The Economic Impact of a Universal Basic Income

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At various times throughout our nation's history, a wave of collectivist sentiment has swept the country. These waves, born out of a deep disenchantment with current circumstances, are often characterized by a fervent, but mistaken, belief that society can be improved by subordinating the interest of the individual to centralized government control. We are experiencing such a collectivist wave today. Riding atop this populist wave is a strong sentiment that government should use its power to tax to redistribute income from rich to poor. A popular policy instrument for this redistribution is the universal basic income (UBI).

In the last few years, interest in the policy has seen a resurgence. Democratic presidential candidate Andrew Yang made it the centerpiece of his campaign. UBI experiments are now being conducted in Sweden, South Korea, the Netherlands, and Kenya. In the United States, Stockton, California, is currently running a pilot project and the cities of Compton, California, and Hudson, New York, are scheduled to begin pilot projects before the end of 2020.[1] A Hill-HarrisX poll in August 2020 found that 55 percent of all surveyed persons, and 69 percent of those age 18–34, supported a UBI.[2]

Proponents of a national UBI argue that the policy would represent a substantial improvement over the current transfer system. They expect that a UBI will provide an adequate standard of living for all while reducing the stigma attached to existing transfer programs. Moreover, supporters believe that compared with existing assistance programs, a UBI would better target those in need and reduce work disincentives.

In this paper, we consider whether various UBI plans could meet these ambitious goals. Using data from the Current Population Survey (CPS) and TAXSIM, we analyze the impact of various proposed national US UBI plans on aggregate labor supply, the distribution of household income, and the federal budget. Specifically, we examine two types of UBI plans, both of which are designed to eliminate poverty. First, we explore an idealized plan that would replace the entire federal transfer system with a poverty-level UBI benefit to all households regardless of income. Second, we explore a prototype UBI plan that would offer a poverty-level benefit that would phase out as earnings rise. The prototype UBI plan would replace cash and near-cash means-tested federal transfer programs and federal disability programs. Our analysis quantifies the inherent tradeoffs in UBI plans with regard to the adequacy of benefits, the degree of work incentives, and the fiscal impact. We find that neither plan would meet the objectives of UBI proponents.

Government expenditures under the idealized plan would be approximately the same as those of the income transfer programs it would replace. The plan would also marginally improve work incentives compared to the current system. However, because the idealized plan does not phase out assistance as earnings rise, it would significantly redistribute government assistance from poor to rich households; precisely the opposite of the goal of UBI proponents. Government assistance to the poorest fifth of US households would be reduced by more than 50 percent. Senior citizens receiving Social Security and Medicare benefits would bear a disproportionate share of this reduction. About three-fourths of the current transfer system's assistance would be shifted to the richest fifth of households. Thus, even if the substantial political hurdles of eliminating Social Security and Medicare could be overcome, the idealized UBI fails to achieve its goal of improving the targeting of government assistance.

In contrast, the prototype UBI plan, which phases out assistance by 50 percent as earnings rise, would better target government assistance to the poor. But the phase-out would worsen work incentives compared with the current system and thereby reduce US aggregate labor supply. Like the change in the distribution of government assistance, the impact of the UBI on aggregate labor supply is modest, a reduction of 2.6 percent. Annual federal government transfer payments under the prototype plan would exceed those of the current system by about $200 billion, necessitating either a permanent increase in taxes or government borrowing, or some combination of the two. Despite the increased outlays, the prototype plan's impact on the transfer system would be surprisingly small. Under the prototype UBI, the share of government assistance to the poorest fifth of US households would increase by only 8 percent compared to the current system.

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We explore alternatives to the prototype plans to ascertain the impact of lowering the phase-out rate and reducing the basic income guarantee. This analysis sheds further light on the tradeoffs inherent in a UBI. Reducing the prototype plan's phase-out rate to 25 percent actually worsens aggregate work incentives. Although work incentives for prototype plan recipients would improve, the lower phase-out rate would increase the number of workers receiving UBI assistance. Each of these new recipients would face the alternative plan's 25 percent work disincentive. We also consider a deficit-neutral plan that would reduce the guaranteed benefit to 80 percent of the poverty line. Since this plan would cover fewer households than the prototype plan, the aggregate labor supply effects would be smaller. The lower benefit levels, however, would leave some households in poverty.

The paper is organized as follows: Section II describes how the UBI works and the major conceptual arguments for and against a national UBI. Section III assesses the fiscal, economic, and distributional impacts of the idealized UBI plan. Section IV describes attempts to enact a UBI during the Nixon and Carter Administrations. Section V presents empirical estimates of the impact of a proto-typical UBI plan and its variants. Section VI offers some concluding thoughts on the viability of a national UBI plan.

What is a Universal Basic Income?

In its most elemental form, the UBI offers a nationally uniform annual cash grant from the federal government to all individuals. This cash grant serves as a government-guaranteed floor on recipients' income. The grant comes with no strings attached; that is, it is given without requiring recipients to take responsibility for self-support or self-improvement.

The UBI has a long intellectual lineage. Scholars from Thomas Paine in the late 1700s to Milton Friedman, James Tobin, and Robert Theobald in the twentieth century have developed the conceptual rationale for the UBI, enumerated its advantages, and advocated its adoption. Progressives have long believed that all individuals have a basic human right to a decent standard of living in the form of adequate housing, nutrition, and health care. A universal basic income is a means of ensuring this basic right. Furthermore, because aid is available on equal terms to all individuals, there is no stigma and, therefore, no loss of dignity attached to receiving its benefits. Progressives are also attracted by the fact that the UBI allows recipients more flexibility to devote less time to work and more time to activities that enhance their quality of life, including obtaining more education and enjoying cultural or recreational activities. Some advocates go so far as to assert that a UBI will encourage labor market participation, rather than discouraging it as existing welfare programs do.

Conservatives are similarly attracted by the fact that the UBI allows recipients to decide for themselves how much of each of the elements of a decent living standard they prefer. This feature makes the UBI a less paternalistic system by allowing individuals more freedom of choice than a system that provides aid in the form of in-kind benefits. Conservatives are also attracted by the UBI's potential to replace income transfer programs that have large work disincentives.

