No Strings Attached

The Behavioral Effects of U.S. Unconditional Cash Transfer Programs

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Executive Summary

Providing cash directly to individuals has often been met with criticism, suspicion, and fear: the thinking goes that people who need financial assistance are not to be trusted, as their financial position reflects a moral failing rather than a societal one. These objections to cash transfer programs are rooted more in myth than empirical evidence. As the debate about a universal basic income gains prominence, it is important to set the record straight about the behavioral effects of unconditional cash assistance.

In this evidence review, we explore how unconditional cash transfers affected the behavior of recipients in three major natural experiments. While the amounts dispersed and time periods were distinct in each experiment, each provided money without set conditions and without a means test. We synthesize data for the following outcomes: consumption; labor force participation (employment, hours worked, and earnings); education; health; and other social outcomes, such as marriage or fertility choices. Each of these programs shares different components of a universal basic income (UBI), a cash transfer that everyone within a geographic/political territory receives on a regular basis with no conditions on a long-term basis. By understanding the effects of these programs, we can generate answers to how an unconditional cash transfer program might affect recipients in the future.

We review the empirical results from the U.S. and Canadian negative income tax experiments, the Alaska Permanent Fund Dividend, and the Eastern Band of Cherokees casino dividend program, as well as a few other assorted studies. While all of these programs provide unconditional cash transfers, only the negative income tax experiments guaranteed enough money to live on. The negative income tax experiments ensured recipients would receive up to $25,900 in today's dollars, but the program also imposed high tax rates on earned income and reduced the benefit the more recipients earned. The Alaska fund provides an average of one to two thousand dollars annually to all Alaskan residents and the dividend is taxed at the regular income tax rate. The casino dividends provide an average of four thousand dollars and is also unaffected by earned income. An overview of the empirical results follows.

Labor participation: Did participants stop working, work less, and/or earn less?

- Overall, the programs analyzed suggest either no effect on labor market supply or a slight reduction in work and earnings. The evidence does not suggest an average worker will drop out of the labor force when provided with unconditional cash, even when the transfer is large.
- The effect on employment in the negative income tax experiments was generally not statistically significant, except for the largest experiment site, which saw a 4 percentage point decline in the employment rate. On average, the reduction in hours worked for all experiments was between two weeks (for husbands) and four weeks (for youth) of full-time employment over a year. People who participated in the largest experiment experienced a 4.6 percent reduction in employment and 7.4 percent reduction in earnings ($1,800 annually) for treated individuals over many years after the experiment ended, perhaps due to earlier retirement.
- The casino dividend had no impact on the labor supply of participants.
- The Alaska dividend has no impact on the employment-to-population ratio in Alaska compared to control states. The program increases the share of Alaskans who work in part-time jobs by two percentage points.
- Because neither the casino nor Alaska dividend programs provide sufficient income to replace

earned income, we augment the negative income tax research on labor outcomes with an analysis of lottery winners. According to this body of work, recipients of windfall cash disbursed annually do not drop out of the labor force. While many lottery winners reduce the number of hours worked, the majority remain in the labor force.

- The research finds a $100 increase in income leads to an $11 decrease in earnings based on lottery winners and negative income tax experiment participants, or no decrease at all in the case of the casino payments.

Consumption: Did participants purchase more goods and services, and if so, which?

- The negative income tax experiments in two rural states showed positive impacts on the quality of nutrition, suggesting an increase in spending on food. Otherwise, data on consumption was not collected.
- Receiving an Alaska dividend affected the timing of consumption, as recipients consumed significantly more on non-durables and services the month they received a dividend.

Education: Did participants attain more schooling?

- School attendance, grades, and test scores for the children of negative income tax recipients were typically higher than the control population, especially for younger and poorer children. The Canadian program lowered dropout rates for 11th graders.
- An additional $4,000 per year for the poorest households in the casino dividend program increased educational attainment by one year.

Health: Did participants have improved health outcomes?

- The Canadian negative income tax was the only experiment to track health outcomes, and it found that recipients experienced an 8.5 percent decrease in hospitalizations compared to the control group, especially for mental health, accidents, and injuries.
- Casino dividend payments improved mental health among Native American recipients relative to non-Native participants in a longitudinal study. Once they reached adulthood, children who received casino dividends were significantly less likely to experience alcohol or cannabis use or dependence.
- There is little to no impact on health outcomes for Swedish lottery winners, likely because of the universal healthcare system in the country.

Other:

- For the Gary, IN experiment, fertility decreased and birth weights increased. The original analysis of the IMEs showed an increase in divorce, but these findings were later strongly disputed.
- Self-reported criminalized activity decreased among recipients of the EBC casino dividend, particularly for minor crimes and drug-dealing activities. Children also reported more positive interactions with parents. Casino payments did not change household composition or marital status.

In sum, the effects of unconditional cash transfers vary depending on program design, but there is either no impact on or a moderate decrease in labor participation and a significant increase in other quality-of-life benefits (mental and physical health, education outcomes, parenting, reduced criminal activity, etc.).

Introduction

WHAT HAPPENS WHEN PEOPLE RECEIVE CASH WITH NO STRINGS ATTACHED?

This question and many others are at the core of a debate that has gained remarkable interest and traction in the United States in the last year. The idea is bold, yet not new: a universal basic income (UBI) has floated in and out of political discourse for decades (Thigpen 2016). A UBI, also referred to as a guaranteed minimum income or income guarantee, is a cash transfer that everyone within a geographic/political territory receives on a regular basis with no conditions on a long-term basis.[1] Such a guaranteed minimum income can also be implemented through a negative income tax (NIT) scheme, which ensures a minimum income through tax credits.

With its resurgence in the debate about economic security, many questions arise for those who consider the merits of guaranteed income: How does receiving cash directly (rather than conditional welfare, unemployment insurance, or food stamp benefits) affect recipients' behavior and economic security? Will people who receive unconditional cash grants drop out of the workforce and do nothing? Will they waste their supplements on cigarettes and alcohol? In other words, would such a program be a waste of public investment? We can generate possible answers to these questions by looking to historical precedents, reviewing the behavioral and microeconomic effects of past and ongoing programs that deliver cash grants to individuals without conditions. By gaining a deeper understanding of the behavioral results of these real-world cash transfer experiments and programs, we can inform the ongoing debate about UBI.

The current discourse around UBI explores various program designs, from tax-and-transfer models to models that establish co-ownership of collective resources through dividend programs (see Thigpen 2016 for more detail on the intellectual history of these models). In general, what each of the proposed variations on UBI has in common are the following signature features:

- The program distributes cash directly to the recipient without a means test (i.e. it is not necessary to show that your income is below a certain threshold in order to qualify for the program) or set conditions for receiving the money.
- The funds are distributed over the long term.
- Everyone within a set geographic region receives the supplement.

To date, there has been no single government-funded cash transfer program in the United States that checks each of those boxes. However, taken holistically, there are several historical experiments and pilots we can review to understand the effects of a potential cash transfer program that unites all their key features. This paper will explore the labor supply, health, and education effects of those experiments and offer insight into what those results can teach us about creating unconditional cash transfer programs in developed countries, with a primary focus on the United States.

