicated as: *** = 1 percent; ** = 5 percent; * = 10 percent. Statistical significance levels for differences across subgroup impacts are indicated as: ††† = 1 percent; †† = 5 percent; † = 10 percent.

Estimates were regression-adjusted using ordinary least squares, controlling for pre-random assignment characteristics of sample members.

All dollar amounts are adjusted for inflation using the Consumer Price Index Research Series (CPI-U-RS) and shown in constant 2016 dollars.

[a]Income per equivalent member is a measure of income per household member using the equivalence scales implicit in the weighted-average federal poverty thresholds.

[b]Based on the Composite International Diagnostic Interview, Short Form; Kessler et al. (2002).

Appendix Table A.6

Effects on Tax Filing Outcomes: More Disadvantaged Men Compared with Other Men

Outcome (%)	More Disadvantaged Men[a] Program Group	More Disadvantaged Men[a] Control Group	More Disadvantaged Men[a] Difference (Effect)	Other Men Program Group	Other Men Control Group	Other Men Difference (Effect)	Difference Between Subgroups
Filed taxes							
Year 2015	53.6	48.5	5.1 **	76.4	71.5	4.9 ***	
Year 2016	48.8	43.9	4.9 *	72.0	68.8	3.2 *	
Year 2017	45.8	36.6	9.2 ***	70.2	65.6	4.6 **	
Filed taxes at a VITA site							
Year 2015	30.7	10.9	19.8 ***	46.2	21.5	24.6 ***	†
Year 2016	23.1	8.7	14.4 ***	35.0	17.4	17.7 ***	
Year 2017	17.9	5.0	13.0 ***	28.6	12.5	16.1 ***	
Received the EITC							
Year 2015	34.4	31.6	2.7	36.4	33.0	3.3 *	
Year 2016	28.7	25.4	3.3	29.6	28.3	1.3	
Year 2017	22.9	20.0	2.9	28.8	25.4	3.4 *	
Sample size (total = 3,409)	618	645		1,074	1,072		

SOURCES: IRS tax forms, W-2s, and 1099-MISCs.

NOTES: VITA = Volunteer Income Tax Assistance; EITC = Earned Income Tax Credit.

Earnings refers to wages plus self-employment income.

Rounding may cause slight discrepancies in sums and differences.

A two-tailed t-test was applied to differences between the outcomes of the program and control groups. Statistical significance levels are indicated as: *** = 1 percent; ** = 5 percent; * = 10 percent. Statistical significance levels for differences across subgroup impacts are indicated as: ††† = 1 percent; †† = 5 percent; † = 10 percent.

Estimates were regression-adjusted using ordinary least squares, controlling for pre-random assignment characteristics of sample members.

[a]The more disadvantaged men subgroup includes individuals who either were noncustodial parents at the time of random assignment or had been incarcerated at some point prior to random assignment.

Appendix Table A.7

Effects on Tax Filing Outcomes: Women Compared with Men

Outcome (%)	Women			Men			Difference Between Subgroups
	Program Group	Control Group	Difference (Effect)	Program Group	Control Group	Difference (Effect)	
Filed taxes							
Year 2015	82.9	78.1	4.7 ***	67.4	62.5	5.0 ***	
Year 2016	80.4	74.2	6.2 ***	62.6	59.2	3.4 **	
Year 2017	76.8	72.2	4.6 ***	60.3	54.4	5.9 ***	
Filed taxes at a VITA site							
Year 2015	54.3	23.6	30.7 ***	40.1	17.4	22.7 ***	†††
Year 2016	46.9	19.4	27.5 ***	30.4	14.0	16.4 ***	†††
Year 2017	34.7	15.5	19.2 ***	24.5	9.7	14.8 ***	††
Received the EITC							
Year 2015	43.3	38.7	4.6 **	35.7	32.2	3.5 **	
Year 2016	37.8	34.8	3.0	29.3	27.1	2.3	
Year 2017	34.1	32.7	1.4	26.5	23.2	3.3 **	
Sample size (total = 5,903)	1,234	1,184		1,727	1,758		

SOURCES: IRS tax forms, W-2s, and 1099-MISCs.

NOTES: VITA = Volunteer Income Tax Assistance; EITC = Earned Income Tax Credit.

Earnings refers to wages plus self-employment income.

Rounding may cause slight discrepancies in sums and differences.

A two-tailed t-test was applied to differences between the outcomes of the program and control groups. Statistical significance levels are indicated as: *** = 1 percent; ** = 5 percent; * = 10 percent. Statistical significance levels for differences across subgroup impacts are indicated as: ††† = 1 percent; †† = 5 percent; † = 10 percent.

Estimates were regression-adjusted using ordinary least squares, controlling for pre-random assignment characteristics of sample members.

Appendix Table A.8

Effects on Tax Filing Outcomes Across Prior Earnings Subgroups

Outcome (%)	No Earnings			$1-$10,000			> $10,000			Difference Across Subgroups
	Program Group	Control Group	Difference (Effect)	Program Group	Control Group	Difference (Effect)	Program Group	Control Group	Difference (Effect)	
Filed taxes										
Year 2015	47.2	42.3	4.9 **	80.3	74.0	6.3 ***	91.1	87.9	3.2 **	
Year 2016	44.7	40.1	4.6 **	75.9	69.4	6.5 ***	86.9	84.9	2.0	
Year 2017	41.5	38.0	3.5	73.3	65.3	8.0 ***	84.0	80.2	3.8 **	
Filed taxes at a VITA site										
Year 2015	22.1	9.0	13.1 ***	53.5	23.1	30.4 ***	58.8	26.7	32.1 ***	†††
Year 2016	17.6	7.5	10.1 ***	43.8	18.5	25.3 ***	46.8	21.8	25.1 ***	†††
Year 2017	13.6	6.7	6.9 ***	34.3	13.5	20.8 ***	35.2	14.9	20.3 ***	†††
Received the EITC										
Year 2015	32.1	27.3	4.8 **	47.8	42.3	5.5 ***	32.1	30.8	1.3	
Year 2016	25.7	22.5	3.2	40.0	35.2	4.8 **	29.2	29.9	-0.7	
Year 2017	20.6	21.1	-0.4	37.0	31.2	5.8 ***	27.0	26.6	0.4	††
Sample size (total = 5,948)	899	863		1,228	1,271		860	827		

SOURCES: IRS tax forms, W-2s, and 1099-MISCs.

NOTES: VITA = Volunteer Income Tax Assistance; EITC = Earned Income Tax Credit.

Earnings refers to wages plus self-employment income.

Rounding may cause slight discrepancies in sums and differences.

A two-tailed t-test was applied to differences between the outcomes of the program and control groups. Statistical significance levels are indicated as: *** = 1 percent; ** = 5 percent; * = 10 percent. Statistical significance levels for differences across subgroup impacts are indicated as: ††† = 1 percent; †† = 5 percent; † = 10 percent.

Estimates were regression-adjusted using ordinary least squares, controlling for pre-random assignment characteristics of sample members.

