

# **The Impact of Electronic Payments for Vulnerable Consumers: Evidence from Social Security**

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## **ABSTRACT**

Vulnerable consumers may face barriers to using electronic payments, especially consumers in “unbanked” households where no member has an account to receive payments. In March 2013, the US Social Security Administration transitioned exclusively to electronic payments, representing a large shift in payment mode mandated at the federal level. This study identifies the size and characteristics of the population impacted by this shift, by linking administrative data on Social Security payments to a nationally representative survey on the use of bank accounts and financial services. We find that the majority of unbanked Social Security recipients took up electronic payments well before the March 2013 deadline. The mandate does not appear to have increased the use of bank accounts; instead recipients used electronic payment cards. However, the transition to electronic payments was slowest among the most financially vulnerable households, suggesting a focus on these households as payment methods continue to develop.

## **KEYWORDS**

Electronic payments, Social Security, unbanked, disability.

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## INTRODUCTION

Financial transactions are increasingly conducted using electronic payments rather than paper checks (GAO 2008; Schuh and Stavins 2012). Consumers have gradually adopted new instruments to both receive and send electronic payments, potentially helping them manage their money more effectively (Hogarth & Anguelov, 2004). Large-scale payers such as the federal government are especially motivated to adopt electronic payments, which lower their costs relative to printing and mailing paper checks. The US Department of the Treasury phased out paper checks for Social Security Administration (SSA) payments beginning in May 2011. At that time, all new payees had to receive electronic direct deposits. The 15 percent of SSA payees still receiving paper checks, representing over five million households, had 22 months to transition to electronic payments (Federal Register 2010).

This policy change disproportionately affected households at the intersection of two vulnerable consumer groups: households without a checking or savings account at a bank, and households receiving disability or means-tested payments. While the option of receiving electronic payments had long been available to these households if they were to open a bank account, they had resisted doing so. The new policy also included the introduction of a special payment card that could replace some of the functions of a bank account. The key question for consumer welfare within these groups is whether the benefits of electronic payments outweighed the costs of removing access to payments by paper check.

To address this question, this study measures the size of the unbanked SSA payment recipient population, as well as their characteristics and self-reported preferences before the policy change took place. We also observe revealed preferences through households' responses to the policy change. We do so by linking longitudinal administrative data on SSA payments to a nationally representative Current Population Survey supplement on the use of bank accounts and other financial services.

Prior studies imply that the impact of mandated electronic payments could be substantial. Several studies have estimated that a large fraction of paper check recipients lack bank accounts to receive payments, finding that 20 to 30 percent of people receiving checks for Old Age, Survivor, and Disability Insurance (OASDI), and 55 to 70 percent of people receiving checks for Supplemental Security Income (SSI), are not banked (Booz, Allen, & Hamilton and Shugoll Research 1997; Dove Associates, Inc. 1999; Federal Reserve Bank of St. Louis 2004;

KRC Research 2007). GAO (2002) found similar rates among electronic payment recipients. In addition, households receiving paper checks appear resistant to adopting electronic payment instruments, as evidenced by both survey responses and actual behavior (Booz, Allen, & Hamilton and Shugoll Research 1997; GAO 2002; KRC Research 2007).

In the current policy environment, we find that the impact was smaller than anticipated. Using more recent data, we find that households receiving SSA payments are unbanked at the same rate as households not receiving SSA payments, at approximately six percent of households. We find that three fourths of SSA recipient households who were unbanked in January 2009 had taken up electronic payments by December 2011, more than a year before the final deadline of March 2013. This represents a large voluntary shift toward electronic payments by consumers who had previously predominantly used paper checks.

However, economically vulnerable households are concentrated among the unbanked and are slowest to adopt electronic payments. We focus on two measures of economic vulnerability specific to the SSA population: disability payment recipients who may also face physical or cognitive barriers to using financial services, and means-tested benefit recipients who have low levels of assets. Households receiving means-tested benefits appear to warrant the most attention when considering policy changes that affect payment modes and financial services. Overall, we find no evidence that this policy change increased the use of bank accounts, or decreased the use of alternative financial services among impacted households.

This paper begins by describing the transition to electronic Social Security payments and suggesting a series of hypotheses about how it could impact consumers. We next discuss how financial services are defined and measured, and how our approach and findings compare to prior work. Returning to the electronic payments mandate, we describe take-up of electronic payments, and conclude with a discussion of broader impacts of the mandate, and our findings' implications for research and policy.

## ELECTRONIC SOCIAL SECURITY PAYMENTS

### Social Security Payments to the Unbanked

The majority of SSA payments go to retirement beneficiaries receiving OASDI. These households have paid into the system for at least 40 quarters, and therefore have a substantial work history. Most of these beneficiaries are banked, and many have other sources of income besides the SSA payment. However, fully a quarter of the households receiving SSA payments

qualify because of a disability. Half of these are Disability Insurance (DI) beneficiaries who may have once had a substantial work history but are now prevented from working by a long-term health condition.<sup>1</sup> DI beneficiaries may receive income from other sources, such as family members, or have the ability to draw down financial assets to meet current needs. The other half of SSA payment recipients with disabilities are part of the Supplemental Security Income (SSI) program. SSI is a means-tested program for people with disabilities, and for the parents of children with disabilities. SSI recipients generally have little to no work history, and they tend to have very low levels of income and assets.<sup>2</sup>

Although a bank account can lower the cost of receiving and storing government income support payments, not all recipients choose to open an account. While some consumers do not trust banks, “do not have enough money” is the leading reason for not using a bank account in many surveys of the unbanked, including among SSA recipients (Booz, Allen, & Hamilton and Shugoll Research 1997; Bricker et al. 2012, 2014; FDIC 2009, 2012, 2014). The cost of an account includes time for accessing and managing it, and for these poorer households especially, accounts carry the risk of fees for maintenance, low-balances, and overdrafts. Unbanked households may still spend a large portion of their income on fees and transaction costs for sending and receiving payments through non-bank providers, adding to their economic distress (Barr 2002, 2004; Rhine, Greene, and Toussaint-Comeau 2006).