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1 There is debate about whether absolutely all residents are entitled to the transfer. For example, would non-citizens or incarcerated individuals be eligible? The discussion of such eligibility criteria is beyond the scope of this review, and we recommend further discussion to ensure such a policy is not exclusionary.

FEATURES OF A "FULL" UNIVERSAL BASIC INCOME

☑	Unconditional
☑	No means test
☑	Long Term
☑	Covers basic living expenses
☑	Distributed to everyone within a set region

The historical precedent that most closely mirrors a full unconditional cash transfer or UBI program is the negative income tax experiments of the 1970s, which took place in six American states and one province in Canada. Since the design of those experiments does not allow us to distinguish between income and substitution effects (as we explain in the text box below), we will also explore the effects of two long-running unconditional cash transfer programs: the Eastern Cherokee Nation's casino revenue dividend and the Alaska Permanent Fund Dividend. Though there are some external validity and comparability limitations, we will also touch on the effects of receiving lottery winnings on an annual basis in the developed world to understand the pure income effect of large unconditional cash transfers. We end with a synthesis of the effects of unconditional cash transfers in the formerly colonized/developing world, where there is more robust experimental work on this topic. It is important to note that each of these experiments deals with very different sample populations; residents of Alaska, members of the Eastern Band of Cherokees nation, and people who play the lottery are not representative of the entire population and thus our extrapolation to broader populations must consider these limitations.

Overall, our goal is to answer the following questions: What do people do when they receive cash with no strings attached? How does receiving an unconditional cash transfer affect a recipient's work habits, health, education, and family? What can we learn from historical precedents that can inform how we approach the economic insecurity that is likely to increase without structural, comprehensive reform to our economic system?

UNDERSTANDING INCOME AND SUBSTITUTION EFFECTS

Throughout this paper, we will refer to two concepts that economists call the "income effect" and "substitution effect." These concepts underpin why we have selected these natural experiments and what their empirical results might teach us about the behavioral effects of specific cash transfer program designs.

Let's imagine an individual is in a cash transfer program that pays a monthly check, the size of which declines the more money they make (as was the case for the NIT experiments). Compared to a situation with no welfare programs at all, this program might make an individual want to work less—and for two reasons:

- First, since the individual now receives a check in the mail every month, they don't need to work as much to pay the bills, support their family, etc., so they might prefer to work less. Economists call this the "wealth effect" or "income effect"—the cash supplement effectively makes recipients wealthier, which can change how much they want to work.
- Second, in a program structured as a negative income tax, the size of a cash transfer decreases the more money one earns, with earned income taxed at a high rate. This could decrease the incentive to work too—not because a recipient is richer but because working doesn't provide as much money as it used to (since it also results in some money being taken away). When work becomes less lucrative relative to non-work, people substitute away from work and towards non-work: this is what economists call the "substitution effect."

When we look at data about the effects of cash transfers on how much people work, we can't always determine whether we're seeing an income effect or a substitution effect—are people working less because they have more money and so can afford more leisure, or because working more would result in some of the cash benefit being taken away? It's important that we know which is which in order to design effective cash transfer programs.

In this paper, we examine programs that cannot clearly distinguish between income and substitution effects as well as programs that clearly demonstrate income effects. The Alaska Permanent Fund Dividend and the Eastern Band of Cherokees casino dividend isolate an income effect as they do not impose high marginal tax rates on income earned outside the experiment. However, the amount of money provided to recipients may not be large enough to meaningfully change labor force participation (receiving an extra one to four thousand dollars a year may not be sizable enough to cause significant labor effects). The NIT experiments provided much larger cash transfers (enough to live on), but we cannot clearly distinguish between substitution and income effects because of their tax structure. This is why we also look at data from lotteries, which have no substitution effect—they don't reduce how much of each dollar a recipient earns is taken home; they just increase the recipient's wealth. Their structure is akin to simply receiving an annual raise. Thus, if lottery winners work less than they did before winning the lottery, we'll know this is because they just don't need to work as much (income effect).

Testing "Income Maintenance":
The Negative Income Tax Experiments of the 1970s

HISTORICAL CONTEXT

In the late 1960s and early 1970s, policy experts took the long debate over the best way to structure government welfare programs from conversation to experiment. Many believed that a negative income tax program or refundable tax credit would be a simpler and more effective way to provide a safety net to the poor than programs like Aid to Families with Dependent Children (AFDC, also known as welfare) and the Food Stamps Program (now called the Supplemental Nutrition Assistance Program). In these existing programs, benefits are foregone entirely when income rises above a certain threshold, which critics say contributes to a poverty trap. The NIT model provides a guaranteed income floor to participants, but it is structured differently than a simple universal basic income scheme that cuts equal checks to all citizens. Under an NIT scheme, the government guarantees a maximum cash transfer benefit of G, which serves as the basic income guarantee. The government reduces the amount of the cash transfer by a tax or benefit-reduction rate (t) for each dollar of earned income (Hum & Simpson 1993). These earnings are often therefore implicitly taxed at a high rate: Since cash grants gradually diminish the more an individual works, it can be argued that the model disincentivizes work by low-income individuals more than a prototypical UBI model with no obvious labor supply substitution effect. On the other hand, the NIT model ostensibly penalizes work less than either AFDC or SNAP.

Negative income tax advocates thus hoped their model would avoid the "welfare trap" and streamline existing social safety net programs. The U.S. Office of Economic Opportunity under President Johnson heralded the idea and set forth a plan for replacing traditional welfare with an NIT. A White House task force and presidential commission debated the plan beyond Johnson's time in office, and under President Nixon, Donald Rumsfeld steered the project away from full implementation and toward experimentation, thus giving rise to the experimental results reviewed here (Forget 2011).

The U.S.'s NIT experiments had several goals. First, experimenters sought to compare "internally valid direct estimates of the relative costs of AFDC and the negative income tax" (Munnell 1986) to determine which program was more likely to disincentivize work. Would the high marginal tax rates imposed on earned income while receiving AFDC benefits be a stronger disincentive, or would the lack of a work requirement under the NIT scheme enable recipients to choose not to work with no penalty? Policy experts at the time knew that the specific design of an NIT model would disincentivize work to some degree; thus, their goal was not to determine whether labor supply would be affected by the program but by how much it would be affected (Burtless 1986). As experimenters gathered data over time, additional goals and questions arose: How would health, family formation and fertility, and human capital be affected (Forget 2011)?