Appendix Table A.9

Effects on Child Support Payments Among Noncustodial Parents

Outcome	Program Group	Control Group	Difference (Effect)	P-Value
2014				
Average monthly amount owed ($)	445	439	6	0.858
Current child support order ($)	218	215	3	0.880
Child support debt ($)	234	228	6	0.784
Ever made a payment (%)	75.6	76.5	-0.9	0.809
Average number of payments	4.7	4.8	-0.1	0.794
Average monthly amount paid ($)	141	127	13	0.369
Average monthly amount paid via wage withholding ($)	73	74	-1	0.915
2015				
Average monthly amount owed ($)	407	412	-5	0.879
Current child support order ($)	207	192	15	0.408
Child support debt ($)	208	220	-11	0.611
Ever made a payment (%)	72.6	65.0	7.6*	0.052
Average number of payments	4.9	4.4	0.5	0.221
Average monthly amount paid ($)	172	124	48***	0.010
Average monthly amount paid via wage withholding ($)	87	75	11	0.417
2016				
Average monthly amount owed ($)	400	380	20	0.545
Current child support order ($)	192	172	20	0.273
Child support debt ($)	213	209	4	0.872
Ever made a payment (%)	65.2	58.0	7.2*	0.083
Average number of payments	4.5	4.3	0.3	0.531
Average monthly amount paid ($)	144	121	23	0.205
Average monthly amount paid via wage withholding ($)	87	79	8	0.569
Sample size (total = 513)	258	255		

SOURCE: New York City Office of Child Support Services (OCSS) administrative records.

NOTES: Rounding may cause slight discrepancies in sums and differences.
Sample sizes may vary because of missing values.
Statistical significance levels are indicated as: *** = 1 percent; ** = 5 percent; * = 10 percent.
All dollar amounts are adjusted for inflation using the Consumer Price Index Research Series (CPI-U-RS) and shown in constant 2016 dollars.

Appendix Table A.10

Effects on Child Support Debt Among Noncustodial Parents

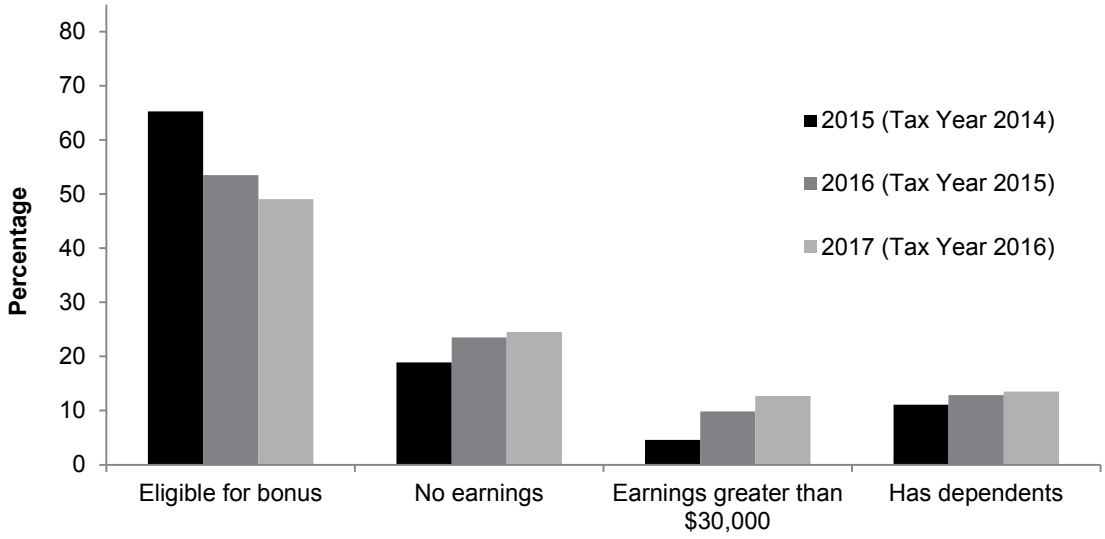
Outcome	Program Group	Control Group	Difference (Effect)	P-Value
2014				
Had child support debt in December 2014 (%)	85.5	85.7	-0.2	0.956
Average debt amount in December 2014 ($)	12,245	13,399	-1,154*	0.071
Debt amount in December 2014 (%)				
Less than $500	26.9	26.5	0.4	0.924
$500-$7,499	33.9	30.6	3.3	0.420
$7,500-$19,999	18.7	17.2	1.5	0.657
>$20,000	20.6	25.7	-5.1**	0.033
2015				
Had child support debt in December 2015 (%)	78.4	80.7	-2.2	0.525
Average debt amount in December 2015 ($)	12,189	13,036	-847	0.319
Debt amount in December 2015 (%)				
Less than $500	35.0	29.5	5.5	0.165
$500-$7,499	24.9	26.9	-2.1	0.585
$7,500-$19,999	20.9	21.3	-0.5	0.900
>$20,000	19.3	22.2	-2.9	0.253
2016				
Had child support debt in December 2016 (%)	71.9	76.6	-4.7	0.213
Average debt amount in December 2016 ($)	12,388	13,012	-624	0.527
Debt amount in December 2016 (%)				
Less than $500	38.7	33.8	4.9	0.223
$500-$7,499	23.2	24.2	-1.1	0.774
$7,500-$19,999	16.5	18.6	-2.0	0.551
>$20,000	21.6	23.4	-1.8	0.517
Sample size (total = 513)	258	255		

SOURCE: New York City Office of Child Support Services (OCSS) administrative records.

NOTES: Rounding may cause slight discrepancies in sums and differences.
Sample sizes may vary because of missing values.
Statistical significance levels are indicated as: *** = 1 percent; ** = 5 percent; * = 10 percent.
All dollar amounts are adjusted for inflation using the Consumer Price Index Research Series (CPI-U-RS) and shown in constant 2016 dollars.

Appendix Figure A.1

Distribution of Control Group Members by Eligibility Status

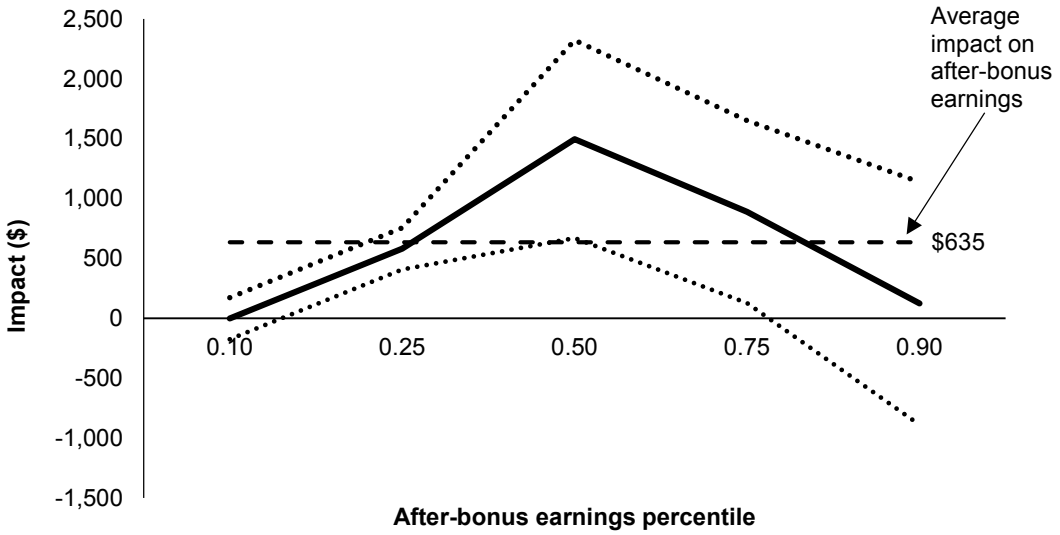


SOURCES: IRS tax forms, W-2s, and 1099-MISCs.