At this conceptual level, the critique of the UBI centers on three of its misconceptions, two of which are misconceptions of human nature. First, UBI proponents presume that it doesn't matter whether individuals enjoy a level of material well-being through their own efforts or from government-mandated payments from others. This ignores a crucial facet of living a fulfilled life, namely that an individual's efforts and sacrifices to achieve a personal goal are essential to that person's sense of self-worth. It is the striving to reach a personal goal, more than achieving a level of material well-being, that provides life's true rewards.

A second misconception is that unconditional aid will not dampen the natural human desire for self-reliance and self-improvement. In reality, individuals receiving such aid have less reason to provide for themselves by being employed, looking for employment, or improving their skills. This is true regardless of whether or not the UBI has a means test. The degree to which these incentives influence behavior may vary from one person to another, but they operate on all persons, including those with a strong commitment to self-reliance. Recognition of this fundamental fact of human nature is the reason that down through the ages, charities, mutual aid societies, religious organizations, and governments have made requirements for self-improvement a cornerstone of their welfare policies.

A third misconception is that the money to finance the UBI comes from the government. Government is merely a pass-through entity that transfers income from some members of society to UBI recipients. Such transfers, of course, take place in all compassionate societies, but they have invariably been accompanied by requirements that recipients accept corresponding responsibilities. Governmentally conferred welfare rights must necessarily be accompanied by governmentally imposed duties on recipients or other members of society. Under the UBI, the

government confers a right to a decent living standard, but imposes no corresponding responsibilities on recipients. At the same time, it assumes that others should finance this living standard through their own labor. Such a policy divides a society between payers and recipients, potentially leading to resentment and discontentment. Providing individuals with free access to goods and services produced by other members of the society is a defining attribute of socialism. In this regard, the UBI is part and parcel of socialist policy.

These criticisms notwithstanding, advocates argue that a UBI would still be an improvement over the current income transfer system. They point out that compared with the current system, UBI assistance carries less of a stigma and is less paternalistic; its greater transparency increases the ability of government to redistribute income according to its desires; and since it could be administered by a computer, it is more efficient.

The advocates have a point. Today's federal income transfer system consists of more than a hundred separate federal programs that are spread across more than a dozen separate government agencies; each with its own bureaucracy and administrative costs. Income transfer programs have been added in piecemeal fashion over the past eight decades, each to meet some specific need at a point in time. The result is a complex web of highly inefficient, often overlapping programs that provide a wide variety of uncoordinated cash and in-kind benefits to persons located across the range of the US income distribution. Some programs base eligibility on demographic characteristics, some on income, others also on assets. Some take account of aid received from other programs, others do not. Some federal programs are administered by the federal government, others by state governments, and still others by local governments.

The system includes separate cash assistance programs for retirees, the disabled, low-income families with children, farmers, and low-income veterans; income supplements for low-wage workers and supplemental child-support payments to single mothers; health care assistance for the elderly, the disabled, the homeless, and millions of middle-class individuals; home ownership subsidies and separate rental and public housing assistance. There are energy subsidies for home heating in the winter, air-conditioning in the summer, and weatherizing homes in all seasons; food assistance for daily groceries, school lunches, breakfasts, and afternoon snacks; job and vocational training and work experience assistance; day care assistance; foster care subsidies; higher education student grants and subsidized loans; rehabilitation assistance for the disabled; and a variety of social services including legal aid, family planning, recreational support, transportation subsidies, and financial counseling services.

This mind-numbingly complex system transferred about $2.8 trillion from one group in society to another in 2019, most of it without regard to recipients' income. That year, over 60 percent of all US households received cash or in-kind benefits from at least one federal entitlement program; 47 percent received benefits simultaneously from two or more programs and 21 percent received benefits from three or more programs. Excluding households headed by persons age 65 and older, virtually all of whom receive Social Security or Medicare, 49 percent of US households received benefits from at least one federal entitlement program.

Most assistance has little to do with alleviating poverty.[3] In 2019, nearly 55 percent of assistance went to households in the middle three income quintiles, and over 10 percent went to the top quintile. More than $700 billion was distributed to households in the upper half of the income distribution. In this paternalistic system, slightly over half of all assistance is provided in the form of in-kind benefits.

Numerous studies have documented the large work disincentives that accompany the system's transfers, especially those from its means-tested programs. The Supplemental Nutrition Assistance Program (SNAP, also known as the food stamp program) imposes a 24 percent marginal tax rate, the Temporary Assistance for Needy Families (TANF) program approximately a 50 percent marginal tax rate, and the Supplemental Security Income (SSI) program a 100 percent marginal tax rate. The subsidies for health insurance under the Affordable Care Act (ACA) have a marginal tax rate that ranges from 10 to 15 percent. The Medicaid program has a sudden death provision that terminates eligibility once a family's income or assets exceed a certain threshold. The resulting loss of family health benefits could easily be worth a few thousand dollars per year. Work disincentives are not limited to means-tested programs. Unemployment insurance and Social Security disability benefits also contain large work penalties. The Earned Income Tax Credit (EITC), by supplementing earnings of low-income workers, creates a positive work incentive for some workers. However, because its benefits eventually phase out, the program creates a work disincentive for others. The work disincentives are exacerbated when families receive benefits from more than one program at a time, or when a program such as the EITC provides benefits to families who are also paying federal income and payroll taxes.

The system's work disincentives affect a large portion of the US working age population. In 2019, seventy-one million persons, constituting nearly 40 percent of the working age population (age 21–64), lived in households that received benefits from at least one means-tested entitlement program. Half of this large group faced a marginal tax rate greater than 33 percent, excluding Medicaid and the ACA. Forty percent faced a marginal tax rate greater than 40 percent. These high marginal tax rates among a significant fraction of prime age workers are now large enough to lower the US labor force participation rate, aggregate US productivity, and human capital formation, ultimately reducing the nation's economic output.

An Idealized UBI Plan

The existing income transfer system's deficiencies would seem to make a powerful case for a UBI as an alternative. But the power of the case depends on how the UBI is structured and how much of the existing transfer system it would replace. We begin with a consideration of an idealized UBI.