Programs to enroll US government benefits recipients into bank accounts have generally shown a low voluntary take-up rate (Doyle, Lopez, and Saidenberg 1998; Beverly et al. 2002; Beverly, Tescher, and Romich 2004; Ratcliffe and McKernan 2012). However in the United Kingdom, a mandated shift to paying child benefits electronically increased bank use where other policies to bank the unbanked had been less successful (Fitzpatrick 2015a, 2015b). The policy also had positive side effects. It created simple bank accounts, and users demonstrated increases in saving, use of credit cards, and purchases of durable goods

#### Benefits and Costs of Mandated Electronic Payments

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1. More specifically, disability is defined by SSA as preventing employment above a level known as substantial gainful activity, defined at [www.ssa.gov/oact/cola/sga.html](http://www.ssa.gov/oact/cola/sga.html).

2. In-kind support and maintenance are counted as part of means-testing for SSI.

Effective February 22, 2011, the US Department of the Treasury (hereafter Treasury) amended Rule 31 Part 208 in its Code of Federal Regulations to require that all federal non-tax-related payments be made electronically by March 1, 2013. This was the most far-reaching in a series of measures implementing the Debt Collection Improvement Act of 1996. As discussed by Washington (2006), this action was partially motivated by a policy goal of encouraging broader bank account use. While the final rulemaking announcement in the Federal Register (2010) does discuss the benefits of increasing financial capacity through banking, the primary focus is on the benefits for Treasury in terms of the public costs of administration.

The move to electronic SSA payments was the core of a larger Treasury initiative to “go green, save green,” including paperless savings bonds, tax filings, and government payments (Treasury 2010; OMB 2011). Checks for SSA payments accounted for more than 92 percent of all benefit check payments sent from Treasury in fiscal 2010 (Federal Register 2010).<sup>3</sup> Net of what it would cost to send the payments electronically, Treasury spent an extra \$117 million printing and mailing 130 million checks to SSA payees in fiscal 2010, an expenditure which was projected to grow as more baby boomers entered the retirement system (Federal Register 2010).<sup>4</sup> Delivering these payments electronically was also predicted to lower the incidence of fraud and waste, as was the case when food assistance programs transitioned to electronic payments (GAO 2008).

Federal Register (2010) also discussed the potential costs that the new rule imposes on payees. The total cost depends on the difficulty of the transition for the 15 percent of payees still receiving paper checks. Recipients in households with transaction accounts could direct payments to an existing bank account or payment card by filling out a paper or online form. SSA recipients over age 90 were automatically exempted from the requirement to use an electronic payment. Recipients with a mental impairment or in a remote location could apply for an exemption, but they had to complete a written, notarized certification (Federal Register 2010).

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3. Other benefit checks include civil service retirement, railroad retirement, Black Lung benefits, and Veterans benefits. Non-benefit Treasury payments include salaries, vendor payments, and tax refunds.

4. A check payment was estimated to cost the federal government \$1.05, versus \$0.09 for an electronic payment (Gregg 2012). Electronic payments save the government \$205 per person for a typical retiree (Kuttner 2011).

Recipients in households without an account potentially faced the largest transition, needing to open an account and set up the payment. Many unbanked households cashed paper checks affordably, but did not have a means of receiving electronic payments (Prescott and Tatar 1999; KRC Research 2007).

Surveys of unbanked SSA payment recipients have shown that they may value electronic payment accounts. Some recipients were interested in payment cards because of the value in immediately and securely receiving funds, while others also desired savings features (Dove Associates, Inc. 1999; KRC Research 2007). In one pilot of electronic payments for federal income tax refunds, consumers preferred low fees over other features such as savings mechanisms (Ratcliffe and McKernan 2012).

To help with payments to unbanked households, in June 2008 Treasury introduced the Direct Express Debit MasterCard ® (hereafter Direct Express), a general purpose reloadable debit card. The card represented a new type of transaction account, directly provided by the government through a contracted financial services provider.<sup>5</sup>

#### The Direct Express Card

Direct Express was designed with features tailored to SSA payment recipients. Direct Express can be used at point of sale at retail locations, online, and for automated payments for certain rents and utilities. Users can make one no-fee ATM withdrawal per payment (typically monthly), but additional ATM withdrawals incur fees. Users can also use the card for cash-back debit transactions at retailers with no fee. Only federal benefits can be added to the Direct Express card.<sup>6</sup> The card includes low balance reminders and other features common for reloadable payment cards, but no savings features.

Direct Express compares favorably with ideal standards for payment cards put forth by CFSI (2012). The card provides an insured, safe place to store funds; it is widely accepted;

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5. Comerica Bank was selected through a procurement process. Payments were renegotiated as described in OIG (2014) to include \$5 per Direct Express account opened, and other lump sum payments. Thus, Direct Express was costlier to the government than people opening accounts on their own.

Another existing non-bank option for receiving direct deposits was the Electronic Transfer Account or ETA. Federal Register (2010) notes that “the ETA is not available on a nationwide basis and does not include some of the more useful features that have become available with prepaid debit cards in recent years (thus making the Direct Express card a more cost-effective and useful option in most cases).”

6. For more details, see [www.USDirectExpress.com](http://www.USDirectExpress.com).

includes customer support; it does not allow overdrafts and therefore has no overdraft fees; it has clear and affordable pricing; it promotes inclusion by operating just like other branded cards for a wide range of payments; the card is available to all SSA payment recipients regardless of checking or credit history; and funds are protected from improper garnishment by private creditors (Federal Register 2013).

The effect of Direct Express on total fees paid could vary among individual recipients. Direct Express fees were estimated to range from \$0 to \$18.48 per month under varying scenarios (Federal Register 2010). By comparison, unbanked payees responding to a survey in KRC Research (2007) reported paying an average of six dollars to cash a benefit check, with more than one-third paying nothing and four percent paying more than 15 dollars.

The predictability of pay dates for electronic payments, relative to the variation due to mailing times, may be valued by consumers. Leary and Wang (2016) found that the timing of payments from SSA was not fully anticipated by recipients and was therefore associated with increased use of payday loans. To the extent that electronic payments are well-defined and routinized, consumers may be better able to predict precisely when funds will be available. Early adopters of the Direct Express card reported being satisfied (KRC Research 2009).