NOTE: Individuals met eligibility criteria for the bonus if they had earnings less than $30,000 and no dependent children.

Appendix Figure A.2

Quantile Effects on After-Bonus Earnings, Years 1-3



SOURCES: IRS tax forms, W-2s, and 1099-MISCs; Paycheck Plus program data on bonus receipt.

NOTES: After-bonus earnings refers to earnings plus credit amount minus taxes.

The thick solid line presents the impact on after-bonus earnings at each point in the distribution. The dotted lines show the confidence interval around that estimate.

An estimate is not statistically significant at the 10 percent level if the confidence interval includes the value of 0.

Appendix B

32-Month Survey Response Analysis

The report shows the effects on employment, earnings, child support, income, and other outcomes using responses to a survey fielded about 32 months after program enrollment. When only a subset of the sample completes a survey, potential issues can arise about the reliability of results estimated for survey respondents and, also, whether results for respondents can be generalized to all study participants.

This appendix summarizes the results of tests of the reliability and generalizability of impact estimates calculated with survey responses. First, the appendix assesses whether research group differences in employment and earnings outcomes are unbiased (and therefore reliable) indicators of Paycheck Plus effects. Survey results are considered to be unbiased if a large proportion of each research group responded to the survey and if respondents in both research groups closely resemble each other in characteristics, such as educational attainment or prior employment, that would be likely to affect their ability to work after study entry.

Second, this appendix considers whether impact results estimated for survey respondents may be generalized to all study participants. Survey results are considered to be generalizable if it can be inferred with confidence that the analysis would have reached similar conclusions about the effects of Paycheck Plus on employment and earnings had every study participant completed a 32-month survey interview.

Overall, the results show that the survey is reliable and that results for the survey respondent samples can be generalized to the wider study sample. Although some differences were found in the respondent and nonrespondent pre-random assignment characteristics, the effects for the respondent sample on key outcomes are very similar to the effects for the full study sample.

Main Findings

- A high response rate was achieved. The majority of sample members in both research groups responded to the 32-month survey. Overall, 69 percent of the fielded sample responded to the survey.
- A comparison of survey respondents and nonrespondents shows some statistically significant differences in key pre-random assignment characteristics.
- Among 32-month survey respondents, characteristics at baseline were similar for the two research groups. No systematic differences between the groups were found.
- Paycheck Plus impacts on employment and earnings among respondents are similar to the impacts for the wider samples.

Survey Sample Selection

As noted earlier in the report, the research sample includes 5,968 sample members who enrolled in the study from September 2013 through February 2014. A random sample of 4,749 individuals

from the research sample (or about 80 percent of the full research sample) was selected to be included in the survey efforts.[1] This sample is referred to as the *fielded sample*. From June 23, 2016, through December 18, 2016, the survey firm for the study, Decision Information Resources, attempted to interview everyone in the fielded sample. Almost everyone selected to be in the survey was eligible for the survey, except for 115 individuals, or 2 percent of the sample, who were subsequently found to be ineligible for the sample because of death, incarceration, or lack of fluency in English or Spanish.

Survey Response Rates

Sample members who were interviewed for the 32-month survey are referred to as "survey respondents," or the *respondent sample*, while members of the fielded sample who were not interviewed are known as "nonrespondents" or the *nonrespondent sample*. Appendix Table B.1 shows the response rates for the fielded sample and for the main subgroups. Overall, 69 percent of the fielded sample (or 3,289 individuals) completed the survey. The majority of the nonrespondent sample either refused to be interviewed or could not be located. The response rate for Paycheck Plus program group members was almost 72 percent and for control group members was almost 67 percent, for a difference between the research groups of 5 percent, which is statistically significant. The differences in response rates between research groups appear across most subgroups except for more disadvantaged men and those with no earnings in the year before enrollment.

As shown, the response rates varied for some subgroups. Women were more likely to respond to the survey than men (77 percent versus 64 percent), and those with higher earnings were more likely to respond than those with no earnings. The disadvantaged men subgroup was also less likely to respond to the survey than their subgroup counterpart of other men (59 percent versus 67 percent).

Although the overall response rates were high, whenever the response rate is lower than 100 percent, *nonresponse bias* may occur. Differences may exist between the respondent sample and the larger, fielded sample, owing to differences between the sample members who completed a survey and those who did not. Furthermore, the estimates may be biased if background characteristics differ between the research groups in the respondent sample.

Comparison of Respondents and Nonrespondents Within the Fielded Survey Sample

In order to examine whether there are systematic differences between those who responded to the survey and those who did not, a (0/1) indicator of survey respondent status was created (in which

[1]Originally, a total of 4,750 were selected for the survey, but one person withdrew from the study and was excluded from the survey.

Appendix Table B.1

Paycheck Plus Survey Response Rates by Research Group and Subgroup

Survey Respondent (%)	Program Group	Control Group		Total	Sample Size
Fielded sample	71.7	66.9	***	69.3	4,749
Women	80.3	74.0	***	77.2	1,920
Men	65.5	62.0	*	63.7	2,773
35 or younger	71.4	65.3	***	68.4	2,538
Older than 35	72.0	68.6	*	70.2	2,211
More disadvantaged men subgroup[a]	59.7	57.6		58.6	1,017
Other men subgroup	68.3	65.5		66.9	1,697
Earnings in the year before enrollment					
No earnings	57.8	61.2		59.5	1,407
$1-$10,000	77.5	69.0	***	73.1	1,980
More than $10,000	77.7	69.2	***	73.5	1,345
Sample size	2,374	2,375		4,749	

SOURCES: Paycheck Plus baseline survey and 32-month survey data.

NOTES: Seventeen participants were not eligible for the 32-month survey because of missing consent forms at the beginning of the project.

Rounding may cause slight discrepancies in calculating average response rates.

Chi-square tests were run to determine whether there are differences in the response rates by research groups. Statistical significance levels are indicated as: *** = 1 percent; ** = 5 percent; and * = 10 percent.

[a]The more disadvantaged men subgroup includes individuals who either were noncustodial parents at the time of random assignment or had been incarcerated at some point prior to random assignment.

survey respondents receive a 1 and nonrespondents receive a 0), and logistic regression analysis was used to identify whether any pre-random assignment characteristics were significantly related to the indicator.