The NIT experiments authorized by the federal government, which were the first randomized control trials in the social sciences, took place from 1968 to 1982. The first experiment took place in urban areas in New Jersey and Pennsylvania (1968–1972, n=1,216), with subsequent experiments in rural areas of Iowa and North Carolina (1970–1972, n=809), Gary, Indiana (1971–1974, n=1,799), and Seattle, Washington (1970–1978, n=4,800), which was extended in 1972 to Denver, Colorado (GiveDirectly 2016). The Seattle/Denver Income Maintenance Experiment, referred to as SIME/DIME, was the largest and longest-running of the four. In SIME/DIME, about half of the 4,800 partici-

pants were guaranteed an income of $25,900 in 2013 dollars (Price and Song 2016), which was the most generous of the experiments. All experiments varied different combinations of tax rates and guarantee levels (e.g. a guarantee of 75 percent of the federal poverty line with a 50 percent tax rate on earned income) to study effects on work (Burtless 1986). A detailed breakdown of the features of each income maintenance experiment is listed in the table below from Hum and Simpson (1993):

FAST FACTS ABOUT THE NEGATIVE INCOME TAX EXPERIMENTS

Number of recipients	10,067 households (includes Mincome study)
Amount of money guaranteed	Range from $17,445-$48,446 for a family of four*
Eligibility	Varies; most required families have at least one dependent, make less than 150% of the poverty line
Frequency of cash supplement	Monthly
Duration	3-5 years per program (staggered between 1968-1979)

*in 2013 dollars

Simultaneously, from 1974 to 1979, Canada launched a similar experiment in the province of Manitoba called Mincome. While the two sets of programs share many common features, the United States NIT program differed in some ways from Canada's Mincome experiment. First, the Mincome program included a saturation site—the small rural town of Dauphin—in which all 10,000 residents were eligible to participate, in addition to a randomized sample in Winnipeg that mirrored the U.S. experimental design. Second, the experiment was originally conceived as a first step in an eventual universal basic income (to complement Canada's universal healthcare system), rather than a replacement or reform of existing welfare programs. Third, the Mincome experiment offered 60 percent of the poverty line (or low-income cut-off) for Canada across the board, rather than varying the guarantee and tax rate levels within a sample. The project and payments ran for four years, but due to insufficient funding, data collection ceased after two. The data that had been collected was archived and largely unanalyzed for decades, until Evelyn Forget analyzed the untouched data in 2011. Forget and her colleagues collected the data from tapes, archived boxes, and a population health database to determine the influence of income supplements on health outcomes.

HOW THE NIT EXPERIMENTS COMPARE TO A "FULL" UBI

- ☑ Unconditional
- ☑ No means test
- ☐ Long Term
- ☑ Covers basic living expenses
- ☐ Distributed to everyone within a set region

EFFECTS ON CONSUMPTION

There is no systematic evidence on the effects on consumption across the NIT experiments because consumption was not measured in the standard data that was collected. However, the rural NIT in Iowa and North Carolina showed positive impacts on the quality of nutrition (Salkind and Haskins 1982), suggesting an increase in spending on food.

EFFECTS ON EMPLOYMENT, HOURS, AND EARNINGS

The NIT experiments were a complex intervention, and the net impact on labor supply is hard to predict ex ante because it depends on whether the NIT is more or less generous than the existing welfare and tax system. Two countervailing forces are at play: On the one hand, many of the NIT treatments provided a higher level of income guarantee than other safety net programs, and this was especially true for the SIME/DIME experiment. This higher income guarantee should induce a decrease in labor supply due to the income effect; when people have a higher unearned income, they choose to work less.

On the other hand, the tax rate on the income guarantee was often smaller than the implicit tax rate on benefits in the existing system, which should stimulate work through an incentive effect known as the substitution effect. To clarify, the implicit tax rate on a benefit is the number of cents that are taken away from that benefit when a recipient earns an additional dollar of labor income. A 100 percent tax rate would mean that each dollar earned resulted in one dollar of benefit taken away: existing benefits often had implicit taxes close to 100%. In the NIT experiments, the tax rate was not 100 percent but ranged between 30 and 80 percent; i.e., between 30 and 80 cents of benefits were taken away for each dollar earned.

We will now discuss the overall impact of the NIT experiments on labor supply, before turning to estimates of the income and substitution effects that come out of these experiments.

The NIT experiments had a negative impact on employment among treated families (those who received the benefit), but this effect was generally not statistically significant (Robins 1985); only the SIME/DIME experiment showed a statistically significant effect, with a 4 percentage point decline in the employment rate. The SIME/DIME experiment was the most generous, and had the largest sample size (Burtless 1986), so it makes sense for the impacts to be larger and more significant. However, because NIT recipients underreported earnings in order to get a larger benefit payment, the impacts of NIT on employment are likely exaggerated (Robins 1985; Burtless 1986; Ashenfelter and Plant 1990). Another issue that likely contributed to an overestimation of labor supply effects is selective attrition: Ashenfelter and Plant (1990) show that treated families who received no payment (because they had higher outside earnings) and therefore likely had no labor supply response to the NIT were more likely to leave the experiment, affecting the sample.

Altogether, the NIT experiments show a negative impact on hours worked, though the effect is not always statistically significant (Burtless 1986; Robins 1985). On average, the reduction in labor supply was between two and four weeks of full-time employment over a year (Robins 1985). Furthermore, the impact on working at all (what economists call "the extensive margin" of labor supply) was generally larger than the impact on hours worked for those who were working (what economists call "the intensive margin" of labor supply) (Burtless 1986). Again, misreporting of earnings implies that the hours effect was exaggerated: In the case of the Gary experiment, the entire negative effect of NIT on hours worked can be explained by misreporting (Burtless 1986).

Using variation in tax rates and income guarantees across experiments, one can identify the substitution effect and the income effect. There is not enough data to reliably estimate the impact for each of the different guaranteed income and tax rates that were tried in the experiment, i.e. it is not possible to estimate the income and substitution effects non-parametrically (Ashenfelter and Plant 1990). If we are willing to make some additional assumptions, such as assuming that the income and substitution effects are proportional to the tax rate and income guarantee levels, we can identify the income and substitution effects in parametric models. Using parametric models and synthesizing prior results, Robins (1985) finds that the income elasticity typically varies between -0.06 and -0.10 depending on the demographic group. This implies that for a 1-dollar increase in cash payments, and holding effective marginal tax rates and hourly wage fixed, participants' earnings decrease by between 6 and 10 cents. As for the substitution effect, it is estimated to be generally between 0.08 and 0.17, meaning that lower effective tax rates inducing a 10 percent increase in the net-of-tax hourly wage led to a 0.8 to 1.7 percent increase in total earnings (Robins 1985). Hum and Simpson (1993) also calculated income and substitution effects for the Canadian negative income tax experiment Mincome: Both are insignificant, and the estimated income effect is zero. Taking together all NIT experiments, income and substitution effects are both quite small, and smaller than the non-experimental estimates (Hum and Simpson 1993). It is also important to remember that these elasticities are based on extrapolations from the labor supply effects of the NITs, which, as pointed out above, have been overestimated. It is therefore likely that these elasticities are upper bounds for the impact of a NIT on labor supply.

There is important variation in the labor supply effects of a NIT by individual characteristics. In terms of absolute hours and employment responses, husbands and whites tend to be less responsive; in terms of elasticities, the income effect is largest for single mothers, then for husbands and then for wives (-0.06). The substitution effect is largest for wives (0.17), then for single mothers, and then for husbands (Robins 1985). Income effects for husbands and wives are quite similar. Income and substitution effects tend to be smaller than the non-experimental estimates, especially for women (Hum and Simpson 1993). Overall, these results suggest that wives are more sensitive to the substitution effect, i.e., implicit taxes on their earnings, than to the income effect. The opposite is true for husbands. There are many possible reasons that could explain this differential, and given the limited amount of empirical evidence, we will not speculate as to the reasons behind these differences. It is worth noting that the labor market in the 1970s did have more gender segregation and lower workforce participation for women, so it is unclear whether the same gender differences would be observed under a similar policy today.