This study uses stated preferences, as well as observations of actual take-up of electronic payments and use of financial services, to analyze the impact of electronic payments on consumer welfare. We also provide new estimates of the size of the unbanked SSA recipient population, in a large national sample that allows us to identify vulnerable subgroups.

## DATA AND METHODS

Measuring banking rates among SSA payment recipients is complicated by their varying backgrounds, and the difficulty of accurately capturing payment receipt in household surveys. In 2002, the US General Accounting Office (GAO 2002) used the Survey of Income and Program Participation (SIPP) to estimate that 23 percent of DI payment recipients and 67 percent of SSI payment recipients were unbanked, higher percentages than in the general population. This measurement strategy is biased, however, since payments from SSA were underreported by respondents in the SIPP sample (Huynh, Rupp, and Sears 2002).

Several studies have drawn samples of SSA paper check recipients from administrative records (Booz, Allen, & Hamilton and Shugoll Research 1997; Dove Associates, Inc. 1999; Federal Reserve Bank of St. Louis 2004; KRC Research 2007). These studies found that 20 to

30 percent of OASDI paper check recipients are unbanked, and 55 to 70 percent of SSI paper check recipients are unbanked. However, these studies are dated and tended to be based on small or self-selected samples. Therefore, these data may not be appropriate representations of the SSA recipient population leading up to May 2011. These studies do raise concerns that SSA payment recipients, particularly recipients of SSI payments, may struggle with banking and banking access.

This study overcomes the challenges of underreported payments and small samples by identifying SSA payees in administrative data who also appear in a nationally representative survey.

The FDIC National Survey of Unbanked and Underbanked Households (hereafter FDIC survey) was conducted in January 2009. These records were matched to administrative records of SSA payments, drawn in December 2011. These data allow for cross-tabulations by banking, reasons for being unbanked, government payment receipt, demographics, and alternative financial service use in January 2009, which we then used to predict the mode of payment used in December 2011.

The Current Population Survey (CPS) bridges the two data sets. The CPS creates a nationally representative sample of the civilian, non-institutionalized US population by surveying a rolling panel of home addresses each month. The FDIC survey was fielded as a supplement to the January 2009 CPS, and administrative data from the SSA and Census Bureau can be matched to the March CPS, an expanded survey known as the Annual Social and Economic Supplement (ASEC). The rolling design of the CPS means that half of the home addresses in the CPS sample during January 2009 are also included in the CPS sample during March 2009.<sup>7</sup> We take advantage of this overlap to match a sample of 20,250 households (see the Data Appendix for details).

Our unit of analysis is the household, following the FDIC survey design.<sup>8</sup> All FDIC questions were answered by a householder or reference person on behalf of everyone living at

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7. The second and third FDIC surveys were fielded in the June 2011 and 2013 CPS, leaving only a one-quarter overlap with each year's March ASEC.

8. All findings are qualitatively the same at the person level. For a few demographic measures from the CPS, we represent the household using only the householder's characteristics. For all other demographics and administrative measures, we aggregate across all household members.



that address. Therefore “unbanked” households are those whose householder reported in January 2009 that no household member held a checking or savings account at a financial institution (including credit unions, although bank is used as a general term).

The full FDIC sample shows that 7.7 percent of households are unbanked. Similar levels appear in the Survey of Consumer Finances (SCF). Among SCF respondents, 7.5 percent of families (comparable to Census Bureau households) were unbanked in 2010 (Bricker et al. 2012). We understate the size of the unbanked population in our matched analysis sample, at 6.2 percent of households. In part this is because our match requires a household to stay at the same home address for two months; unbanked households may be more mobile and thus fail to match. Relatedly, households may be more likely to be temporarily unbanked just before moving. (FDIC 2014). Within SSA recipients, our sample may understate access to bank accounts among the unbanked population, as a small fraction of unbanked payment recipients use representative payees outside of their households.<sup>9</sup> These representatives handle recipients’ checks for them and could make payments on their behalf using a bank account, but would not qualify them as banked by the FDIC definition.

## THE PREVALENCE AND CHARACTERISTICS OF UNBANKED HOUSEHOLDS

### General Population

Economically vulnerable consumers are overrepresented among the unbanked (Bucks, Kennickell, and Moore 2006; Rhine and Greene 2006; Washington 2006; IRS 2007; Applied Research and Consulting 2009; Bucks et al. 2009; Bricker et al. 2012, 2014; Rhine and Greene 2013). The patterns in Table 1, based on the general population, are consistent with prior studies. All differences we report are statistically significant at the five percent level, except when noted. We calculate standard errors using the successive difference replicate weights created for the FDIC supplement.

[Insert Table 1 here]

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9. While only 3 percent of OASDI payment recipients have a representative payee, nearly 30 percent of SSI payment recipients do (Anguelov, Ravida, and Weathers II 2015). However, for the non-institutional population that is sampled by the CPS, nearly all representative payees are family members (most commonly parents, see Tables 1 and 2 in Anguelov, Ravida, and Weathers II 2015). Whether of those family members reside within the household is unknown.

Non-metropolitan households are significantly more likely to be unbanked, but not by a large magnitude. Householders are more likely to be unbanked if they are under age 39, are the only adult, belong to racial and ethnic minority groups, or have less than a high school education. In our demographic breakdowns, generally the smaller the size of the characteristic group, the larger the percentage of that group that is unbanked. Thus, the unbanked population is small in number, but represents a meaningful proportion of certain vulnerable subgroups.

The next two comparisons examine the survey-reported disability status of households. In our sample, 19.8 percent of households contain some adult with difficulty doing daily activities like dressing, bathing, and doing errands, or severe difficulty hearing or seeing. A smaller fraction of households, 16.9 percent, contain an adult whose disability prevents work. In both cases, disability is associated with around twice as high a likelihood of being unbanked.