Appendix Table B.2 shows the estimated regression coefficients for the probability of being a respondent. As the table indicates, besides background characteristics such as race, age, and education, a (0/1) indicator of membership in the Paycheck Plus group was included in the model. This procedure tests for differences in characteristics likely to affect employment and earnings outcomes. The second column of the table provides the parameter estimates that indicate

Appendix Table B.2

Estimated Regression Coefficients for the Probability of Being a Respondent to the Paycheck Plus 32-Month Survey

	Fielded Sample	
Variable	Parameter Estimate	P-Value
Baseline measure		
Assigned to Paycheck Plus Group	0.241	< 0.001
Employed at baseline	0.300	< 0.001
Black	0.372	< 0.001
Hispanic	0.149	0.178
Age 25-34	-0.104	0.271
Age 35-44	-0.015	0.895
Age 45 or older	0.268	0.006
Female	0.479	< 0.001
Previously incarcerated	-0.430	< 0.001
Earnings in the prior three quarters	0.000	0.006
Number of quarters employed in prior three quarters	0.208	< 0.001
Month 2 of random assignment	-0.307	0.188
Month 3 of random assignment	-0.477	0.035
Month 4 of random assignment	-0.534	0.016
Month 5 of random assignment	-0.586	0.009
Month 6 of random assignment	-0.642	0.010
Missing currently employed flag	0.728	0.413
Missing race flag	0.965	0.079
Missing gender flag	-0.765	0.115
Missing previously incarcerated flag	-0.025	0.909
Noncustodial parent	0.321	0.007
High school equivalency or greater	0.306	< 0.001
Missing education flag	-0.409	0.232
Likelihood ratio	316.9	< 0.001
Wald statistic	291.4	< 0.001
R-squared (0.0646)		
Sample size	4,749	

SOURCES: Paycheck Plus baseline survey and 32-month survey data.

NOTE: Seventeen participants were not eligible for the 32-month survey because of missing consent forms at the beginning of the project.

the effect of each variable on the probability of completing the survey. The p-values show the level of statistical significance of this relationship.[2]

Several characteristics were statistically significant in predicting whether someone would complete a 32-month interview. For instance, those who were age 45 or older, female, black, or noncustodial parents, those who graduated from high school or obtained a General Educational Development (GED) credential, and those who had a current or recent attachment to the workforce had a higher likelihood of responding to the survey. Fielded sample members who had been previously incarcerated were less likely to respond to the survey. Finally, fielded sample members randomly assigned later in the intake period were less likely to respond than those from the earlier months of random assignment.

The p-values for the entire model displayed at the bottom of Table B.2 show that the differences in sample member characteristics between the survey respondents and the survey nonrespondents are statistically significant. Nonetheless, the R-squared value (a summary indicator of the predictive power of the effects) of 0.0646 is very low, which suggests that sample member characteristics had a very small effect on the likelihood of responding to the 32-month survey. However, the results from this test also show that membership in the Paycheck Plus group predicted survey completion, consistent with the higher response rates shown in Table B.1. By itself, this finding suggests caution when interpreting results from the survey, although further tests are described below.

Comparison of the Research Groups in the Survey Respondent Sample

Random assignment designs minimize the possibility of potential biases in the results. Although the response rates were similarly high in both research groups, there is still the possibility that different types of sample members within each research group responded to the survey. If so, the impact estimates for the respondent sample may be biased.

Appendix Table B.3 shows baseline characteristics of the Paycheck Plus and control group members among the respondent sample. The differences between the groups are very small, and only one (for age at study entry) is statistically significant. In addition, a logistic regression analysis was performed to further test for associations between sample member characteristics and research group membership. A (0/1) indicator of membership in the Paycheck Plus group was regressed on pre-random assignment characteristics. As shown in Appendix Table B.4, only one baseline characteristic (age 35-44) was found to be significantly related to the research status. These results suggest that program impacts estimated using the survey data are unbiased.

[2]For example, a p-value of 0.05 indicates that the difference is statistically significant at the 5 percent level, meaning there is no more than a 5 percent chance that a difference of the given size could have been observed if the program had no true effect.

Appendix Table B.3

Baseline Characteristics Among 32-Month Survey Respondents, by Research Group

Characteristic (%)	Program Group	Control Group	Total	Sample Size
Male	53.5	55.4	54.4	1,767
Age			*	
35 or younger	54.2	51.3	52.8	1,736
Older than 35	45.8	48.7	47.2	1,553
Race/ethnicity				
Hispanic	28.2	28.9	28.5	921
Non-Hispanic black	59.3	60.2	59.7	1,930
Non-Hispanic white/other	12.6	10.9	11.8	381
Education				
High school diploma or equivalent	53.5	54.9	54.2	1,754
Some college or higher	27.2	24.9	26.1	844
Noncustodial parent[a]	8.7	8.9	8.8	289
Ever incarcerated in jail or prison	13.7	15.5	14.5	463
More disadvantaged men subgroup[b]	17.8	19.3	18.5	596
Currently working	50.1	49.7	49.9	1,627
Working full time[c]	25.1	26.9	26.0	837
Earnings in the past year				
$1-$6,666	29.8	29.2	29.5	964
$6,667-$11,999	17.5	17.1	17.3	564
$12,000-$17,999	15.3	13.3	14.3	467
$18,000 or higher	13.3	13.8	13.5	442
Filed tax return for tax year 2012	65.5	65.2	65.4	2,126
Has heard of the Earned Income Tax Credit (EITC)	48.5	48.2	48.4	1,570
Has received the EITC in the past	19.9	21.4	20.6	654
Sample size	1,701	1,588		3,289

(continued)

Appendix Table B.3 (continued)

SOURCES: Paycheck Plus baseline survey and 32-month survey data; New York City Office of Child Support Services (OCSS) administrative records.

NOTES: Includes sample members randomly assigned between September 27, 2013, and February 18, 2014.

Seventeen participants were not eligible for the 32-month survey because of missing consent forms at the beginning of the project. Among the full sample, 42 individuals (0.70 percent) are missing the Baseline Information Form.

Percentages for some categories may not add up due to rounding or missing values.

In order to assess differences in characteristics across research groups, chi-square tests were used for categorical variables and T-tests were used for continuous variables. Significance levels are indicated as: *** = 1 percent; ** = 5 percent; * = 10 percent. The significance level indicates the probability that one would be making an error in concluding that there is a difference between research groups for the variable in question.

[a]The measure refers to noncustodial parents who had open child support cases with positive monthly obligation amounts or positive child support debt amounts when they enrolled in the study.

[b]The more disadvantaged men subgroup includes individuals who either were noncustodial parents at the time of random assignment or had been incarcerated at some point prior to random assignment.

[c]The measure refers to working 30 hours or more per week.

Comparison of Survey Respondents with the Report Sample

Using administrative records data from New York State unemployment insurance, bonus participation, and tax records, this section discusses whether the survey respondents' impacts can be generalized to the main report sample.