An unpublished study (Price and Song 2016) has used Social Security data to investigate the long-run impact of the SIME/DIME experiment on labor supply. The authors match experimental participants with two or more children to Social Security records, using the birth dates of the children to identify participants; in this way they are able to match about half of the participants. Their analysis is therefore based on comparing matched participants with two or more children to control individuals with two or more children. They find a 4.6 percent reduction in employment (3.3 percentage points) and 7.4 percent reduction in earnings ($1,800 annually) for treated individuals over many years after the experiment ended. The authors further investigate the timing of the effects. Immediately after the experiment was concluded and individuals were no longer receiving transfers from this source, the impact of NIT on labor supply was non-existent. However, as people reached 50–60 years old, there were substantial labor supply reductions among the treated participants.

The reason why the impact took so long to materialize is unclear, but the authors suggest it is related to relatively earlier retirement.[2] The study also investigates the impact of the NIT treatment on children's long-run labor market outcomes and finds no effect on working or earnings.

EFFECTS ON EDUCATION, HEALTH AND OTHER SOCIAL OUTCOMES

Effects on children's educational outcomes

Results show that school attendance, grades, and test scores for the children of participants who received the NIT were typically higher (Maynard and Murnane 1979; Salkind and Haskins 1982). The impact on test scores was larger for younger children and for children from poorer families (Maynard and Murnane 1979). In Canada, the entire small rural town of Dauphin received Mincome. Forget (2011) matches residents from Dauphin to similar population centers in Manitoba as controls, and shows that the NIT lowered high school dropout rates in 11th grade. While matching is not as reliable a method as randomization and significance tests for this outcome were not reported, the results for Canada are consistent with the results from the American NIT experiments. Overall, the NIT improved children's educational outcomes. With higher income for families, children's educational outcomes could have improved due to better material inputs (e.g., food and books) or indirect effects of parenting (e.g., more quality time with children).

A precedent to the NIT is the Mothers' Pension program that operated from 1911 to 1935. The program was administered by each U.S. state, so it built in quasi-experimental variation. It allowed poor mothers without a male breadwinner to receive a cash transfer, typically for three years, often on the condition of not working. The income test was enforced at enrollment in the program but was loosely enforced thereafter, making the Mothers' Pension somewhat comparable to an unconditional cash transfer. The Mothers' Pension, which increased mothers' incomes by about 30 percent, increased completed schooling for their sons by about one year (Aizer et al. 2016).

Effects on health

While no systematic data on health was collected in the NIT experiments, administrative health records could be used for Dauphin. The Canadian Mincome improved health, as measured by an 8.5 percent decrease in hospitalizations compared to matched control towns (Forget 2011). The decrease in hospitalization was particularly large for mental health, accidents, and injuries. The NIT and Mincome experiments did not track use of controlled substances, but we will review that outcome variable in later sections.

The evidence from the Mothers' Pension is consistent with the NIT evidence on health: It shows that the cash transfer to mothers increased the sons' life expectancy by about a year (Aizer et al. 2016).

Effects on marriage and fertility

The evidence on these outcomes is limited. The initial analysis of the American NIT experiments showed an increase in divorce. This led many policymakers, like then-U.S. Senator Daniel Patrick Moynihan, to disavow the program (Forget 2011), despite the fact that an increase in divorce could increase social welfare by, for example, diminishing domestic violence (Stevenson and Wolfers 2006). In any case, these findings were later strongly disputed (Widerquist 2005).

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2 Price and Song offer a few possible explanations for the long-term effects on adults: The additional wealth shock provided by the experiment could have increased total assets in treated families, making it possible to retire earlier; participants may have developed relatively less human capital if they worked less during the time of the experiment; or they may have changed their preferences for more leisure and opted to retire sooner

For some of the NIT experiments, effects on fertility and birth weights could be analyzed. In the Gary NIT, treatment decreased fertility and increased birth weights (Salkind and Haskins 1982). Mincome had no effect on divorce, fertility, or birth weights.

Overall, the NIT experiments show no impact on marriage and fertility.

Comparison limitations

Data collection issues limit the conclusions we can draw from the NIT experiments. Specifically, selective attrition and earnings misreporting imply that labor supply effects are overestimated (Burtless 1986; Ashenfelter and Plant 1990).

The NIT experiments imposed a high implicit tax on the guaranteed income in the range of 30–80 percent, with most rates in the higher range. This made the overall labor supply effect more negative. It is reasonable to expect that a UBI with a lower effective marginal tax would have smaller effects on labor supply for low-income individuals.

The experiments were short-run, and participants knew that the transfers would not be forever; this could have led researchers to under- or overestimate the labor supply responses (Burtless 1986). For example, some program participants may have refrained from quitting their jobs because they knew the transfers would end. If labor supply takes time to adjust, the labor supply effects of the NIT experiments could thus be underestimated. In the SIME/DIME experiment, the duration of payments was randomized, and there is some evidence that labor supply responses are larger for longer durations (Burtless 1986). Furthermore, a payment that lasts longer is equivalent to a larger change in lifetime income, and therefore one would expect a larger labor supply effect. On the other hand, the NIT could be seen as a sale on leisure[3]: People may have taken more time off during the NIT experiment because the cost of leisure was temporarily reduced. In this case, labor supply effects could have been overestimated.

By design, the experiments could not take into account macro effects; the NIT was assigned to a small group of treated individuals and therefore could not have large impacts on society. But suppose the NIT was made universal: Three distinct effects might follow, which could not be measured through the NIT experiments. According to classical economic theory, if an NIT were financed by increasing taxes on high incomes, this might have adverse impacts on labor supply among high earners—though it might also increase the earnings of lower-paid earners, if the ex-ante compensation for top earners consists of rents. The two positive effects could result in increased wages and employment levels. If there were a decrease in labor supply and no change in labor demand, then basic theory predicts that wages would increase. However, labor demand might increase with an NIT. To the extent that NIT increased the incomes of the poor, consumption would likely increase. This demand stimulation effect would contribute to increasing employment and wages.

The key advantage of the NIT experiments is exactly their experimental nature. However, the NIT experiments were limited in time and scope. It is therefore difficult to predict the impacts of a long-run and universal program based on these NIT experiments. That is why we look to other, longer-lasting examples of unconditional cash transfers.

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3 Note: While economists refer to the absence of labor market participation as "leisure," it is quite possible that many individuals who are not in the formal labor market are indeed performing work through childcare, elder care, or other domestic work. Thus, we do not mean to imply that treated individuals who did leave the workforce or reduce their labor hours were simply participating in "leisure activities" during this time.