The idealized plan would replace the entire federal system of income transfer programs. In its place, the plan would make an annual basic income available to all persons regardless of their earned income and would not have any phase-down provision. The plan's annual income guarantee would be set in accordance with the ambitious goal of eliminating US poverty. Households would receive an annual cash payment equal to their poverty threshold.[4] These thresholds vary by household size, age of the householder, and the number of children under 18.[5] Table 1 summarizes the policy parameters of the idealized UBI.

Table 1. The idealized UBI

Maximum benefit	100% of poverty line
One-person HH*	$13,300
Four-person HH*	$25,926
Phase-out rate	0%
Programs eliminated	All federal transfer programs

*Households with a head of household under age 65

The major programs that the idealized plan would replace and their expenditures in 2019 are presented in table 2. The programs are broken down into social insurance programs, which typically do not have a significant phase-down provision, and means-tested programs, which have phase-down provisions. As the bottom line of the table shows, the federal expenditure savings from eliminating these programs would total almost $2.8 trillion.

Table 2. Federal income transfer programs and expenditures, 2019 (in billions)

Social Insurance Programs	Outlays	Means-Tested Programs	Outlays
SS Retirement (OASI)	$898	Medicaid	$427
SS Disability Insurance (SSDI)	$146	Affordable Care Act (ACA)	$56
Medicare	$651	Veterans benefits (cash and health care)	$200
Unemployment Insurance	$28	SNAP (food stamps)	$63
		Children's nutrition programs	$24
		Housing assistance	$49
		Tax credits	$99
		Supplemental Security Income (SSI)	$56
		TANF and family support	$32
		Other programs	$47
Total	**$1,723**	**Total**	**$1,054**

Notes: Medicaid includes the Child Health Insurance Program (CHIP). Veterans benefits include all cash and health care benefits. TANF is the Temporary Assistant to Needy Families program. Tax credits include the Earned Income Tax Credit and the Child Tax Credit. Housing assistance includes public housing, Section 8 (the housing choice voucher program), and related federal programs. Other programs include discretionary energy assistance; the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC); training, employment, and social services; and other smaller income security programs.

Our assessment of the UBI's impact is based on data from the 2020 Annual Social and Economic Supplement of the Current Population Survey.[6] The survey provides detailed economic and demographic information on about 60,000 US households and serves as the federal government's primary source of information on US household income, poverty, and labor force behavior.[7] Income and work data in the CPS correspond to 2019 annual values. We supplement the CPS

data with tax imputations from TAXSIM, the widely used tax model from the National Bureau of Economic Research, to create a nationally representative sample of household incomes, labor supply, income transfer program participation status, and tax rates.[8]

The CPS and TAXSIM also allow us to calculate how each household's income would be affected by a UBI program that replaces existing income transfer programs. Our assessment includes both static and dynamic estimates. The static estimates assume that household members do not respond to the change in work incentives from replacing existing income transfer programs with a UBI. The dynamic estimates assume individuals change their labor supply in response to the changes in income and effective marginal tax rates.[9]

The issue of labor supply responses to changes in wages, non-wage income, and tax rates has been the subject of extensive economic analysis. This rich body of research has produced a strong consensus around a modest range of empirical estimates. A 10 percent decrease in wages, or equivalently a 10 percent increase in a worker's marginal tax rate, reduces a primary workers' hours of work by between 1.5 and 3.5 percent. The same change in the wage or tax rate will reduce a secondary workers' hours of work by between 2.2 percent and 4.2 percent. For both types of workers, a 10 percent increase in income (without any change in wages) reduces hours of work by about 0.5 percent.[10]

In our dynamic analysis of the idealized UBI plans, the elimination of existing transfer system programs affects labor supply, as a general rule, by lowering the marginal tax rate and non-wage income of household members who are receiving government transfers from these programs.[11] Both of these changes would, all else equal, increase labor supply among these household members. The idealized UBI's income guarantee, however, reduces labor supply by increasing the non-wage income of all households. Thus, the aggregate labor supply impact of the idealized UBI is theoretically ambiguous.

Our dynamic analysis uses the mid-point of the aforementioned ranges to estimate the change in hours of work due to changes in marginal tax rates for primary and secondary workers separately. To capture the guaranteed income's impact, the dynamic analysis uses the aforementioned response to non-wage income.[12] When we turn to analysis of the prototype plan, which contains a phase-down provision that alters marginal tax rates, the same empirical measures are used.[13]

Table 3. The current transfer system and an idealized UBI

	Current System	Idealized UBI
Poverty rate (including in-kind benefits)	3.3%	0.1%
Outlays (in billions)	$2,777	$2,797
Share of transfers by quintile…		
Bottom quintile	35.0%	16.2%
Middle three quintiles	54.8%	59.4%
Top quintile	10.2%	24.4%

Table 3 shows how the idealized UBI compares to the existing federal transfer system. The plan would succeed in virtually eliminating poverty.[14] Throughout this paper, the poverty rate is calculated by including the market value of in-kind benefits as countable income. Since the UBI replaces in-kind benefits with cash, excluding these benefits from the poverty calculation would exaggerate the poverty reduction from the UBI. In table 3, the poverty rate declines from 3.3 percent to a negligible fraction of the population.[15] The idealized plan would also be self-financing as total UBI expenditures would be roughly the same as those of the programs it replaces.