For a first test of generalizability, Appendix Table B.5 compares employment and earnings impacts using New York State unemployment insurance data for three samples: (1) the full (report) sample; (2) the fielded sample; and (3) the survey respondent sample. As shown, the impact results for the three samples are very similar in magnitude and level of statistical significance.

The Paycheck Plus bonus take-up was also examined across the different samples (not shown). The Paycheck Plus bonus take-up results showed that program group members who responded to the 32-month survey were more likely than nonrespondents to have received the Paycheck Plus bonus.

A third test uses tax data from 2014, 2015, and 2016. This test compared estimates of the program's impacts on work and earnings for the survey respondent sample and the full research samples. Appendix Table B.6 shows that the impacts using the tax records were very similar across samples.

Appendix Table B.4

Estimated Regression Coefficients for the Probability of Being a Program Group Member Among 32-Month Survey Respondents

	Fielded Sample	
Variable	Parameter Estimate	P-Value
Baseline measure		
Employed at baseline	-0.040	0.626
Black	-0.164	0.153
Hispanic	-0.170	0.171
Age 25-34	-0.114	0.262
Age 35-44	-0.224	0.071
Age 45 or older	-0.158	0.125
Female	0.056	0.458
Previously incarcerated	-0.086	0.435
Earnings in the prior three quarters	0.000	0.906
Number of quarters employed in prior three quarters	0.016	0.711
Month 2 of random assignment	-0.108	0.603
Month 3 of random assignment	0.010	0.959
Month 4 of random assignment	-0.034	0.862
Month 5 of random assignment	-0.061	0.761
Month 6 of random assignment	-0.048	0.836
Missing currently employed flag	-0.547	0.559
Missing race flag	0.168	0.670
Missing gender flag	0.319	0.624
Missing previously incarcerated flag	0.344	0.157
Noncustodial parent	0.073	0.576
High school equivalency or greater	0.023	0.801
Missing education flag	-0.040	0.925
Likelihood ratio	12.8	0.938
Wald statistic	12.7	0.941
R-squared (0.0039)		
Sample size	3,289	

SOURCES: Paycheck Plus baseline survey and 32-month survey data.

NOTE: Seventeen participants were not eligible for the 32-month survey because of missing consent forms at the beginning of the project.

Appendix Table B.5

Comparison of Effects on Employment and Earnings for the Full Report Sample, the Fielded Survey Sample, and the Survey Respondent Sample

Outcome	Program Group	Control Group	Difference (Effect)	P-Value
Ever employed[a] (%)				
Year 1				
Report sample	74.3	74.2	0.0	0.968
Fielded sample	74.4	73.9	0.5	0.667
Respondent sample	78.1	77.6	0.5	0.709
Year 2				
Report sample	70.2	67.3	3.0 ***	0.006
Fielded sample	70.2	67.4	2.8 **	0.020
Respondent sample	75.5	72.8	2.7 **	0.049
Year 3				
Report sample	68.3	65.6	2.7 **	0.016
Fielded sample	67.8	65.7	2.1 *	0.090
Respondent sample	74.2	71.9	2.2	0.118
Years 1-3				
Report sample	84.3	82.5	1.8 **	0.042
Fielded sample	84.3	82.0	2.3 **	0.021
Respondent sample	87.7	85.9	1.8 *	0.093
Year 4 (first half)				
Report sample	55.9	54.0	1.9	0.160
Fielded sample	55.6	54.2	1.4	0.380
Respondent sample	61.8	60.1	1.7	0.348
Earnings[a] ($)				
Year 1				
Report sample	9,507	9,328	179	0.439
Fielded sample	9,523	9,486	37	0.888
Respondent sample	10,020	10,125	-105	0.736

(continued)

Appendix Table B.5 (continued)

Outcome	Program Group	Control Group	Difference (Effect)	P-Value
Year 2				
Report sample	11,714	11,433	280	0.384
Fielded sample	11,758	11,429	328	0.373
Respondent sample	12,489	12,149	340	0.433
Year 3				
Report sample	13,179	12,885	294	0.436
Fielded sample	13,127	12,953	174	0.683
Respondent sample	14,104	13,950	154	0.762
Average Year 1-3				
Report sample	11,467	11,216	251	0.359
Fielded sample	11,469	11,290	180	0.564
Respondent sample	12,205	12,075	130	0.724
Year 4 (first half)				
Report sample	6,234	5,938	295	0.202
Fielded sample	6,193	5,880	314	0.227
Respondent sample	6,842	6,466	375	0.235
Sample sizes				
Report sample (total = 5,968)	2,997	2,971		
Fielded sample (total = 4,749)	2,374	2,375		
Respondent sample (total = 3,289)	1,701	1,588		

SOURCES: New York State unemployment insurance wage records; Paycheck Plus 32-month survey data.

NOTES: Seventeen participants were not eligible for the 32-month survey because of missing consent forms at the beginning of the project.

Rounding may cause slight discrepancies in sums and differences.

Sample sizes may vary because of missing values.

A two-tailed t-test was applied to differences between the outcomes of the program and control groups. Statistical significance levels are indicated as: *** = 1 percent; ** = 5 percent; * = 10 percent.

Estimates were regression-adjusted using ordinary least squares, controlling for pre-random assignment characteristics of sample members.

Dollar averages include zero values for sample members who were not employed.

All dollar amounts are adjusted for inflation using the Consumer Price Index Research Series (CPI-U-RS) and shown in constant 2016 dollars.

[a]This table includes only employment and earnings in jobs covered by the New York State unemployment insurance program. It does not include employment outside of New York State, nor in jobs not covered by the unemployment insurance system (for example, "off-the-books" jobs and federal government jobs).

Appendix Table B.6

Comparison of Effects on Tax-Reported Employment and Earnings for the Survey and Full Samples

	Survey Sample		Full Sample	
Outcome	Impact	P-Value	Impact	P-Value
Any earnings (%)				
Year 2014	1.7	0.149	0.9	0.338
Year 2015	2.6	0.041	2.6	0.009
Year 2016	2.3	0.075	2.1	0.043
Average earnings ($)				
Year 2014	15	0.962	33	0.893
Year 2015	473	0.289	228	0.499
Year 2016	266	0.598	209	0.582
Sample size	3,289		5,968	

SOURCES: IRS tax forms, W-2s, and 1099-MISCs; Paycheck Plus 32-month survey data.

NOTES: Earnings refers to wages plus self-employment income.

A two-tailed t-test was applied to differences between the outcomes of the program and control groups. Statistical significance levels are indicated as: *** = 1 percent; ** = 5 percent; * = 10 percent.

Estimates were regression-adjusted using ordinary least squares, controlling for pre-random assignment characteristics of sample members.

All dollar amounts are adjusted for inflation using the Consumer Price Index Research Series (CPI-U-RS) and shown in constant 2016 dollars.