Eastern Band of Cherokee Indians Casino Dividend

HISTORICAL CONTEXT

In 1993, Duke University began an 11-year longitudinal study called the Great Smoky Mountains Study, which surveyed 1,420 children and adolescents in North Carolina to gauge the mental and emotional health of white rural youth (n=1,070) and American Indian youth (n=350) over time. The survey followed up with the cohort of children in annual waves until age 16 and then at ages 19, 21, 24, and 25 (Akee et al. 2010). After four waves of the study, a casino owned and operated by the tribal government opened on the Eastern Band of the Cherokee Nation. Three hundred and forty-nine of the youth in the study were members of the tribe.

FAST FACTS ABOUT THE EASTERN BAND OF CHEROKEES CASINO DIVIDEND	
Number of recipients	16,000
Amount of money guaranteed	Ranges, typically $4,000-$6,000/year
Eligibility	Enrolled members of EBC nation only
Frequency of cash supplement	Twice per year
Duration	1997-present

Akee et al. (2010) describe how the income from the casino was distributed to Native Americans: "A portion of the profits from this new business operation is distributed every six months on an equalized, per capita basis to all adult tribal members regardless of employment status, income, or other household characteristics. No choice is involved here. Individuals are eligible based on preexisting American Indian status." The average annual dividend per eligible person is approximately $4,000, which is subject to federal taxation and split into two payments per year. This dividend model produced an unconditional income for the Eastern Band of the Cherokee Nation and a way to study the effects of exogenously increased income on various outcomes. Unlike the NIT experiments, this natural experiment allows for the measurement of an income effect: the dividend could affect tax rates if recipients' income reaches the threshold for a higher tax bracket, but generally the dividend has little or no impact on effective marginal tax rates on earned income.

HOW THE EBC CASINO DIVIDENDS COMPARE TO A "FULL" UBI

☑	Unconditional
☑	No means test
☑	Long Term
☐	Covers basic living expenses
☐	Distributed to everyone within a set region

EFFECTS ON EMPLOYMENT AND HOURS

Akee et al. (2010) use a difference-in-differences approach to estimate the impact of the casino transfer payment on outcomes.[4] They compare the outcomes of Native American families to the outcomes of non-Native families, before and after the payment started. Using this strategy, they find no impact of the payment on labor supply, whether on working at all or on working part-time. The opening of the casino also provides job opportunities for Native Americans, potentially offsetting the negative effect of the payment on labor supply. However, this job creation effect likely does not explain the null result because the average household lived quite far away from the casino, with a median of 36 miles. Overall, the results are consistent with a zero income effect, i.e. the additional income did not lead to any change in labor supply.

EFFECTS ON EDUCATION, HEALTH, AND OTHER SOCIAL OUTCOMES

Effects on education and crime

Children whose families received the casino payments had improved educational outcomes, with better attendance and more years of education completed (Akee et al. 2010). Children from poorer families and children who were younger when the payment started saw a larger improvement in educational outcomes, similar to what was found for the NIT experiments (Maynard and Murnane 1979). An additional $4,000 per year for the poorest households increased educational attainment by one year at age 21. Overall, these results are in line with the results from the NIT experiments showing a positive effect on education.

Furthermore, self-reported criminalized activity also decreased among Native American children relative to their non-Native counterparts. The reduction was concentrated among minor crimes, with a 22 percent reduction for 16- and 17-year-olds. The casino payments also caused a reduction in drug-dealing activities among youths.

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4 "Differences-in-differences" refers to the econometric method that Imbens and Wooldridge (2007) define as follows: "...[O]utcomes are observed for two groups for two time periods. One of the groups is exposed to a treatment in the second period but not in the first period. The second group is not exposed to the treatment during either period. In the case where the same units within a group are observed in each time period, the average gain in the second (control) group is subtracted from the average gain in the first (treatment) group. This removes biases in second period comparisons between the treatment and control group that could be the result from permanent differences between those groups, as well as biases from comparisons over time in the treatment group that could be the result of trends."

Akee et al. find that an improvement in parenting likely contributed to improved child outcomes among families receiving the payments. Indeed, children reported more positive interactions with parents, and parents were more likely to be aware of their children's whereabouts and activities.

Finally, Akee et al. find that the casino payments decreased criminality among adult Native Americans relative to non-Natives.

Effects on health

The casino payments improved mental health among Native Americans relative to non-Natives (Costello et al. 2010). Once they reached adulthood, children who received the payments were significantly less likely to experience alcohol or cannabis use or dependence. The positive effect of the payments on psychiatric disorders in young adulthood was larger for children who were younger when the payments started.

The positive effects of casino-related income on health are confirmed in a broader sample of Native Americans. Again using a difference-in-differences strategy, Wolfe et al. (2012) show that Native Americans who live in a county with a casino see a 5 percent increase in income, though there is no effect on employment. They then instrument income with the presence of the casino and find that income has a pervasive positive effect on health, with important reductions in smoking, obesity, and anxiety. This study does not directly measure the impact of an unconditional cash transfer, but the broader impact of casinos on income, including unconditional cash transfers and other developments linked to the presence of a casino, such as community investments. Overall, the results support the conclusions from the Eastern Band of Cherokee nation's casino dividend.

Effects on household composition

The casino payments did not change the household composition or marital status (Akee et al. 2010), consistent with what was found when the NIT experimental results were re-examined.

COMPARISON LIMITATIONS

The population affected by the casino payments is not representative of poor households in the U.S.; Native American populations typically experience some of the worst institutional exclusion, leading to much worse poverty rates and health, education, and substance abuse outcomes (Center for Native American Youth). However, it is reassuring that the impacts of the casino payments on education were largely similar to those found in the NIT experiments, which covered a more diverse population sample.

The casino payments are foreseen to be permanent, and are thus a better approximation to UBI than the NIT experiments. At the same time, the impacts were only measured after about four years. Therefore, long-run effects could be different, just as they seem to have been for the SIME/DIME study with respect to earlier retirement

Alaska Permanent Fund Dividend

HISTORICAL CONTEXT

In the 1970s, Alaska experienced a large uptick in revenue from oil extraction on state-owned land, particularly in the North Slope region. The oil boom prompted a conversation among citizens and the state government on how best to invest the royalties, particularly after the $900 million sale of an oil lease in 1969 was mostly spent down by the state in the subsequent years. State voters, hoping to seed a rainy day fund to smooth any fluctuations in state revenue collection and spending in the Alaskan boom-or-bust economy, voted in 1976 to create the Alaska Permanent Fund. The state constitutional amendment that created the sovereign wealth fund read as follows:

> At least twenty-five percent of all mineral lease rentals, royalties, royalty sale proceeds, federal mineral revenue sharing payments and bonuses received by the State shall be placed in a permanent fund, the principal of which shall be used only for those income-producing investments specifically designated by law as eligible for permanent fund investments. All income from the permanent fund shall be deposited in the general fund unless otherwise provided by law. (Amendment to Alaska Constitution, Article IX, Section 15)

The Permanent Fund evolved into a basic income-like program—albeit in corporate framing—three years later, when Republican Governor Jay Hammond argued that the state should be thought of as "Alaska Inc.," whose sovereign funds should be treated as stock in a corporation to be divided among all stockholders, or citizens. The initial dividend program designed in 1980 gave larger dividends based on how long recipients resided in the state ($50 per year of residency) so as to "preserve Alaskan cultural characteristics threatened by the oil boom" (O'Brien and Olson 1990). The U.S. Supreme Court quickly determined the dividend formula was unconstitutional in 1982 for its discrimination against newer residents, so the program was redesigned to give an equal amount to all residents thereafter (O'Brien and Olson 1990). Since the payments started in 1982, the program as implemented has always distributed the dividends to all residents,[5] as long as they have resided in Alaska for at least one year. The dividend is distributed to everyone, of any age, without any condition, making it similar to an unconditional basic income.