As a general rule, a UBI program that replaces the existing transfer system reduces the amount of assistance provided to beneficiaries of current transfer programs. These beneficiaries are usually lower-income households. The UBI spreads the savings across a far larger group of households that are not current recipients of transfer programs and usually have higher incomes. This general tendency is manifested by our idealized UBI plan. Table 3 shows the share of government assistance going to households in various quintiles of the income distribution. To show the distributional impact of the idealized plan, households are placed in quintiles according to their income in the absence of any government assistance. The plan shifts the distribution of government assistance sharply away from lower- to higher-income households. The share of government assistance going to households in the bottom quintile would decline from 35 percent in the current system to 16 percent under the idealized UBI; a $530 billion reduction in government assistance. Meanwhile, households in the top quintile would receive 24.4 percent of all federal transfer spending under the UBI compared to only 10 percent in the current system, an increase of $400 billion.[16]

The idealized plan would also shift a substantial amount of government assistance from senior citizens to the rest of the population. At the aggregate level, about $850 billion would

be transferred annually from households headed by a senior citizen. Over 85 percent of all senior citizen households would receive less in UBI payments than the value of benefits they receive in the current transfer system. The vast majority of the reduction comes from the loss of Social Security and Medicare benefits. To see this clearly, consider the benefits of a married couple with typical lifetime earnings who begin collecting Social Security benefits in 2019 at age 66. This household receives $44,000 in Social Security benefits per year. They also qualify for Medicare, the annual insurance value of which is about $11,000 per enrollee. In place of this $66,000, the household would receive the idealized UBI plan's poverty-level income guarantee of just $15,453.

As we noted earlier, the impact of the idealized plan on labor supply is theoretically ambiguous. Under our idealized plan, aggregate labor supply would increase slightly, by 1.8 percent among workers of all ages (see table 4). GDP would rise, but only by approximately 0.2 percent.[17] Given the numerous elasticities employed in our analysis and the large distributional impacts of the policy, there are a multitude of factors that could account for the labor supply increase. But the simplest explanation stems from the fact that the policy is budget neutral. With budget neutrality, the additional payments to some individuals are offset by equal payment reductions to others. Correspondingly, the labor supply responses to these increases and decreases offset one another. This leaves the reduction in marginal tax rates from the elimination of existing transfer programs as the primary driver of changes in labor supply.[18]

Table 4. Labor supply effects of the Idealized UBI

Share of tax units with…	
Lower MTRs (marginal tax rates)	22.6%
Higher MTRs	5.3%
Labor supply effects among…	
All workers	1.8%
Workers age 21–64	1.2%
Effect on GDP	0.1%

The smaller labor supply increase among workers age 21–64 in table 4 implies a larger labor supply response among persons age 65 and older. The underlying labor supply estimates used in our analysis do not distinguish among workers by age, so the elasticity used for seniors is assumed to be the same as that for prime age workers. Under this assumption, the large relative increase among senior citizens is a consequence of their relatively large reduction in non-wage income due primarily to the loss of Social Security and Medicare benefits. Our estimated labor supply response overstates the change among seniors who are currently out of the workforce if, as is likely, seniors are less responsive to changes in their income than non-seniors.

The prospects for congressional enactment of a UBI plan that shifts more than $500 billion in government aid per year away from the poorest fifth of households to middle- and upper-income households and also reduces aggregate labor supply and GDP are, at best, slim. Additionally, eliminating or replacing any government program has always been an uphill battle. Ronald Reagan once remarked that "a government bureau is the nearest thing to eternal life we'll ever see on this earth." The same could be said about government programs. But the programs to be replaced by the idealized UBI plan are a particularly formidable group. Social Security, the granddaddy of all federal entitlement programs, has long been regarded as "the third rail of American politics." Politicians who tamper with its benefits have done so at their own political peril. While some may view eliminating Social Security as within the realm of political feasibility, it would be an extraordinary undertaking. Similarly, eliminating Medicare, Medicaid, and the Affordable Care Act, which together provide health care assistance to over 110 million people, and instead providing those people with cash assistance to purchase private insurance, seems implausible without a complete overhaul of the US health insurance system.

The adverse impacts of the idealized UBI plan help us understand why no US president has proposed, nor has any US Congress debated, a national UBI plan that would replace the entire US transfer system, despite the fact that UBI plans have been around for a long time and have an impressive intellectual lineage.

The aforementioned drawbacks lead us naturally to a consideration of alternative, scaled-down UBI plans. What would a more practical plan look like? How would the UBI be structured and which federal transfer programs would it replace? Could such a plan correct the deficiencies of the current income transfer system? To provide some guidance, we can look to the historical record.

Previous Attempts to Enact a UBI

There have been two notable attempts in US history to enact national UBI plans. President Nixon and President Carter both proposed a guaranteed annual income as major

presidential initiatives. Initially, both proposals were warmly greeted by Congress and the national press. But once the details of the proposals became clear, support turned into opposition and Congress ultimately rejected both plans. The failure of these proposals contains important lessons for the design of any national universal basic income plan.

A guaranteed annual income was the centerpiece of both presidents' plans to overhaul the existing welfare system. Both presidents viewed the welfare system as a failure. President Nixon charged that, "It breaks up homes. It often penalizes work. It robs recipients of dignity. And it grows." President Carter declared that "the welfare system is anti-work, anti-family, inequitable in its treatment of the poor and wasteful of taxpayers' dollars." Both presidents proposed a guaranteed annual income that would phase down as incomes rose to replace this failed system.[19]

The Nixon plan set the annual income guarantee at about 40 percent of the poverty line. The Carter plan set the income floor between 40 percent and 65 percent depending on the whether the household head was expected to work or not. Both plans contained an income disregard that allowed households to earn a specified amount before benefits would be reduced. President Carter, having learned from earlier criticism of the work disincentives in the Nixon plan, set the income disregard at a much higher level. Both plans reduced the amount of assistance by 50 percent for each dollar of earned income above the disregard. Assistance phased out completely when a household's income equaled or nearly equaled the poverty line.

Despite the promises to replace existing welfare programs, both presidential plans left the vast majority of the existing system intact. Both plans initially proposed to eliminate only federal cash and near-cash means-tested welfare programs, specifically food stamps (now SNAP), Aid to Families with Dependent Children (now TANF), Old-Age Assistance, Aid to the Blind, and Aid to the Totally and Permanently Disabled (now Supplemental Security Income or SSI). After political opposition, President Nixon reversed course and retained the food stamp program. President Carter's plan also eliminated low-income energy assistance. Neither plan eliminated existing means-tested in-kind benefit programs, such as Medicaid, housing assistance, child and elderly nutrition programs, and college tuition subsidies.[20] Neither plan would replace the vast array of Great Society child and social welfare services for the poor and near-poor. Neither plan would eliminate the large social insurance programs, such as Social Security, Medicare, Railroad Retirement, disability and unemployment benefits, and black lung benefits for coal miners. In terms of federal dollars, the Nixon and Carter plans would replace only a small portion of the existing welfare system.