Appendix C

Effects on Additional Outcomes from the 32-Month Survey

Appendix Table C.1

Effects on Tax Filing and Employment Outcomes from the 32-Month Survey

Outcome	Program Group	Control Group	Difference (Effect)	P-Value
Employed in year before interview (%)	86.3	83.3	3.0**	0.011
Currently employed (%)	65.0	64.9	0.1	0.968
Full time at primary job	35.3	35.6	-0.2	0.884
Part time at primary job	27.5	28.0	-0.5	0.728
Currently self-employed (%)	7.5	9.0	-1.5	0.115
Hourly wage at primary job, among those currently working ($)	*15*	*15*		
Hourly wage at primary job (%)				
$11 or less	22.7	24.0	-1.3	0.414
More than $11	34.9	33.8	1.1	0.517
Weekly earnings at primary job ($)	263	273	-10	0.405
Any benefits offered at primary job (%)	41.7	43.0	-1.3	0.430
Sick days with full pay	34.7	35.8	-1.1	0.494
Vacation days with full pay	30.8	32.0	-1.1	0.464
Health insurance plan	32.0	34.0	-2.0	0.199
Currently has small job[a] (%)	12.2	11.3	0.9	0.420
Not working because of disability (%)	*8.4*	*10.0*		
Filed tax return for the 2015 tax year (%)	77.2	70.0	7.2***	0.000
Taxes were prepared at a free tax preparation site (%)	48.6	22.9	25.7***	0.000
Applied for Earned Income Tax Credit (EITC) (%)	34.8	25.5	9.3***	0.000
Received tax refund in 2016, among those who filed tax return (%)	*80.8*	*80.2*		
Sample size (total = 3,289)	1,701	1,588		

SOURCE: Paycheck Plus 32-month survey data.

NOTES: Rounding may cause slight discrepancies in sums and differences.
Sample sizes may vary because of missing values.
A two-tailed t-test was applied to differences between the outcomes of the program and control groups. Statistical significance levels are indicated as: *** = 1 percent; ** = 5 percent; * = 10 percent.
Estimates were regression-adjusted using ordinary least squares, controlling for pre-random assignment characteristics of sample members.
[a]A small job is a side job such as babysitting or housekeeping.

Appendix Table C.2

32-Month Effects on Banking, Savings, and Debt

Outcome	Program Group	Control Group	Difference (Effect)	P-Value
Use of banking/financial services				
Currently has bank account (%)	58.0	54.7	3.3**	0.036
Family savings and debt				
Has savings (%)	28.8	27.3	1.5	0.332
Average savings ($)	519	429	90	0.140
Has debt (%)	61.7	60.8	0.8	0.607
Average debt ($)	10,230	10,190	40	0.953
Sample size (total = 3,289)	1,701	1,588		

SOURCE: Paycheck Plus 32-month survey data.

NOTES: Rounding may cause slight discrepancies in sums and differences.
Sample sizes may vary because of missing values.
A two-tailed t-test was applied to differences between the outcomes of the program and control groups. Statistical significance levels are indicated as: *** = 1 percent; ** = 5 percent; * = 10 percent.
Estimates were regression-adjusted using ordinary least squares, controlling for pre-random assignment characteristics of sample members.

Appendix Table C.3

32-Month Effects on Marital Status and Living Arrangements

Outcome	Program Group	Control Group	Difference (Effect)	P-Value
Marital status (%)				
Married	4.9	4.9	0.0	0.977
Living with a partner	10.6	13.3	-2.7**	0.016
Divorced, widowed, separated, or living apart from spouse	11.8	11.5	0.3	0.791
Single (never married)	72.8	70.3	2.4	0.118
Household count	2.1	2.2	-0.1**	0.045
Housing status (%)				
Rents or owns home	47.6	51.0	-3.4**	0.045
Lives with friends or relatives	40.6	37.1	3.5**	0.037
Lives in group shelter or homeless	4.5	3.6	0.9	0.183
Other household arrangements	7.4	8.3	-1.0	0.302
Lives in assisted housing (public assistance or Section 8) (%)	33.2	36.7	-3.5**	0.037
Moved since random assignment (%)	25.8	26.4	-0.6	0.679
Currently living in New York City (%)	95.5	96.4	-0.9	0.198
Sample size (total = 3,289)	1,701	1,588		

SOURCE: Paycheck Plus 32-month survey data.

NOTES: Rounding may cause slight discrepancies in sums and differences.
Sample sizes may vary because of missing values.
A two-tailed t-test was applied to differences between the outcomes of the program and control groups.
Statistical significance levels are indicated as: *** = 1 percent; ** = 5 percent; * = 10 percent.
Estimates were regression-adjusted using ordinary least squares, controlling for pre-random assignment characteristics of sample members.

Appendix Table C.4

32-Month Effects on Health and Health Coverage

Outcome	Program Group	Control Group	Difference (Effect)	P-Value
Physical health				
Fair or poor self-rated health (%)	21.6	21.7	-0.1	0.952
Has problems with mobility (%)	21.7	21.3	0.4	0.765
Has problems doing usual activities (%)	17.8	17.5	0.3	0.821
Has any severe health problems (%)	9.5	10.6	-1.1	0.285
Average body mass index (BMI)	28	28	0	0.338
BMI greater than or equal to 30 (obese) (%)	30.8	30.3	0.5	0.752
Mental health[a]				
Psychological distress, K6 score	11.1	11.4	-0.3*	0.076
Has depression or anxiety (%)	38.1	41.2	-3.1*	0.073
Self-reported happiness (%)				
Self-rated happiness				
Very happy	23.1	25.9	-2.8*	0.062
Pretty happy	51.8	49.3	2.5	0.151
Not too happy	25.2	24.9	0.3	0.836
Health coverage (%)				
Currently has any health coverage	79.4	78.7	0.7	0.633
Public	63.1	59.5	3.6**	0.034
Private	25.3	27.4	-2.0	0.182
Sample size (total = 3,289)	1,701	1,588		

SOURCE: Paycheck Plus 32-month survey data.

NOTES: Rounding may cause slight discrepancies in sums and differences.
Sample sizes may vary because of missing values.
A two-tailed t-test was applied to differences between the outcomes of the program and control groups. Statistical significance levels are indicated as: *** = 1 percent; ** = 5 percent; * = 10 percent.
Estimates were regression-adjusted using ordinary least squares, controlling for pre-random assignment characteristics of sample members.
[a]Based on the Composite International Diagnostic Interview, Short Form; Kessler et al. (2002).

Appendix D

The Embedded Employment Referral Test

By increasing the payoff to work, the Paycheck Plus bonus is expected to lead to an increase in employment rates. As noted in the main text of the report, however, the size of this effect is unclear and depends on how responsive individuals are to incentives. One concern with work incentives is that many people who want to respond to them may have difficulty doing so if they cannot find work. They may be especially likely to have trouble during economic downturns, but it can be challenging to find work even in better economic times, given changes in the economy that have reduced demand for less-skilled labor.