HOW THE APFD COMPARES TO A "FULL" UBI

☑	Unconditional
☑	No means test
☑	Long Term
☐	Covers basic living expenses
☑	Distributed to everyone within a set region

5 There are some exceptions to eligibility: For example, people who were incarcerated during the prior year as a result of a felony conviction. On the other hand, non-citizens who are permanent residents or refugees are eligible, so the distribution of the dividend is broad based.

The state deposited approximately 21 percent of its oil royalties into the sovereign wealth fund when it was established. As of February 2017, the fund's market value was $56.9 billion (Alaska Permanent Fund Corporation 2017). Each year, the fund distributes around 10 percent of the average of its cash flows over the previous five years (Kueng 2016). The dividend ranges in size depending on the performance of the fund, with the lowest amount being $331 in 1984 and the highest reaching $2,072 in 2015 (Alaska Department of Revenue 2017). The lead-up to the announcement of the dividend amount in mid-September is a frequently discussed topic in the local press, as many eagerly await this annual income boost. The dividend typically arrives in early October and can now be received as a check or a direct deposit, with 96 percent of dividends received by direct deposit (Kueng 2016). In 2016, more than 660,000 individuals received the dividend (Alaska Department of Revenue 2016).

FAST FACTS ABOUT THE ALASKA PERMANENT FUND DIVIDEND	
Number of recipients	660,000 individuals (2016)
Amount of money guaranteed	Ranges from $1,000-$2,000 in recent years
Eligibility	Residency in Alaska the year prior to the dividend
Frequency of cash supplement	Annually
Duration	1982-present

EFFECTS ON THE TIMING OF CONSUMPTION

Two articles investigate the impact of the Alaska Permanent Fund dividend payments on the timing of consumption (Hsieh 2003; Kueng 2015). Both papers are interested in the dividend payments as a way of testing the permanent income hypothesis.[6] Since the payments are predictable, the permanent income hypothesis implies that households should not change their consumption when they receive the payment. It is important to stress that the literature therefore does not measure the impact of the dividend on the overall level of consumption but rather the impact on the timing of consumption during the year.

Using the Consumer Expenditure Survey, Hsieh (2003) argues that Alaskan households do not significantly increase consumption immediately after receiving the dividend payment. In unpublished work, Kueng (2015) revisits this question using detailed transaction data from a large personal finance website. Compared to residents of Washington state, Alaskans spend significantly more on non-durables and services in the month when they receive the dividend payment, and this excess spending persists over the first quarter after the dividend payment. The marginal propensity to consume non-durables and services out of the dividend in the quarter in which it is received is 30 percent, and the total marginal propensity to spend out of the dividend is 78 percent. Kueng shows that the methodology used in Hsieh was unable to identify the effect of the dividend payment due to imprecise measurement of family income in the Consumer Expenditure Survey.

Overall, dividend payments increase the consumption of Alaskans when the payment occurs. While this finding does not measure the total effect of the dividend on consumption, it establishes that the dividend does have an effect on consumption.

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6 The permanent income hypothesis states that consumers will spend money at a level consistent with their expected long-term average income.

EFFECTS ON EMPLOYMENT, HOURS, AND EARNINGS

The impact of the Alaska Permanent Fund on the labor market is a mixture of an income effect and any macro effect of a universal unconditional cash transfer—for example, on labor demand. The income effect alone implies that the Alaskan Permanent Fund dividend payments should decrease labor supply and earnings. However, macro effects could dampen the income effect. First, a decrease in labor supply will tend to increase the equilibrium wage rate, hence limiting any adverse effect on earnings. Furthermore, the dividend increases consumption, which should stimulate labor demand and increase both employment and wages.

In unpublished work, Jones and Marinescu (2017) use a synthetic control method to evaluate the impact of the Alaska Permanent Fund on the labor market in Alaska. The synthetic control method chooses control states to best match Alaska for the outcome of interest and other observable characteristics before the dividend payments begin. This method is thus a refined version of difference-in-differences.

Using the Current Population Survey, Jones and Marinescu (2017) show that the Alaskan Permanent Fund dividend has no impact on the employment-to-population ratio in Alaska. Employment in Alaska closely tracks employment in control states. If the income effect is negative, this result suggests that the positive macro effects of the dividend payments were enough to compensate for any decrease in employment induced by the income effect.

The Alaskan Permanent Fund dividend increases the share of Alaskans who work in part-time jobs by two percentage points. This is consistent with the income effect leading to an intensive margin response, i.e., when people have more income, they tend to work fewer hours.

COMPARISON LIMITATIONS

The dividend payments from the Alaskan Permanent Fund are closely comparable to a true UBI in that they are permanent, unconditional, and universal in Alaska.

The amount of the dividend is relatively small compared to the poverty line. Larger effects on the labor market may be observed for payments at the level of the poverty line that would sustain a person or family without working. With a larger payment, the income effect would be larger, yet any positive macro effects on labor demand would also be larger, so it is unclear whether a larger payment would result in an employment decrease.

Finally, the dividend payments are not financed by taxes or the reduction in spending on existing programs. If the dividend payments had to be financed, the effect on the labor market would also depend on the source of the financing.

Lottery winners

CONTEXT

Lottery payments are a form of unconditional income since there is no requirement in order to receive payment beyond participating in the lottery. Many of the lottery wins are paid in installments, which make them closely comparable to a UBI program. For example, the lottery winners in Massachusetts studied by Imbens, Rubin, and Sacerdote (2001) are paid in yearly installments over 20 years. We focus on studies that approximate a regular unconditional cash transfer program to understand how larger transfer amounts affect various outcomes without a substitution effect (which was present in the NIT experiments).

EFFECTS ON CONSUMPTION

Using a survey of 496 lottery winners in Massachusetts in the mid-1980s, Imbens et al. estimate the effect of cash prizes by comparing "big winners," those who won thousands of dollars in installments, with "small winners," who won a one-time prize of $100–$5,000. This assumes that big winners and small winners are similar, but the authors show there are some differences between the two groups, for which they control. Imbens et al. find that the lottery wins increased consumption of cars and housing.

EFFECTS ON EMPLOYMENT, HOURS, AND EARNINGS

Examining the impact of lottery payments on labor supply and earnings allows for the estimation of the income effect.