As a result, both plans added their guaranteed annual incomes on top of, rather than in place of, the existing network of income transfer programs. This, more than any other factor, caused the proposals' downfall. Both presidents had staked much of their case for reforms on the grounds that they would improve work incentives and shrink the size of the existing welfare system. But layering the guaranteed income plan on top of existing programs added a 50 percent earnings penalty on top of the existing system's earnings penalties. This increased effective marginal tax rates faced by many families and thereby worsened work incentives. In the Nixon plan, for example, the marginal tax rates were at least 70 percent and could exceed 100 percent for families who received income support from his plan and assistance from at least one other welfare program. These high marginal tax rates led Milton Friedman to drop his support for Nixon's plan, declaring it to be "a striking example of how to spoil a good idea."[21] The Carter plan, despite its large income disregard, imposed similarly high marginal tax rates on recipient households.[22] Additionally, the high income disregard raised the income threshold for households to qualify for assistance payments. The higher threshold added millions of individuals to the ranks of those receiving government aid, thereby creating a new work disincentive for a large additional segment of the working population.

The large work disincentives among persons receiving assistance would cause a sizeable reduction in labor supply. This was not a hypothetical idea. The federal government had begun several large negative income tax social experiments in the late 1960s. The results of these experiments were just becoming available when President Nixon introduced his proposal. By the time President Carter introduced his plan, the labor supply impact from these experiments had been widely disseminated. They played an important role in official government assessments of his plan. These experiments, and a large body of evidence from non-experimental data, showed that high marginal tax created a statistically significant and, in most cases, a large negative impact on labor supply. The reduction in work ran counter to central claims by the Nixon and Carter Administrations that their plans would improve work incentives.

An additional factor contributed to the Carter plan's defeat. Research results showing that negative income tax programs

increased marital instability were the final nail in the coffin containing President Carter's welfare reform plan. These results, which have stood the test of time, are relevant to UBI proposals today.

The experience with the Nixon and Carter proposals provides some lessons for designing a UBI that would constitute all, or part, of a new US income transfer system. Both UBI plans focused solely on reforming the welfare system, as opposed to the entire income transfer system. Thus, neither program contemplated replacing large social insurance programs, such as Social Security, Medicare, disability, and unemployment insurance. Within the welfare system, neither proposal was willing to replace the in-kind benefit programs that provide health care, nutrition, housing, and social services benefits to the poor and near-poor. Neither proposal attempted to guarantee an annual income equal to the poverty line. Because the cost of doing so was prohibitive, both plans settled for a goal less ambitious than the eradication of poverty. In both proposals, the 50 percent phase-out rate, on top of the work disincentives of remaining programs, imposed work penalties on many recipients that Congress found unacceptably high.

Analysis of Prototype UBI Plans

The experience with the Nixon and Carter plans shows that designing a workable UBI requires confronting important and inescapable tradeoffs between the adequacy of benefits, work incentives, and the number of households that receive government aid. The adequacy of benefits for the poorest members of society is determined largely by the level of the basic income guarantee. Work incentives are determined primarily by the rate at which UBI assistance is phased down as earned income, i.e., income from non-governmental sources, rises.[23] The number of individuals receiving UBI aid and the adequacy of benefits for non-poor individuals are determined by a combination of the two. Work incentives and the program's level of support for low-wage workers can be improved by more slowly phasing down UBI assistance as earned income rises. But a lower phase-down rate necessarily increases both the number of individuals receiving government assistance and the total cost of assistance. The program's cost to taxpayers can be reduced by lowering the guaranteed benefit, but this reduces the adequacy of benefits, both for the poor and for low-wage workers.

To explore the magnitude of these tradeoffs, this section presents an empirical analysis of a prototype UBI plan and modifications to it. As with the idealized UBI plan, the analysis uses data from the 2020 Current Population Survey and TAXSIM to assess the prototype plan's impact on the poverty rate, the number of persons who received government assistance payment and the total cost to taxpayers, the marginal tax rates on recipients, and the impact of these rates on labor supply and GDP.

Like the idealized plan, the prototype plan has an ambitious goal: eliminating poverty. To achieve this goal, the program's basic income guarantee for each household is set at the household's poverty threshold. For a household headed by a single person under age 65, this annual amount is $13,300. For a household of four with two children and no person age 65 or older, the annual amount is $25,926. Our prototype plan phases down assistance by 50 cents for each dollar of earned income.[24] Table 5 summarizes the prototype UBI's policy parameters.

Table 5. The prototype UBI

Maximum benefit	100% of poverty line
One-person HH*	$13,300
Four-person HH (with two children)*	$25,926
Phase-out rate	50%
Programs eliminated	EITC, Additional Child Tax Credit, SSI, SNAP, SSDI, TANF, and Housing Assistance
2019 outlays of eliminated programs (in billions)	$445.0

* Households headed by a person under age 65

Following President Nixon and Carter, the plan's objective is to replace most spending on federal means-tested cash and near-cash assistance programs.[25] Although such a plan seems like it would replace most of the welfare system, it actually would replace only a modest fraction of it, and even less of the entire federal income transfer system. This is because the major social insurance programs account for nearly two-thirds of total federal spending on transfer payments (see table 2). Within the remaining one-third that consists of means-tested programs, the major health care programs, Medicaid, and the insurance subsidies under the ACA constitute the lion's share of the total. Expenditures on the programs that would be replaced by the prototype UBI plan, which include Temporary Assistance to Needy Families, Supplemental Security Income, Supplemental Nutrition Assistance Program, the Earned

Income Tax Credit, the additional child tax credit, Social Security disability payments, and black lung disability payments, constitute only 16 percent of all federal transfer program spending and 42 percent of total means-tested program spending.