The group with the highest likelihood of being unbanked is households with members who received means-tested benefits sometime during 2008. About one in five of these households is unbanked. Means-tested benefits include Temporary Assistance for Needy Families and similar public assistance transfers, the Supplemental Nutrition Assistance Program, Medicaid, and SSI. Most of these means-tested programs offer electronic options, including electronic benefits transfer cards. A large majority of means-tested households appear to conduct enough transactions to make a bank account useful.

In January 2009, 31.7 percent of all households in the survey received a payment from SSA. SSA payees are a mix of older, more financially stable retirees and younger people with disabilities, so the rates of being unbanked vary by age. Importantly, we show that the overall rate of being unbanked among SSA recipient households is not statistically different from that of the overall population.

#### Social Security Payment Recipients

We observe roughly the same rates of being unbanked in subgroups of the SSA population as in the same subgroups of the general population, even though the frequencies of age and disability subgroups differ.

One exception is the much higher rate of being unbanked among recipient households with householders under age 39, which likely has to do with the challenging economic circumstances of younger-headed households with SSA payment recipients. Most of these

households include a working-age adult who receives a disability payment because they cannot work. Over a quarter of these households receive an SSI payment for a child with a disability (these benefits are means-tested), and the remainder receive a payment for a retired parent of the householder living in the household (which could be SSI, and SSI payments for the elderly are also means-tested). Unbanked status means that no member of the household has a bank account for these recipients to use.

To compare with prior studies, we disaggregate by SSI status within recipient households. We also find SSI recipients much more likely to be unbanked. However, our estimates of the proportion unbanked for each group are much lower overall than in prior studies. Our estimates of 3.3 percent unbanked for OASDI only and 27.4 percent for SSI only are far below the GAO (2002) estimates of 23 percent for all OASDI and 67 percent for all SSI.<sup>10</sup> We attribute the difference mainly to the use of a more recent and representative sample of SSA payees identified by administrative records.

Within SSA recipient households, we use an administrative analogue to the survey measure of disability: receipt of DI or SSI for a disability. This measure of disability comes from the SSA process, determining that an individual suffers from a health impairment expected to last a year or more or result in death, and which prevents certain work. It is a more stringent measure than survey reports of health limitations: only 36.1 percent of all households who report having an adult with a work-limiting disability actually receive a disability payment from SSA.<sup>11</sup> About 16.1 of SSA recipients with disabilities are unbanked, five times the rate for non-disability SSA recipients.

## ALTERNATIVE FINANCIAL SERVICES USE

### General Population

Alternative financial services (AFS) are services provided by institutions other than banks, and include check cashing, money orders, payment cards, and non-bank borrowing through payday lending, pawn shops, rent-to-own, and tax refund anticipation loans.

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10. SSA commonly uses the term “concurrent” to refer to a person that receives both OASDI and SSI payments; here, we also include households that receive both kinds of payments for different household members. We find 23.1 percent for concurrent (both OASDI and SSI) recipients are unbanked.

11. The CPS has no measure of childhood disability. See Burkhauser, Houtenville, and Tenant (2011) for a full discussion of CPS measures of disability.

Unbanked households report using AFS at two to three times the rate of banked households, as shown in Table 2. However many banked households do use AFS to supplement services available at banks, and many unbanked households recently had a bank account or intend to open one in the near future.

[Insert Table 2 here]

#### Social Security Payment Recipients

Compared to the general population, the SSA recipient population has the same rate of bank use (see Table 1), but has somewhat lower usage rates of AFS (as seen in the third and fourth result rows in Table 2 comparing recipients to non-recipients). This disparity becomes more pronounced when we restrict to only the unbanked: unbanked SSA recipients use AFS significantly less than unbanked non-recipient households (compare AFS use by unbanked SSA recipients on the eleventh row of Table 2 to AFS use by all unbanked households on the second row). One explanation is that unbanked SSA payment recipients have steady incomes, perhaps obviating the need for AFS. However, unbanked SSA recipients are also less likely to have used bank accounts before, suggesting a lack of connection to all sorts of financial services.

Within the SSA recipient population, the gaps in AFS use are larger between means-tested and disability payment recipients versus other recipients, than the gaps in AFS use between unbanked versus banked recipients. For example, households receiving disability payments, versus all other recipient households, are 18.9 percentage points more likely to have used non-bank borrowing. For SSI recipients versus OASDI-only recipients, the difference is 20.7 percentage points. The same figure for unbanked households versus all others is just 13.9 percentage points.

The likelihood of having used a non-bank payment card among banked SSA recipient households is just 9.2 percent and 12.9 percent for unbanked recipient households (not a statistically significant difference). Unbanked SSA recipient households' prior experience with being banked is much higher than their experience with payment cards; 47.3 percent of them having previously had a bank account. Overall, it appears that requiring unbanked households to receive electronic payments required them to take up either a payment card or a bank account, which most of them had not chosen to do on their own previously.

### THE IMPACT OF ELECTRONIC PAYMENTS

#### Preferences for Payment Instruments

The matched FDIC survey and SSA administrative data reveal the preferences of SSA payment recipients who had to transition to electronic payments, in the form of questions about households' main reason for being unbanked. We use the information on reported preferences to predict consumers' likely reaction to the combination of mandated electronic payments, and to predict their reaction to the introduction of Direct Express as a way to comply with the mandate. This analysis is parallel to the categorization of preferences of the unbanked by Hogarth, Anguelov, and Lee (2004, 2005) as well as by Fitzpatrick (2016) using the FDIC survey.

We divide the unbanked into three groups (see the Data Appendix for details). The first group's preferences do not align with electronic payments. Their list of reasons indicates that these consumers are categorically against banks, for example, "I do not trust banks." Related to the electronic payment mandate, this could mean these consumers are also averse to bank-like products such as a branded debit card issued by a financial institution.

The second group has ambiguous preferences with respect to the policy change. Their list of reasons for being unbanked is mostly related to mismatch between consumer behavior and account offerings, such as account mismanagement resulting in high fees, or language barriers. The specific fee structure of the Direct Express card may or may not help these consumers. This group also includes missing and write-in responses.

The third group's preferences align with electronic payments, even though they are currently unbanked. Their list of reasons includes being unable to access bank accounts because of bad credit or prior involuntary loss of accounts. These problems could be helped by access to Direct Express. This group also includes households who are planning to open an account soon, which should make them amenable to electronic payments.