One question, then, is whether the addition of employment assistance to the offer of the bonus could lead to larger effects than the offer of the bonus alone. To test this idea, and with additional support from the Robin Hood Foundation, the project included an embedded randomized controlled trial. A subset of individuals assigned to the program group (offered the Paycheck Plus bonus) who also reported earnings less than $10,000 in the year before they entered the study were assigned at random to one of two groups: (1) an employment referral group, eligible to receive additional information about and referrals to employment services near them, or (2) a nonreferral group, not eligible to receive these services, although they could seek out employment assistance on their own. Both groups continued to be offered the Paycheck Plus bonus for three years. By comparing the outcomes of these two groups it is possible to test whether additional referral information on top of the bonus increases employment rates more than the bonus alone.

MDRC worked with Grant Associates, a well-known employment assistance provider in New York City, to design and implement the employment referral services. These referrals took place in the spring of 2014 in conjunction with an additional marketing effort conducted to encourage all program group members to visit Volunteer Income Tax Assistance (VITA) sites to hear again about Paycheck Plus. Employment referral group members who never visited or called VITA sites were provided employment assistance referrals by mail.

Grant Associates developed training materials and protocols for Paycheck Plus. For a participant in the employment referral group, a Paycheck Plus staff member was instructed to determine whether employment assistance was needed and whether the participant was already receiving services from an employment agency. The staff member then directed the participant to one of New York City's Workforce1 Career Centers, providing a referral ticket and a suggested time to visit. That participant was then called by a staff member at Grant Associates in the subsequent months to determine whether he or she had visited a Center, and to encourage him or her to do so if not.

Of the 1,063 individuals assigned to the employment referral group, about 480 visited VITA sites and received referrals and follow-up calls from Grant Associates. Observations by MDRC indicated that Paycheck Plus staff members delivered the referrals as designed. Many participants told these staff members about their employment goals, challenges, and plans. Some participants had not been aware of the employment services offered by the providers mentioned. Others had tried using such services before without success; of these, many agreed nevertheless to try using the services again.

Grant Associates reported making follow-up contact with 83 percent of these people over the subsequent several months, speaking with an individual more than once in about a third of the cases. Among the people called, 21 percent were employed, and 25 percent reported having visited a WorkForce1 Center. (Similar data were not collected for the group that was not assigned to receive the employment referral, so it cannot be known how many more members of the employment referral group received such services than members of the nonreferral group.) Staff members reported that in follow-up phone calls, many participants reported that they had forgotten about the information or were planning to visit a Workforce1 Center soon. Many others had not known of the providers in their areas and were planning to attend. Some participants also used the calls to request additional information about Paycheck Plus.

The remaining approximately 500 individuals in the employment referral group who did not visit VITA sites in the spring of 2014 were sent employment referral information by mail in September 2014. This group was also encouraged to go to Workforce1 Career Centers if they needed jobs, given a list of Centers, and directed to the Centers closest to them. They were also given the option to provide their phone numbers if they wanted Grant Associates to follow up with them to provide further assistance.

Thus, the employment services were minimal but did provide additional information about and encouragement to use existing workforce services. About half of the employment referral group received a personal message about the services, with the majority of that group receiving at least one follow-up call. The remaining half received a mailing about the services. Because the services were minimal and because only half of the employment referral group received the services in person, it was expected that the employment referral might increase employment rates, but only modestly.

References

Agan, Amanda Y., and Michael D. Makowsky. 2018. "The Minimum Wage, EITC, and Criminal Recidivism." Working Paper. Website: https://ssrn.com/abstract=3097203.

Bhargava, Saurabh, and Dayanand Manoli. 2015. "Psychological Frictions and the Incomplete Take-Up of Social Benefits: Evidence from an IRS Field Experiment." *American Economic Review* 105, 11: 3489-3529.

Bitler, Marianne P., Jonah B. Gelbach, and Hilary W. Hoynes. 2006. "What Mean Impacts Miss: Distributional Effects of Welfare Reform Experiments." *American Economic Review* 96, 4: 988-1012.

Bureau of Labor Statistics. 2018a. "May 2017 Metropolitan and Nonmetropolitan Area Occupational Employment and Wage Estimates: Atlanta-Sandy Springs-Roswell, GA." Website: www.bls.gov/oes/current/oes_12060.htm. Last modified March 30.

Bureau of Labor Statistics. 2018b. "May 2017 Metropolitan and Nonmetropolitan Area Occupational Employment and Wage Estimates: New York-Jersey City-White Plains, NY-NJ Metropolitan Division." Website: www.bls.gov/oes/current/oes_35614.htm. Last modified March 30.

Bureau of Labor Statistics. 2018c. "Occupational Outlook Handbook: Most New Jobs." Website: www.bls.gov/ooh/most-new-jobs.htm. Last modified April 13.

Case, Anne, Darren Lubotsky, and Christina Paxson. 2002. "Economic Status and Health in Childhood: The Origins of the Gradient." *American Economic Review* 92, 5: 1308-1334.

Chetty, Raj, John N. Friedman, and Emmanuel Saez. 2013. "Using Differences in Knowledge Across Neighborhoods to Uncover the Impacts of the EITC on Earnings." *American Economic Review* 103, 7: 2683-2721.

Chetty, Raj, and Emmanuel Saez. 2013. "Teaching the Tax Code: Earnings Responses to an Experiment with EITC Recipients." *American Economic Journal: Applied Economics* 5, 1: 1-31.

Chetty, Raj, Michael Stepner, Sarah Abraham, Shelby Lin, Benjamin Scuderi, Nicholas Turner, Augustin Bergeron, and David Cutler. 2016. "The Association Between Income and Life Expectancy in the United States, 2001-2014." *JAMA* 315, 16: 1750-1766.

Dechausay, Nadine, Caitlin Anzelone, and Leigh Reardon. 2015. *The Power of Prompts: Using Behavioral Insights to Encourage People to Participate*. New York: MDRC.

Dowd, Tim, and John B. Horowitz. 2011. "Income Mobility and the Earned Income Tax Credit: Short-Term Safety Net or Long-Term Income Support." *Public Finance Review* 39, 5: 619-652.

Economic Policy Institute. 2018a. "Employment-to-Population Ratio." *State of Working America Data Library.* Website: www.epi.org/data/#/?subject=epop&g=*&e=*.

Economic Policy Institute. 2018b. "Wages by Education." *State of Working America Data Library*. Website: www.epi.org/data/#?subject=wage-education&g=*.

Economic Policy Institute. 2018c. "Wages by Percentile." *State of Working America Data Library*. Website: www.epi.org/data/#?subject=wage-percentiles.

Eissa, Nada, and Hilary W. Hoynes. 2006. "Behavioral Responses to Taxes: The Earned Income Tax Credit and Labor Supply." *Tax Policy and the Economy* 20:73-110.

Eissa, Nada, and Jeffrey B. Liebman. 1996. "Labor Supply Response to the Earned Income Tax Credit." *Quarterly Journal of Economics* 111, 2: 605-637.

Evans, William N., and Craig L. Garthwaite. 2014. "Giving Mom a Break: The Impact of Higher EITC Payments on Maternal Health." *American Economic Journal: Economic Policy* 6, 2: 258-290.

Goodman-Bacon, Andrew, and Leslie McGranahan. 2008. "How Do EITC Recipients Spend Their Refunds?" *Economic Perspectives* 32, 2. Chicago: Federal Reserve Bank of Chicago. Website: www.chicagofed.org.