Table 6. Prototype UBI and the current system

	Current System	Prototype UBI
Poverty rate (including in-kind benefits)	3.3%	0.1%
UBI outlays (billions)	--	$648
Total transfer spending (billions)	$2,777	$2,980
Share of HHs receiving UBI	--	38.9%
Share of HHs receiving government assistance	62.0%	66.5%
Share of transfers by quintile		
Bottom quintile	35.0%	37.9%
Middle three quintiles	54.8%	51.7%
Top quintile	10.2%	10.4%

Note: These figures include dynamic effects from the reduction in labor supply after the introduction of the UBI. We discuss the magnitude of these effects below. Estimates without dynamic effects are presented in the appendix.

The impact of the prototype plan is summarized in table 6. The plan would effectively achieve the stated objective of eliminating poverty.[26] But the poverty reduction would come at a steep cost. Annual prototype UBI assistance payments would total $648 billion; about $200 billion more than the programs it replaces. It would increase total transfer spending by 7 percent. Total federal government transfer payments under the prototype UBI would be only slightly more targeted to lower-income households than they are under the current system. The share of transfer spending going to households in the bottom quintile would rise only slightly, from 35 percent to 38 percent.[27] These estimates are not significantly affected by our dynamic labor supply assumptions (see the Appendix).

The prototype UBI would increase the percentage of households that receive federal assistance. Thirty-nine percent of households would receive UBI payments. Another 28 percent of households would not receive UBI payments but would receive assistance from other government programs. The increase occurs primarily because the phase-out income level under the prototype plan is higher than the eligibility thresholds of the programs they replace. Under the prototype plan, UBI assistance phases out at 200 percent of the poverty line, or $51,852 for a household of four with two children. The annualized income eligibility threshold for food stamps is 130 percent of the poverty line, or $33,475 for the same household.[28] The earnings eligibility thresholds for SSI for households are only a fraction of the prototype plan's threshold. For example, in 2020 the earnings threshold for a married couple with a disabled child is $3,257, only one-tenth the prototype plan's threshold.[29] The income cutoff for TANF eligibility and the type of household income that is counted in determining eligibility vary from state to state. All states have maximum allowable earnings thresholds. No state has an earnings threshold that comes even close to the prototype plan's income threshold. For example, in 2016, only three states, Alaska, Hawaii, and Minnesota, had TANF earnings thresholds greater than the poverty line for a single household head with two children.[30] Of the major programs that the prototype plan replaces, only the Earned Income Tax Credit had a higher earnings threshold in 2019: $52,493 for a married household with two children.[31]

Means-tested programs that would be replaced by the prototype UBI typically impose high marginal tax rates on recipients, usually in excess of 50 percent and in some cases 100 percent. So a UBI that has a phase-out rate even as high as 50 percent would substantially lower marginal tax rates for most recipients of means-tested programs. But this group is only a small fraction of UBI recipients. The UBI extends assistance to a larger group of persons who do not qualify for existing welfare programs. For these individuals, the UBI adds an additional 50 percent to their marginal tax rate.

Replacing the EITC program with a prototype UBI plan increases the marginal tax rate substantially for a portion of EITC recipients. The EITC supplements the wages of certain low-wage workers by up to 45 percent.[32] Under a prototype UBI plan, this 45 percent work incentive is replaced by a 50 percent work disincentive; a swing in the recipient's marginal tax rate of 95 percentage points. We estimate that about four million workers have an effective negative marginal tax rate from the EITC.[33] To avoid this large change, the UBI could include an income disregard equal to the income threshold where a tax filer's EITC benefit reaches the maximum level. For workers with incomes less than this disregard, the UBI's marginal tax rate would be zero instead of 50 percent.[34] The disregard, however, would increase UBI participation by over 20 percent and add $232 billion to the annual budgetary cost of the program.

Table 7. Labor supply effects of the prototype UBI

Share of tax units with…	
Lower MTRs	9.3%
Higher MTRs	31.1%
Labor supply effects among…	
UBI recipients	-22.4%
All workers	-2.6%
Workers age 21–64	-2.9%
Effect on GDP	-1.3%

Table 7 summarizes the UBI's impact on marginal tax rates and aggregate labor supply. About 9 percent of workers would face lower marginal tax rates. Over three times that number, 31 percent, would face higher marginal tax rates. The increase in marginal tax rates in the latter group would overwhelm the reduction in the former group, and labor supply among all UBI recipients would decline by 22.4 percent. Prototype UBI recipients account for about 15 percent of all hours worked. As a consequence, US aggregate labor supply would decline by 2.6 percent, permanently reducing aggregate GDP by 1.3 percent. This would amount to approximately $270 billion in lost output if the UBI program were initiated in 2019. In addition, the UBI plan's excess spending would necessitate an increase in taxes or in government borrowing. Although the effects of these means of financing are not incorporated into our analysis, higher taxes would further reduce the labor supply and GDP.

One might be tempted to conclude that the prototype plan's large work disincentives could be alleviated by lowering the phase-down rate. Column 2 of table 8 shows the impact of reducing the prototype plan's phase-out rate from 50 percent to 25 percent. The lower phase-out rate would indeed improve work incentives by lowering each UBI recipient's marginal tax rate. But the lower phase-out rate would extend UBI payments to an additional 46 million people age 21 to 65. This extension subjects these people to the 25 percent marginal tax rate in addition to their income and payroll tax rates. The net impact would reduce the US aggregate supply of labor relative to the prototype plan with a 50 percent phase-out rate. Additionally, under this more generous alternative plan, annual UBI payments would rise to $1.03 trillion compared to the $450 billion of annual federal spending on programs it replaces.

To address the prototype plan's deficit consequences, the impact of a second alternative is explored in column 3 of table 8. This alternative is designed so that UBI expenditures roughly equal the expenditures on the federal programs it replaces. The plan achieves federal budget neutrality by reducing the prototype plan's income guarantee to 80 percent of the poverty line. The budget neutrality, however, comes at the expense of reducing poverty. The poverty rate would decline, but 1.6 percent of the population, about 5 million individuals, would still remain in poverty. This second alternative reduces UBI participation and thus would reduce the adverse labor supply effects. Aggregate labor supply would fall by 0.7 percent and GDP would decline permanently by 0.4 percent per year.