The three preference groups are shown in Table 2. The first group, which may be resistant, comprises 13.1 percent of unbanked payment recipient households. The second group, consumers with ambiguous effects, is the largest group, comprising 64.2 percent of unbanked payment recipients. The third group, likely to benefit, comprises 22.7 percent of unbanked payment recipient households.

Therefore, the upper bound on the percentage of unbanked households potentially resistant to electronic payments based on expressed preferences is 77.3 percent (the most

resistant group plus the ambiguous group). The lower bound is just 13.1 percent (the most resistant group only).

For each preference grouping, Table 2 shows usage rates for non-bank financial services and prior use of bank accounts. The possibly-helped group is by far the most likely to have been banked previously (70.1 percent). The possibly-helped group is also more likely to have used non-bank check cashing and money order services than the ambiguous group; however, this is also true of the possibly-hurt group. Where the possibly-hurt group differs from the other two groups is in the use of check cashing services. In the cases of payment cards and non-bank borrowing, we cannot detect significant differences in usage rates among these small subdivisions of unbanked SSA payee households. The possibly-hurt group appears to be the least experienced with payment cards.

All of this points to the possibly-helped group being temporarily away from banking, familiar with many financial instruments, and receptive to instruments that feature low-cost and immediate delivery. It also points to the possibly-hurt group being reliant on non-bank financial services, especially check cashing, which can be costly. This context suggests that the SSA payee population on the whole may have benefited from the SSA transition to electronic payments.

#### Take-up of Electronic Payments

Prior research indicates that inertia can be a powerful force in making financial decisions (Madrian and Shea 2000). Given this, we would expect many paper check recipients to resist the change to electronic payments even if they could benefit from them. Early take-up is therefore an indicator of a favorable cost-benefit ratio for electronic payments.

Focusing on new Direct Express accounts as an indicator of change, Figure 1 shows take-up of Direct Express starting in October 2008.<sup>12</sup> New enrollments slowly but steadily rose over a period of two years, then sharply rose in May 2011, when the Direct Express card became mandatory for newly enrolled payment recipients. The highest peak of entry appears in February 2013, the last month for existing payees to switch to direct deposit in compliance

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12. This is the earliest month of data available after Treasury began offering the Direct Express card in June 2008. The data come from the Treasury Financial Management Service.

with the Treasury mandate. This late surge is consistent with inertia slowing take-up for some households.

[Insert Figure 1 here]

Our data also allow us to measure electronic payments to the unbanked during the phase-out period, giving a picture of the change in use of electronic payments within a group of households. We are limited to observing banking status in January 2009, and observing electronic versus paper check status as of December 2011.<sup>13</sup> Though they reported being unbanked in January 2009, some households could have already been receiving electronic payments to payment cards or instruments outside their household at that time. However, the prevalence of electronic payments to unbanked households in January 2009 was probably very low.<sup>14</sup>

The last column of Table 2 shows the use of electronic payments. More than three quarters of the unbanked were receiving electronic payments by December 2011. The fact that a large majority adopted electronic payments voluntarily suggests that the costs of adoption were generally small.

Comparing across SSA programs, SSI and DI payment groups again stand out as the least connected to mainstream financial products, with lower rates of voluntary receipt of electronic payments. Retirees and banked households achieved the highest rates of early take-up, around 95 percent. By March 2016, three years after the final deadline, the percent of payments made electronically had reached 98 percent (Bureau of the Fiscal Service 2016).

Compared to the ambiguous preference group, the group averse to banks had a surprisingly higher rate of take-up of electronic payments. This pairwise comparison is marginally statistically significant. This suggests that electronic payment formats, and the Direct Express card in particular, may have succeeded in offering financial services that are

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13. For this measure we restrict the sample to payees that are still receiving a payment in December 2011. This excludes about 10 percent of the January 2009 payee households that left SSA programs before December 2011 for various reasons, most commonly death among retirement beneficiaries. Others may have returned to work or lost financial eligibility. Alternatively, using the sample of January 2009 payees and measuring the method of payment for the last observed payment yields similar results, though take-up is slightly lower across all categories.

14. As indicated above, the rate of enrollment in Direct Express indicates that it did not have widespread use at that time, and data on representative payees indicate that only a small percentage of payments used one outside the family.

attractive to unbanked households, even those who say they do not feel comfortable with banks.

The group that may have benefited also has a larger take-up rate of electronic formats than the ambiguous group, but the difference is not statistically significant. Recall that the likely-to-benefit group also had higher rates of AFS use. This is compatible with a narrative that these households used AFS while they had limited access to transaction accounts at banks and then, perhaps as a result, were interested in taking up Direct Express or a bank account to replace AFS products.

#### Factors that Predict Take-up of Electronic Payments

To better understand which factors are most important in predicting the likelihood of early take-up of electronic payments, we estimate a logistic regression including indicators for demographics, payment type, use of alternative financial services, banking, and banking preferences. All of these are measured as of January 2009 among SSA payees. Estimated odds ratios appear in Table 3, for all SSA payees and for unbanked SSA payees.

[Insert Table 3 here]

Among all SSA payees, demographics are strongly predictive of take-up, with white, metropolitan, and high-school educated households more likely to be receiving electronic payments. Older-headed households are more likely to receive electronic payments than the excluded middle age category, which does not significantly differ from the younger category. Among unbanked payees, similar trends hold in the point estimates.

Being unbanked is associated with much lower take-up of electronic payments, while AFS use does not have a clear association with take-up. There is a positive but not significant estimate of higher take-up among previous users of payment cards. For the group of unbanked recipients, there are no significant differences in take-up by banking preferences or banking history. As in Table 2, point estimates suggest that electronic payments were taken up in high numbers by those who were averse to using banks.

Conditional on demographics and financial services use, the type of payment is strongly predictive of take-up. Receiving a disability payment is associated with an increased likelihood of early take-up, particularly among the unbanked, with an odds ratio of more than three. But receiving means-tested SSI offsets this increase with a much lower probability of take-up: the



odds ratio is around 0.3 both for all recipients and for unbanked recipients.<sup>15</sup> SSI recipients have the lowest levels of financial resources, and are the least likely to voluntarily receive electronic payments.