House, James S., Ronald C. Kessler, and A. Regula Herzog. 1990. "Age, Socioeconomic Status, and Health." *Milbank Quarterly* 68, 3: 383-411.

Hoynes, Hilary, and Ankur Patel. 2017. "Effective Policy for Reducing Inequality? The Earned Income Tax Credit and the Distribution of Income." *Journal of Human Resources*. doi: 10.3368/jhr.53.4.1115.7494R1.

Hoynes, Hilary, Jesse Rothstein, and Krista Ruffini. 2017. "Making Work Pay Better Through an Expanded Earned Income Tax Credit." Pages 57-69 in Diane Whitmore Schanzenbach and Ryan Nunn (eds.), *Driving Growth through Women's Economic Participation.* Washington, DC: The Hamilton Project, Brookings Institution.

Internal Revenue Service. 2018. "States and Local Governments with Earned Income Tax Credit." Website: www.irs.gov. Last updated May 3.

Jones, Maggie R. 2014. "Changes in EITC Eligibility and Participation, 2005-2009." Center for Administrative Records Research and Applications Working Paper #2014-04. Washington, DC: U.S. Census Bureau, Center for Administrative Records Research and Applications.

Kessler, Ronald C., Gavin Andrews, Lisa J. Colpe, Eva Hiripi, Daniel K. Mroczek, S-LT Normand, Ellen E. Walters, and Alan M. Zaslavsky. 2002. "Short Screening Scales to Monitor Population Prevalences and Trends in Non-Specific Psychological Distress." *Psychological Medicine* 32, 6: 959-976.

Marr, Chuck, Emily Horton, and Brendan Duke. 2017. "Brown-Khanna Proposal to Expand EITC Would Raise Incomes of 47 Million Working Households." Center on Budget and Policy Priorities. Website: www.cbpp.org.

McClelland, Robert, and Shannon Mok. 2012. "A Review of Recent Research on Labor Supply Elasticities." Working Paper 2012-12. Washington, DC: Congressional Budget Office.

Meyer, Bruce D., and Dan T. Rosenbaum. 2001. "Welfare, the Earned Income Tax Credit, and the Labor Supply of Single Mothers." *Quarterly Journal of Economics* 116, 3: 1063-1114.

Miller, Cynthia, Lawrence F. Katz, Gilda Azurdia, Adam Isen, and Caroline Schultz. 2017. *Expanding the Earned Income Tax Credit for Workers Without Dependent Children: Interim Findings from the Paycheck Plus Demonstration in New York City*. New York: MDRC.

Muennig, Peter, Nancy Sohler, and Bisundev Mahato. 2007. "Socioeconomic Status as an Independent Predictor of Physiological Biomarkers of Cardiovascular Disease: Evidence from NHANES." *Preventive Medicine* 45, 1: 35-40.

National Conference of State Legislatures. 2018. "State Minimum Wages: 2018 Minimum Wage by State." Website: www.ncsl.org/research/labor-and-employment/state-minimum-wage-chart.aspx#Table.

New York State Department of Labor. 2018. "Minimum Wage." Website: https://www.labor.ny.gov/workerprotection/laborstandards/workprot/minwage.shtm. Accessed July 19.

Nichols, Austin, and Jesse Rothstein. 2016. "The Earned Income Tax Credit." Pages 137-218 in Robert A. Moffitt (ed.), *The Economics of Means-Tested Transfer Programs in the United States*, vol. 1. Chicago: University of Chicago Press.

Office of Management and Budget. 2015. "The President's Budget for Fiscal Year 2016." Washington, DC: Office of Management and Budget.

Pencavel, John. 1986. "Labor Supply of Men: A Survey." Pages 3-102 in Orley Aschenfelter and Richard Layard (eds.), *Handbook of Labor Economics*, vol. 1. Amsterdam: Elsevier.

Raphael, Steven. 2011. "Improving Employment Prospects for Former Prison Inmates: Challenges and Policy." Pages 521-572 in Phillip J. Cook, Jens Ludwig, and Justin McCrary (eds.), *Controlling Crime: Strategies and Tradeoffs*. Chicago: University of Chicago Press.

Ryan, Paul. 2014. "Expanding Opportunity in America: A Discussion Draft from the House Budget Committee." Washington, DC: U.S. House of Representatives Budget Committee. Website: http://budget.house.gov/uploadedfiles/expanding_opportunity_in_america.pdf.

Sperling, Gene B. 2017. "A Tax Proposal That Could Lift Millions Out of Poverty." *The Atlantic* (October 17). Website: www.theatlantic.com.

Sykes, Jennifer, Katrin Križ, Kathryn Edin, and Sarah Halpern-Meekin. 2015. "Dignity and Dreams: What the Earned Income Tax Credit (EITC) Means to Low-Income Families." *American Sociological Review* 80, 2: 243-267.

Tax Policy Center. 2017. "EITC Parameters: 1975 to 2017." Urban Institute and Brookings Institution. Website: www.taxpolicycenter.org/statistics/eitc-parameters.

Wu, Chi Chi, and Chantal Hernandez. 2016. *Minefield of Risks: Taxpayers Face Perils from Unregulated Preparers, Lack of Fee Disclosure, and Tax-Time Financial Products*. Boston: National Consumer Law Center and Consumer Federation of America.

About MDRC

MDRC is a nonprofit, nonpartisan social and education policy research organization dedicated to learning what works to improve the well-being of low-income people. Through its research and the active communication of its findings, MDRC seeks to enhance the effectiveness of social and education policies and programs.

Founded in 1974 and located in New York; Oakland, California; Washington, DC; and Los Angeles, MDRC is best known for mounting rigorous, large-scale, real-world tests of new and existing policies and programs. Its projects are a mix of demonstrations (field tests of promising new program approaches) and evaluations of ongoing government and community initiatives. MDRC's staff members bring an unusual combination of research and organizational experience to their work, providing expertise on the latest in qualitative and quantitative methods and on program design, development, implementation, and management. MDRC seeks to learn not just whether a program is effective but also how and why the program's effects occur. In addition, it tries to place each project's findings in the broader context of related research — in order to build knowledge about what works across the social and education policy fields. MDRC's findings, lessons, and best practices are shared with a broad audience in the policy and practitioner community as well as with the general public and the media.

Over the years, MDRC has brought its unique approach to an ever-growing range of policy areas and target populations. Once known primarily for evaluations of state welfare-to-work programs, today MDRC is also studying public school reforms, employment programs for exprisoners, and programs to help low-income students succeed in college. MDRC's projects are organized into five areas:

- Promoting Family Well-Being and Children's Development
- Improving Public Education
- Raising Academic Achievement and Persistence in College
- Supporting Low-Wage Workers and Communities
- Overcoming Barriers to Employment

Working in almost every state, all of the nation's largest cities, and Canada and the United Kingdom, MDRC conducts its projects in partnership with national, state, and local governments, public school systems, community organizations, and numerous private philanthropies.