Table 8. Variations of the prototype UBI

	Prototype Plan	**Reduced Phase-Out**	**Deficit Neutral**
Maximum benefit	100% of poverty line	100% of poverty line	**80% of poverty line**
Phase-out rate	50%	**25%**	50%
Poverty rate (including in-kind benefits)	0.1%	0.1%	1.6%
UBI outlays (billions)	$648	$1,030	$437
Share of HH receiving UBI	38.9%	64.5%	32.0%
People receiving UBI (21–64)	57.0 million	102.9 million	46.4 million
Share of transfers by quintile…			
Bottom quintile	37.9%	35.3%	38.0%
Middle three quintiles	51.7%	54.9%	51.1%
Top quintile	10.4%	9.8%	10.9%
Share of tax units with…			
Lower MTRs	9.3%	12.7%	10.8%
Higher MTRs	31.1%	52.1%	24.6%
Labor supply effects among…			
UBI recipients	-22.4%	-8.4%	-22.9%
All workers	-2.6%	-3.3%	-0.7%
Workers age 21–64	-2.9%	-3.5%	-0.9%
Effect on GDP	-1.3%	-2.1%	-0.4%

Summary and Conclusions

At a conceptual level, the universal basic income represents a radical departure from long-standing US welfare policy. This policy has required recipients to undertake efforts to improve their station in life as a condition of receiving aid. Although such requirements often carry a stigma, they have most often been designed to prevent individuals from becoming dependent. The UBI's provision of unconditional aid departs sharply from this policy. Given the breadth of UBI's assistance, the UBI carries a risk of making large segments of the population dependent.

UBI supporters acknowledge this departure and counter that a UBI will improve work incentives and redistribute income to achieve a more equitable income distribution. Our economic analysis has cast serious doubt on these claims. While a UBI can improve work incentives among recipients of the transfer programs it replaces, a UBI worsens work incentives among UBI recipients who are not beneficiaries of these programs. In our analysis of a UBI that has no phase-down provision, aggregate labor supply increases slightly. But such a plan dramatically worsens the distribution of income by redistributing government transfer payments from lower- to higher-income households. In our analysis of UBI plans that have phase-down provisions, work incentives are reduced and, as a result, these plans would all significantly reduce aggregate US labor supply and, thereby, US economic output. These plans show little improvement in the distribution of income.

Our economic analysis also finds that while a national UBI plan with a goal of eliminating poverty can be financed within current federal budget expenditures, this can only be accomplished if the UBI replaces all federal income transfer programs, including Social Security, Medicare, and Medicaid. A UBI plan with the same goal that retains these programs will sharply increase federal spending, necessitating a substantial increase in taxes or in government borrowing.

Three additional caveats regarding analyses of UBI plans are warranted. A common mistake in policy analysis is to compare an ideally designed new program with the reality of existing programs. Each existing program is a product of inevitable compromises made in Congress to enact the program and a patchwork of revisions to the initial program made over several years. In the case of the UBI, the inevitable compromises and revisions would invariably entail unintended inequities that would be different, but no less problematic, than those in the system it is replacing. One obvious example would result from regional and urban-rural cost-of-living differences. UBI proponents often regard these differences as minor, an issue to be dealt with later. But unless these cost-of-living differences are taken into account in the plan, significant inequalities among similarly situated people will arise. These differences played a significant role when Congress considered President Nixon's plan. New York representatives objected to the plan's income guarantee as too low for northern industrial states and too lavish for southern rural states. Conceptually, the inequity could be addressed by the adoption of suitable regional and urban-rural cost-of-living indexes. But to date, the United States has not developed such satisfactory indexes despite glaring inequities in tax assessments, the distribution of federal grants, and the distribution of transfer payments across states and regions of the country.

Another potential inequity arises when the UBI replaces only a part of the existing system. Partial replacement can result in individuals who receive UBI enjoying a higher disposable income than individuals who do not receive UBI assistance. This inequity would be particularly pronounced because under the UBI the taxes paid by the latter group finance the assistance provided to the former group. An example of this can be seen in our prototype plan. Since the plan does not replace Medicaid, some UBI recipients would receive health care subsidies that are not available to individuals not receiving UBI aid. For a typical household of four, the Medicaid assistance can easily have a market value of more than $10,000. Ironically, one of the initial motivations for President Nixon's plan was that welfare recipients often had a higher income, factoring in welfare assistance, than the individuals who were paying taxes to finance welfare payments. The Nixon plan foundered partly on its inability to fix this problem.

A second caveat regards the UBI's provision of cash in lieu of in-kind benefits. Many UBI proponents envision the UBI as a replacement for the entire welfare system, including in-kind benefit programs. Since most welfare assistance is provided in the form of in-kind benefits, the savings from eliminating in-kind benefit programs are large. But the structure of these programs is not an accident of history. In-kind assistance has grown steadily since the 1930s, both in absolute terms and relative to cash assistance. Nearly all the federal welfare programs added since the 1950s have provided in-kind benefits: Medicaid, SNAP, Affordable Care Act subsidies, Section 8 housing subsidies, day care assistance, and energy

subsidies are just a few examples of the additional in-kind programs. Meanwhile, the only new cash assistance programs have been the Earned Income Tax Credit and refundable child credits. The consistent trend toward in-kind benefits across successive generations of policies reflects an overwhelming paternalism among policy officials and the public. It also reflects the extraordinary lobbying power among in-kind service providers, ranging from physicians, hospitals, and pharmaceutical companies to housing developers, farmers, and school cafeteria workers unions. So a successful effort to replace the entire welfare system with a UBI is likely to be only temporary. More likely than not, pressure will emerge to recreate in-kind benefit programs. If initially UBI income guarantees are set at levels designed to compensate individuals for their foregone in-kind benefits, the subsequent re-creation of these programs could produce an extraordinarily costly system.