### Time Trends

SSA payees represent one third of unbanked households. A side effect of the policy of requiring electronic payments is to promote transactional products. If this leads to SSA recipient households opening traditional bank accounts, it could shrink the unbanked population by up to one third. In FDIC (2014) the most common reason that recently banked households in the general population give for opening a new account, at 34.2 percent, was the desire to receive direct deposits.

To assess changes in the use of financial products among SSA recipients, we can repeat the strategy described above to match SSA payment status from subgroups of the 2011 and 2013 March CPS to their financial product use in the June 2011 and June 2013 FDIC surveys.<sup>16</sup> Results of this exercise appear in Figure 2.

[Insert Figure 2 here]

We find very slight decreases in the percent of OASDI payees that are unbanked over a four-year period, with no statistical difference between the percent unbanked in 2009 versus in 2013. SSI payees go from 28 percent unbanked in 2009 to 21 percent unbanked in 2013, but because of their small number, this difference is not statistically significant.

Similarly, we find that overall AFS use among SSA payees has changed only slightly (not shown). Disaggregating by individual financial services, non-bank money order use is clearly declining while non-bank credit use appears to have slightly increased over all groups.

Many other changes occurred over this time period, making this analysis only descriptive of time trends and not allowing us to infer the causal effect of the policy change on bank account or AFS use. Overall, mandated electronic payments appear not to have brought about fundamental changes in use of financial products by SSA payee households as a whole,

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15. Results are similar when using survey responses (instead of SSA payments) to identify households where members have disabilities or receive means-tested support.

16. Comparing CPS measurement of SSA payment receipt against the more accurate administrative measure of payment receipt, we find payments go underreported for 3.7 percent of all households, and overreported for 2.6 percent of all households.

and therefore have not played a significant role in decreasing the number of unbanked households nationwide.

## CONCLUSION

This study uses a large, national data set to describe the population at the intersection of SSA payments and lack of bank accounts, with a focus on the effects of mandated electronic payments. We conclude that the cost imposed by the electronic payment mandate was limited, in part because we find the unbanked payment recipient population to be relatively small overall. Although the majority of the unbanked lacked experience with payment cards and lacked recent experience with bank accounts, more than three fourths of the unbanked were able to gain access to either a payment card or a bank account prior to the enforcement of the mandate. The shift away from paper checks toward electronic payments did not clearly increase banking, as in the case of the United Kingdom's shift to paying benefits to simple bank accounts, though it certainly increased the use of the Direct Express card product.

Policymakers could consider alternative approaches to the current focus on Direct Express cards. First, Treasury could set a standard protocol for provision of SSA payment cards rather than contracting with one provider. CFSI (2013) describes innovations that could result from competition among providers, such as combining the account that receives SSA payments with a savings account or with other government benefit accounts.

Second, regardless of the financial agent providing the payment card, Treasury and SSA could explore whether payments could be delivered on a different payment schedule that might benefit consumers. In particular, less expensive electronic payments could be delivered more frequently. In the context of the Earned Income Tax Credit and Supplemental Nutrition Assistance Program, research has shown that more frequent delivery of benefits may support consumption smoothing (Bellisle and Marzahl 2015; Damon, King, and Leibtag 2013). Household consumption appears to also respond to the monthly cycle of payments from SSA, and this may have associations with health and other outcomes (Stephens Jr. 2003; Dinour, Bergen, and Yeh 2007; Evans and Moore 2011; Leary and Wang 2016). These studies, in conjunction with our results showing that adoption of electronic payment formats alone does not necessarily lead to reduced use of AFS, may point to payment timing as an important area for future consumer and policy research.

Even under the current structure of electronic payments, unbanked former paper check recipients may now be more likely to smooth consumption over the month. Direct deposit gives users a way to avoid a lump sum of cash, possibly making spending less urgent. Beverly, Tescher, and Romich (2004) note that people who chose to save their tax refunds in bank accounts said that it helped them spend more slowly and thoughtfully. Hogarth and Anguelov (2004) find that households who choose to use electronic banking products also tend to be better financial managers.

Transaction-level data from payment cards is the best way to investigate this issue (Cole, Thompson, and Tufano 2008; Rhine et al. 2007; Wilshusen et al. 2012). Direct Express charges a fee for more than one ATM transaction per payment, which seems to encourage treating the payment like a check to be cashed (though users can use the card for debit transactions with cash back). Another policy option would be to allow more ATM withdrawals or to more aggressively educate users on how to spread out transactions while encouraging users to maintain funds on the card. This could coincide with online reminders and budgeting tools.

While our findings are consistent with a relatively smooth transition for the vast majority of SSA recipients, some groups stand out. Among unbanked households, those receiving a disability payment took up electronic payments at higher rates, while those receiving means-tested SSI payments had lower rates. Although both groups experience disproportionately high economic vulnerability as measured by rates of poverty, use of AFS, and being unbanked, the available electronic payment options appear to be more suited to unbanked households receiving disability payments than those receiving means-tested payments. This may help to focus future research on vulnerable subgroups.

Finally, this study underscores the importance of supplementing nationally-representative surveys with administrative program information when possible, to increase accuracy for developing policy evaluations and guidance. Whenever possible, administrative data items should be stored as a panel with multiple observations per individual, as is the case for SSA payments but not for payment mode. Still, the insights developed in this process would not have been possible without cooperation across federal agencies with relevant data.

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## DATA APPENDIX

### Data Matching Process: January CPS to March ASEC to Administrative Data

A cohort of home addresses enters the Current Population Survey (CPS) each month and remains in the sample for four months, then exits for eight months, then re-enters for four months. We begin with households in the four-month-in-sample groups of the January 2009 Basic Monthly CPS whose householders could potentially respond to both the FDIC survey and the March 2009 Annual Social and Economic Supplement (ASEC): households who were in their first, second, fifth, or sixth month in sample in January 2009. This subset of month-in-sample groups is still sampled to be representative of the CPS universe (CPS 2006). In practice, non-sampling error varies slightly across month-in-sample groups, mainly due to different modes of interview in the first and fifth months compared to other months, which lead to different rates of non-response (CPS 2006).