Cesarini et al. (2015) use a sample of Swedish lottery participants and administrative data. While Imbens et al. compared small winners to big winners, Cesarini et al. are able to compare winners to non-winners who had played the same lottery in Sweden. Such a comparison is closer to true randomized control trial. The authors find that winning $140,000 decreases the probability of working by about 2 percentage points from a baseline of 77 percent, and the effect is entirely gone after 10 years. Lottery winnings also decrease hours worked by a minimal one hour per week. The decrease in hours is accomplished by staying with the same job and adjusting hours rather than by switching workplaces or occupations. Interestingly, there is no evidence for a non-linear effect in the size of the prize: The labor supply impact is roughly proportional to the lottery win. They estimate a marginal propensity to earn out of unearned income of -0.1, which is consistent with the results from both Imbens et al., and with the income effect estimates from NIT experiments (Robins 1985).

Unlike Cesarini et al., Imbens et al. compare "small winners" to "big winners" and find that Massachusetts recipients' lottery earnings decrease overall earnings, with a marginal propensity to earn out of unearned income of negative 11 percent; in other words, a $100 increase in unearned income induces an $11 decrease in earned income. The effect on earnings is larger for individuals between 55 and 65 years old, and does not differ by education—again pointing in the direction of an early retirement effect, just as the long-term SIME/DIME results reported by Price and Song (2016) did.

Men and women adjusted their labor supply in similar ways after winning the lottery (Imbens et al. 2001; Cesarini et al. 2015). These results are consistent with the NIT experiments finding similar income effects for men and women.

Both studies also show that it takes about two years after the lottery win for people to adjust their labor supply, which gives an idea of how sluggish the adjustment is.

EFFECTS ON HEALTH AND EDUCATION

In a pair of papers from 2015 and 2016, Cesarini et al. show that lottery wealth has no effect on adult or child health outcomes in Sweden. Even among low-income Swedish households, there is no significant improvement in mortality after they win the lottery. Winning the lottery has a few positive health effects (e.g., on the consumption of anxiolytic drugs by adults), but given the number of outcomes tested, it is perhaps not surprising to find some positive effects here and there. Overall, in Sweden, unearned income has little to no effect on health.

Winning the lottery also has no impact on children's grade point average in ninth grade, or on their cognitive and non-cognitive skills in adulthood.

Unearned income does not affect health or education in Sweden, in contrast to the positive results from the NIT experiments and the Native American casino payments in the United States. This difference is likely explained by the fact that Sweden has a generous welfare state and a universal healthcare system.

EFFECTS ON HOUSEHOLD COMPOSITION

Cesarini et al. (2015) do not find an effect of lottery wins on divorce, consistent with the results from the casino payments and the re-analysis of the NIT experiments.

COMPARISON LIMITATIONS

Some of the lottery payments are lump sum rather than in installments, which is different from how a UBI would operate. In Imbens et al. (2001), lottery payments are paid in 20 yearly installments. In Cesarini et al., some lottery payments are lump sum and others are paid in monthly installments. However, Cesarini et al. do not find significantly different labor supply responses for lottery wins paid as a lump-sum transfer relative to lottery wins paid in installments. Therefore, the fact that some lottery payments are lump sum does not affect the estimated impact on labor supply, which ends up being similar in magnitude to what was found in the NIT experiments.

Lottery players in the U.S. are different from the general population (Imbens et al. 2001): In particular, middle-aged people are overrepresented. However, it is reassuring that the impacts estimated by Imbens et al. are similar to those estimated using the NIT experiments, or the more representative sample of the Swedish population used by Cesarini et al.

The biggest limitation is that lottery wins are not universal, unlike, for example, the Alaskan Permanent Fund dividend. Therefore, studies on lottery winners cannot measure the macro impacts of a UBI.

Finally, lottery wins are not financed out of taxation or reduced spending from other programs. Therefore, lotteries are only informative about potential UBI effects in the absence of changes in taxes or other programs.

Experiments in developing countries

Multiple randomized controlled trials involving unconditional cash transfers have been conducted in developing countries. Unconditional cash transfers in a Kenyan experiment significantly increased consumption, especially on food, medical, and education items (Haushofer and Shapiro 2013). The pattern of spending by Kenyan households suggests that the cash transfers were able to alleviate credit constraints, allowing them to invest in assets people need to be productive, like livestock, which can increase earnings in the long term. More broadly, a review of the literature concludes that unconditional cash transfers in developing countries do not increase expenditures on temptation goods, such as alcohol and tobacco (Popova and Evans 2014).

Banerjee et al. (2015) review the evidence on the labor market impacts of these unconditional cash transfer experiments and conclude that they did not reduce employment. Bastagli et al. (2016) review the evidence spanning 2000–2015 from 165 countries' cash transfer programs (both conditional and unconditional) and find that cash transfers are associated with a reduction in child labor and have either no effect or a positive effect on adult labor force participation. Bastagli et al. also find overall reduction in monetary poverty, increased school attendance (not always associated with improved learning), increased health service use and improved dietary diversity (though less evidence of an effect on height and weight), and increased decision-making power for women (though not always a reduction in emotional abuse).

Summary of the findings

Evidence from lottery winners and the Alaska Permanent Fund shows that consumption increases in response to unconditional cash transfers. The negative income tax experiments showed that an NIT has small negative impacts on labor supply and positive impacts on children's education. Casino payments to Native Americans do not affect labor supply but reduce crime and have a positive effect on children's education and mental health. Evidence from lottery winners confirms the small labor supply effects of unconditional cash transfers. Overall, a $100 increase in income leads to an $11 decrease in earnings based on lottery winners and NIT experiment participants, or no decrease at all in the case of the casino payments.

Only the evidence from the Alaska Permanent Fund is informative about universal payments. Indeed, all the other instances involved payments to a small number of individuals. The evidence from the Alaska Permanent Fund shows no effect on employment and an increase in part-time work. The employment results suggest positive macro effects of a universal payment.

The most serious limitation of the existing body of evidence is that it does not address the impact of the source of financing on outcomes. If a UBI is financed through higher taxes, the effects of these additional taxes need to be taken into account. If, on the other hand, a UBI is financed through a decrease in other expenditures, the effect of such a decrease again needs to be evaluated. One could use existing evidence on the impact of tax increases and expenditure decreases to approximate the effects. However, this may give an incomplete picture if there are interaction effects between a UBI and taxes, or a UBI and other expenditures.

Bibliography

Aizer, Anna, Shari Eli, Joseph Ferrie, and Adriana Lleras-Muney. 2016. “The Long-Run Impact of Cash Transfers to Poor Families.” American Economic Review 106 (4): 935–71. doi:10.1257/aer.20140529.

Akee, Randall, William E. Copeland, Gordan Keeler, Adrian Angold, and E. Jane Costello. 2010. “Parents’ Incomes and Children’s Outcomes: A Quasi Experiment Using Transfer Payments from Casino Profits.” American Economic Journal: Applied Economics 2(1): 86-115.

Alaska Department of Revenue. 2016. “Applicant Database.” Permanent Fund Dividend Division. https://pfd.alaska.gov/Division-Info/Applicant-Database (Accessed February 21, 2017).

Alaska Department of Revenue. 2016. “Summary of Dividend Applications & Payments.” Permanent Fund Dividend Division. http://pfd.alaska.gov/Division-Info/Summary-of-Applications-and-Payments (Accessed February 21, 2017).

Alaska Permanent Fund Corporation. 2017. “Fund Market Value.” http://www.apfc.org/home/Content/home/index.cfm (Accessed February 22, 2017).