We match persons in the January FDIC survey to persons in the March ASEC using an adaptation of the algorithm provided by Madrian and Lefgren (1999). We first match on CPS identification numbers, then verify unique matches using each respondent's sex, race, age, and education. Some persons surveyed in January are no longer surveyed in March because they have died, left their household, or because their household has moved to a new home address. Others are lost to simple non-response or recording errors.

The Bureau of the Census provides links for matching persons in the March ASEC to administrative data based on address, earnings, and demographic information from tax returns in that year and other administrative sources. The Bureau only does this for ASEC respondents whose householders did not opt out of administrative data linkage. The vast majority of householders do not opt out of administrative data linkage.

We exclude households where the householder does not survive both matching steps. In our final sample, 6.9 percent of households lost at least one of their adult members to a combination of actually leaving the household and to missed matches (we cannot distinguish between the two). As a result, some household measures intended to represent the January 2009 members, such as "any unemployed adult," will be biased downwards in these households.

About 86 percent of the householders responding to the January 2009 CPS also responded to the FDIC survey. The supplemental response rates vary slightly across



demographic groups (FDIC 2009). We correct for sample coverage using the FDIC survey household weights in all of our reported statistics. By weighted number of households, we are able to match 93.8 percent of FDIC households to the March CPS, and 92.2 percent of those to the administrative data. Unweighted, our final sample contains 46,740 persons in 20,250 households.

Main reasons for being unbanked are listed below from most frequent to least frequent within categories:

(1) Mandated electronic payments are likely to work against preferences

- Do not see the value of having a bank account
- Do not trust banks
- Banks do not feel comfortable or welcoming

(2) Mandated electronic payments' effects are ambiguous

- Do not have enough money to need a bank account
- Don't know/refused/non-response
- Write-in other response
- None of the reasons listed
- Service charges of bank accounts are too high
- Bounced too many checks or had too many overdrafts
- There are language barriers at banks
- Do not write enough checks to need a bank account
- Could not manage or balance a bank account
- Couldn't pick just one main reason
- Do not know how to open a bank account

(3) Mandated electronic payments are likely to expand choice set

- In process of opening an account within two weeks
- The bank closed my account
- Minimum balance requirement at banks is too high
- There is no bank near home or work
- Banks have inconvenient hours
- Do not have the proper documents to open a bank account
- Credit problems

- Banks do not offer needed services like check cashing
- Banks take too long to clear checks

## FIGURES AND TABLES

### FIGURE 1

*Direct Express Enrollments by Month*

[see attached file]

SOURCE: US Department of the Treasury, Financial Management Service.

FIGURE 2

*Time Trends in Unbanked Rate by SSA Payment Status*

[see attached file]

SOURCE: Authors' calculations based on 2009–2013 FDIC National Survey of Unbanked and Underbanked Households data, matched to CPS Annual Social and Economic Supplement.

TABLE 1  
*Unbanked Rates by Demographics*

| <u>(all numbers are percentages)</u>           | US non-institutional pop. |                  | SSA payment recipients |                  |
|--|---------------------------|------------------|------------------------|------------------|
|  | Frequency                 | Unbanked         | Frequency              | Unbanked         |
| All households                                 | 100.0                     | 6.2              | 100.0                  | 6.5              |
| Metropolitan                                   | 82.8                      | 5.9              | 78.6                   | 6.4              |
| Non-metropolitan                               | 17.3                      | 7.6              | 21.4                   | <sup>^</sup> 7.0 |
| <u>Householder / reference person</u>          |                           |                  |                        |                  |
| Aged 39 and under                              | 29.8                      | 9.0              | 6.7                    | 18.6             |
| Aged 40 to 61                                  | 43.7                      | 6.1              | 22.1                   | 13.2             |
| Aged 62 and over                               | 26.5                      | 3.2              | 71.2                   | 3.3              |
| One of multiple adults                         | 64.9                      | 4.3              | 59.1                   | 5.4              |
| Only adult                                     | 35.1                      | 9.7              | 40.9                   | 8.1              |
| White  | 82.4                      | 4.2              | 83.2                   | 4.1              |
| Non-white                                      | 17.7                      | 15.4             | 16.8                   | 18.3             |
| Earned HS diploma or GED                       | 88.3                      | 4.4              | 79.2                   | 4.0              |
| No HS diploma or GED                           | 11.7                      | 20.2             | 20.8                   | 16.2             |
| <u>All adults in household</u>                 |                           |                  |                        |                  |
| No adult w/ daily disability                   | 80.2                      | 5.4              | 54.9                   | 4.4              |
| Some adult w/ daily disability                 | 19.8                      | 9.4              | 45.1                   | 9.1              |
| No adult w/ work-limiting disability           | 83.1                      | 5.3              | 60.9                   | 4.0              |
| Some adult w/ work-limiting disability         | 16.9                      | 10.8             | 39.1                   | 10.3             |
| No unemployed adult                            | 90.5                      | 5.5              | 94.0                   | 6.2              |
| Some unemployed adult                          | 9.6                       | 12.9             | 6.0                    | 11.4             |
| <u>Government payments to household</u>        |                           |                  |                        |                  |
| No means-tested benefits                       | 82.1                      | 3.1              | 74.0                   | 2.8              |
| Some means-tested benefits                     | 17.9                      | 20.4             | 26.0                   | 17.2             |
| No SSA payment                                 | 68.3                      | 6.1              | -                      | -                |
| Some SSA payment                               | 31.7                      | <sup>^</sup> 6.5 | -                      | -                |
| <u>Within SSA payment recipient households</u> |                           |                  |                        |                  |
| OASDI only                                     | -                         | -                | 85.6                   | 3.3              |
| SSI only                                       | -                         | -                | 8.1                    | 27.4             |
| Both OASDI and SSI                             | -                         | -                | 6.2                    | 23.1             |
| No disability SSA payment                      | -                         | -                | 74.3                   | 3.2              |
| Some disability SSA payment                    | -                         | -                | 25.7                   | 16.1             |

<sup>^</sup> Cannot reject equality of percent unbanked across categories.