Alaska Permanent Fund Corporation. N.d. “Alaska Constitution and Law Pertaining to the Permanent Fund: Alaska Constitution Article IX, Section 15.” http://www.apfc.org/home/Content/aboutAPFC/constAndLaw.cfm (Accessed February 21, 2017).

Ashenfelter, Orley, and Mark W. Plant. 1990. “Nonparametric Estimates of the Labor-Supply Effects of Negative Income Tax Programs.” Journal of Labor Economics 8 (1): S396–415.

Banerjee, Abhijit V., Rema Hanna, Gabriel Kreindler, and Benjamin A. Olken. 2015. “Debunking the Stereotype of the Lazy Welfare Recipient: Evidence from Cash Transfer Programs Worldwide.” http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2703447.

Bastagli, Francesca, Jessica Hagen-Zanker, Luke Harman, Georgia Sturge, Valentina Barca, Tanja Schmidt, and Luca Pellerano. 2016. “Cash transfers: what does the evidence say? A rigorous review of impacts and the role of design and implementation features.” Overseas Development Institute. https://www.odi.org/publications/10505-cash-transfers-what-does-evidence-say-rigorous-review-impacts-and-role-design-and-implementation (Accessed March 9, 2017).

Burtless, Gary. 1986. “The work response to a guaranteed income: A survey of experimental evidence.” In Conference Series Proceedings, No. 30, pp. 22-59. Federal Reserve Bank of Boston.

Center for Native American Youth. N.d. “Fast Facts on Native American Youth and Indian Country.” New York, NY: Aspen Institute. https://assets.aspeninstitute.org/content/uploads/files/content/images/Fast%20Facts.pdf (Accessed March 20, 2017).

Cesarini, David, Erik Lindqvist, Matthew J. Notowidigdo, and Robert Östling. 2015. “The Effect of Wealth on Individual and Household Labor Supply: Evidence from Swedish Lotteries.” National Bureau of Economic Research. http://www.nber.org/papers/w21762

Cesarini, David, Erik Lindqvist, Robert Östling, and Björn Wallace. 2016. “Wealth, Health, and Child Development: Evidence from Administrative Data on Swedish Lottery Players.” The Quarterly Journal of Economics 131 (2): 687–738. doi:10.1093/qje/qjw001.

Colombino, Ugo. 2015. “Is Unconditional Basic Income a Viable Alternative to Other Social Welfare Measures?” IZA World of Labor, February. doi:10.15185/izawol.128.

Costello, E. Jane, Alaattin Erkanli, William Copeland, and Adrian Angold. 2010. “Association of Family Income Supplements in Adolescence with Development of Psychiatric and Substance Use Disorders in Adulthood among an American Indian Population.” JAMA: The Journal of the American Medical Association 303 (19): 1954–60.

Evans, David K., and Anna Popova. “Cash transfers and temptation goods: a review of global evidence.” World Bank Policy Research Working Paper 6886 (2014). http://documents.worldbank.org/curated/en/617631468001808739/pdf/WPS6886.pdf (Accessed February 21, 2017).

Forget, E.L., 2011. “THE TOWN WITH NO POVERTY: Using Health Administration Data to Revisit Outcomes of a Canadian Guaranteed Annual Income Field Experiment.” Canadian Public Policy 37 (3):283-305.

GiveDirectly. N.d. “Research on Cash Transfers.” New York, NY: GiveDirectly. https://www.givedirectly.org/research-on-cash-transfers (Accessed March 20, 2017).

Haushofer, Johannes, and Jeremy Shapiro. 2013. “Household response to income changes: Evidence from an unconditional cash transfer program in Kenya.” Massachusetts Institute of Technology.

Hsieh, Chang-Tai. 2003. “Do Consumers React to Anticipated Income Changes? Evidence from the Alaska Permanent Fund.” The American Economic Review 93 (1): 397–405.

Hum, Derek and Wayne Simpson. 1993. “Economic Response to a Guaranteed Annual Income: Experience from Canada and the United States.” Journal of Labor Economics 11 (1): S263–96.

Imbens, Guido W., Donald B. Rubin, and Bruce I. Sacerdote. 2001. “Estimating the Effect of Unearned Income on Labor Earnings, Savings, and Consumption: Evidence from a Survey of Lottery Players.” American Economic Review 91 (4): 778–94.

Imbens, Guido W. and Wooldridge. 2007. “What’s New in Econometrics? Differences-in-Differences Estimation.” Lecture Notes 10, NBER Summer Institute. http://www.nber.org/WNE/lect_10_diffindiffs.pdf (Accessed March 27, 2017).

Jones, Damon and Ioana Marinescu. 2017. “The Labor Market Impacts of Universal and Permanent Cash Transfers: Evidence from the Alaska Permanent Fund.” Working paper,.

Kueng, Lorenz. 2015. “Explaining Consumption Excess Sensitivity with Near-Rationality: Evidence from Large Predetermined Payments.” Working Paper 21772. National Bureau of Economic Research. http://www.nber.org/papers/w21772.

Maynard, Rebecca A., and Richard J. Murnane. 1979. “The Effects of a Negative Income Tax on School Performance: Results of an Experiment.” The Journal of Human Resources 14(4): 463–76.

Munnell, Alicia H. 1986. “Lessons from the Income Maintenance Experiments: An Overview.” In Conference Series [Proceedings], No. 30. Pp 1-21.

O’Brien, J. Patrick and Dennis O. Olson. 1990. “The Alaska Permanent Fund and Dividend Distribution Program.” Public Finance Review 18(2): 139-156.

Price, David J. and Jae Song. 2016. “The Long-Term Effects of Cash Assistance: A Forty-Year Follow-up of the Income Maintenance Experiments.” Job market paper. http://web.stanford.edu/~djprice/papers/djprice_jmp.pdf (Accessed November 21, 2016).

Robins, Philip K. 1985. “A Comparison of the Labor Supply Findings from the Four Negative Income Tax Experiments.” The Journal of Human Resources 20 (4): 567–82.

Rothstein, Jesse. 2010. “Is the EITC as Good as an NIT? Conditional Cash Transfers and Tax Incidence.” American Economic Journal: Economic Policy 2 (1): 177–208. doi:10.1257/pol.2.1.177.

Salkind, Neil J. and Ron Haskins. 1982. “Negative Income Tax: The Impact on Children from Low Income Families.” Journal of Family Issues 3(2):165-180.

Thigpen, David. 2016. “Universal Basic Income: What Is It, and Is It Right for the U.S.?” New York, NY: Roosevelt Institute. http://rooseveltinstitute.org/universal-basic income-what-it-and-it-right-u-s/ (Accessed February 21, 2017).

Widerquist, Karl. 2005. “A failure to communicate: What (if anything) Can We Learn from the Negative Income Tax Experiments?” The Journal of Socio Economics 34(1):49-81.

Wolfe, Barbara, Jessica Jakubowski, Robert Haveman, and Marissa Courey. 2012. “The Income and Health Effects of Tribal Casino Gaming on American Indians.” Demography 49 (2): 499–524. doi:10.1007/s13524-012-0098-8.