SOURCE: Authors' calculations based on 2009 FDIC National Survey of Unbanked and Underbanked Households matched to Social Security Administration payments data.

Notes: Reported statistics are the percentage of households unbanked in January 2009, conditional on being part of the US non-institutional population or the SSA recipient population (column), and the demographic sub-group (row). Weighted using FDIC survey household weights. Except where noted, (vertical) differences across categories are significant at the five percent level, with standard errors calculated using successive difference replicate weights.

TABLE 2  
*Rates of Financial Services Use*

| (all numbers are percentages)                   | Frequency | Non-bank check cashing | Non-bank money order | Non-bank Borrowing | Payment cards | If unbanked in Jan 2009, ever had a bank acct. | If SSA recipient in Dec 2011, electronic by Dec. 2011 |
|---|-----------|------------------------|----------------------|--------------------|---------------|--|---|
| All banked households                           | 93.8      | 8.0                    | 27.6                 | 10.4               | 11.8          | -  | -   |
| All unbanked households                         | 6.2       | 40.2                   | 61.1                 | 30.8               | 18.7          | 55.7   | -   |
| No SSA payment to household                     | 68.3      | 10.7                   | 30.5                 | 12.9               | 13.4          | -  | -   |
| Some SSA payment to household                   | 31.7      | 8.4                    | 27.5                 | 8.9                | 9.4           | -  | 94.3  |
| <u>Within SSA payment recipient households</u>  |           |                        |                      |                    |               |  |   |
| OASDI only                                      | 85.6      | 6.8                    | 24.2                 | 6.4                | 8.7           | -  | 96.2  |
| SSI only  | 8.1       | 19.8                   | 46.1                 | 27.1               | 16.8          | -  | 78.3  |
| Both OASDI and SSI                              | 6.2       | 16.5                   | 49.8                 | 19.9               | 9.6           | -  | 88.7  |
| No disability payment                           | 74.3      | 5.5                    | 22.5                 | 4.1                | 8.1           | -  | 95.9  |
| Some disability payment                         | 25.7      | 16.9                   | 42.0                 | 23.0               | 13.3          | -  | 89.8  |
| Banked households                               | 93.5      | 7.0                    | 25.7                 | 8.1                | 9.2           | -  | 95.4  |
| Unbanked households                             | 6.5       | 29.8                   | 55.7                 | 22.0               | ^ 12.9        | 47.3   | 77.7  |
| <u>Within unbanked SSA, not opening account</u> |           |                        |                      |                    |               |  |   |
| Elec. paymts. against preferences               | 13.1      | 48.1                   | 68.1                 | 29.9               | 6.1           | 31.0   | 83.4  |
| Elec. paymts. ambiguous                         | 64.2      | 23.0                   | 49.0                 | 18.5               | 12.8          | 42.6   | 76.5  |
| Elec. paymts. align with preferences            | 22.7      | 37.0                   | 66.2                 | ^ 26.6             | ^ 17.2        | 70.1   | ^ 77.7  |

^ Cannot reject equality of percent using across categories.

SOURCE: Authors' calculations based on 2009 FDIC National Survey of Unbanked and Underbanked Households matched to Social Security Administration payments data.

Notes: Reported statistics are the rate of use of the financial service in the column heading, conditional on being part of the group in the row heading. Sample differs slightly across columns because of non-response. Weighted using FDIC survey household weights. Except where noted, (vertical) differences across categories are significant at the five percent level, with standard errors calculated using successive difference replicate weights. "Non-bank borrowing" includes payday loan or advance, pawn shops, tax refund anticipation loans, and rent-to-own.

TABLE 3  
*Predicting Take-Up of Electronic Payments*

|                                       | SSA payment recipients |            | Unbanked SSA recip. |            |
|---------------------------------------|------------------------|------------|---------------------|------------|
|                                       | Odds ratio             | (SE)       | Odds ratio          | (SE)       |
| <u>Demographics</u>                   |                        |            |                     |            |
| Metropolitan                          | 1.86                   | *** (0.24) | 1.90                | ** (0.62)  |
| Householder aged 39 and under         | 0.81                   | (0.17)     | 1.09                | (0.49)     |
| Householder aged 62 and over          | 1.81                   | ** (0.41)  | 2.47                | * (1.35)   |
| Multiple adults in household          | 1.13                   | (0.15)     | 1.84                | * (0.63)   |
| Householder white                     | 1.42                   | * (0.26)   | 1.08                | (0.33)     |
| Householder earned HS diploma or GED  | 1.43                   | ** (0.24)  | 1.12                | (0.39)     |
| <u>Payment type</u>                   |                        |            |                     |            |
| Receiving SSA payment for disability  | 1.29                   | (0.29)     | 3.14                | ** (1.74)  |
| Receiving SSI                         | 0.32                   | *** (0.07) | 0.33                | *** (0.13) |
| <u>Alternative financial services</u> |                        |            |                     |            |
| Ever used AFS                         | 0.92                   | (0.15)     | 1.09                | (0.43)     |
| Ever used non-bank payment card       | 1.51                   | (0.42)     | 1.42                | (0.85)     |
| <u>Banking</u>                        |                        |            |                     |            |
| Unbanked                              | 0.42                   | *** (0.09) |                     |            |
| Electronic payments against prefs.    |                        |            | 2.15                | (1.19)     |
| Electronic payments align with prefs. |                        |            | 0.92                | (0.39)     |
| Closed account more than one year ago |                        |            | 1.29                | (0.85)     |
| Closed account within last year       |                        |            | 0.96                | (0.35)     |

\*  $p < 0.10$  \*\*  $p < 0.05$  \*\*\*  $p < 0.01$

SOURCE: Authors' calculations based on 2009 FDIC National Survey of Unbanked and Underbanked Households matched to Social Security Administration payments data.

Notes: Logistic regression estimates. Weighted using FDIC survey household weights. Standard errors calculated using successive difference replicate weights. Results are similar when measuring disability and means-tested benefits with survey responses.