A third caveat concerns the inevitable pressure to increase UBI assistance levels once the program has begun. Throughout US history, starting as far back as the early 1800s, Congress has repeatedly and consistently expanded federal entitlement programs by incremental amounts. In previous work, John Cogan has identified and documented the force, termed the "equally worthy claim," that causes this liberalization.[35] The force originates from a well-meaning impulse to treat all similarly situated persons equally under the law. It works as follows: When an entitlement law is first enacted, for policy or fiscal reasons, it usually confines benefits to individuals deemed to be particularly worthy of assistance. As time passes, groups of excluded individuals lay claims that they are no less deserving of aid. Pressure is brought by, or on behalf of, these excluded groups to relax eligibility rules. But the broadening of eligibility rules just brings another group of claimants closer to the eligibility boundary line and the pressure to relax qualifying rules begins over again. The process of liberalization repeats itself until the entitlement program reaches a point where its original goals are no longer recognizable. A UBI is likely to be particularly sensitive to the equally worthy claim. A small reduction in the program's phase-out rate can substantially increase the number of persons receiving assistance. For example, using the CPS data, a 5 percentage point reduction in our prototype UBI plan's phase-out rate would increase UBI participation by over 10 percent.

The Nixon and Carter Administrations could not overcome the inherent tradeoffs between a UBI plan's generosity, its cost, and its effect on work. Today's UBI supporters face the same challenges that confounded policy makers in the 1970s. By providing income support without imposing any self-improvement requirements on recipients, the UBI represents a dangerous break from the long history of US welfare policy. Its no-strings-attached benefit raises the cost of the federal income transfer system substantially and worsens work incentives, while only marginally improving the targeting of government assistance on low-income households.

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Appendix

Table A1. Prototype Plan: Static vs Dynamic Estimates

	Static	Dynamic
Poverty rate (including in-kind benefits)	0.1%	0.1%
UBI outlays (in billions)	$567	$648
Share of HHs receiving UBI	38.7%	38.9%
Share of transfers by quintile		
Bottom quintile	39.2%	37.9%
Middle three quintiles	50.3%	51.7%
Top quintile	10.5%	10.4%

Table A2. Lower Phase-Out Plan: Static vs Dynamic Estimates

	Static	Dynamic
Poverty rate (including in-kind benefits)	0.1%	0.1%
UBI outlays (in billions)	$974	$1,030
Share of HHs receiving UBI	64.3%	64.5%
Share of transfers by quintile		
Bottom quintile	36.1%	35.3%
Middle three quintiles	54.1%	54.9%
Top quintile	9.8%	9.8%

Table A3. Deficit-Neutral Plan: Static vs Dynamic Estimates

	Static	Dynamic
Poverty rate (including in-kind benefits)	1.4%	1.6%
UBI outlays (in billions)	$388	$437
Share of HHs receiving UBI	31.7%	32.0%
Share of transfers by quintile		
Bottom quintile	38.9%	38.0%
Middle three quintiles	50.1%	51.1%
Top quintile	11.0%	10.9%

Endnotes

[1] The Stockton Economic Empowerment Demonstration is currently giving 125 Stockton residents a monthly payment of $500 (https://www.stocktondemonstration.org/). The Compton Pledge will provide between $300 and $600 in monthly assistance to 800 Compton residents until 2022 (https://comptonpledge.org/). The HudsonUp project will provide $500 monthly to 25 Hudson residents until 2025 (https://www.hudsonup.org/).

[2] "Poll: Majority of voters now say the government should have a universal basic income program," *The Hill*, August 14, 2020, https://thehill.com/hilltv/what-americas-thinking/512099-poll-majority-of-voters-now-say-the-government-should-have-a

[3] For a comprehensive analysis of the current transfer system and its effects on poverty, see Burkhauser, et al. (2019) and Meyer and Sullivan (2003).

[4] To determine the UBI amount, we treat each tax unit as a separate household. Tax filers who would be claimed as a dependent on their parents' return are not assigned a separate UBI amount.

[5] We use the US Census Bureau's poverty thresholds. The thresholds are available at https://www.census.gov/data/tables/time-series/demo/income-poverty/historical-poverty-thresholds.html.

[6] An overview of the survey and the public use data files is available at https://www.census.gov/data/datasets/time-series/demo/cps/cps-asec.html.

[7] CPS economic data include income, assets, hours and weeks of work, participation in major federal and state income transfer programs, and the amounts of income received from each program. The CPS underestimates enrollment and benefits for key federal transfer programs. In programs where the underestimates are particularly large, we impute enrollment and rescale benefits to match administrative data.

[8] TAXSIM is available at http://taxsim.nber.org/taxsim32/. For an overview of the model, see Feenberg, Richard, and Coutts (1993).

[9] We focus on the dynamic effects throughout the paper. The static estimates are presented in the appendix.

[10] The income and substitution elasticities used to calculate the labor supply changes are from the CBO (2012). The assumed substitution elasticities vary by income with a person-weighted mean of 0.27. The income elasticity for all persons is set at -0.05.

[11] The Earned Income Tax Credit is an important exception as we discuss in the prototype UBI plan section.

[12] For persons with positive hours of work under the current system, the labor supply response to the UBI is calculated directly from these elasticities and the change in marginal tax rates and income (measured by including the market value of in-kind benefits). For persons who are not working under the current system but who would have a greater incentive to work under the UBI, we derived their labor supply from the aforementioned elasticities. Specifically, we converted the elasticities to absolute changes in labor supply by multiplying the elasticities by the average hours of work among persons with positive hours of work.

[13] In computing our dynamic labor supply responses in households with two or more earners, the worker with the largest earnings is assumed to be the primary worker. All other workers are designated secondary workers.

[14] Even with the idealized UBI, a small number of households remain below the poverty line. These households reported business income losses, capital losses, or other negative sources of income.

[15] The official US poverty rate of 10.5 percent includes only cash in determining household income.

[16] The differences between quintiles are due to large differences in household size by quintile. Households in the top quintile have an average of three persons, while households in the bottom quintile average 1.5 persons.

[17] The GDP impact is equal to the earning-weighted change in hours worked.

[18] Beyond work disincentives, the idealized UBI would also contain a significant marriage penalty. A non-married couple under age 65 would each receive $13,300. If they married, their combined benefit would be only $17,196, a loss of $9,404. The marriage penalty could be avoided by assigning benefits per capita rather than by household. This would require either significantly higher spending or a reduction in the guaranteed income amount, leaving some Americans in poverty.

[19] The history of Nixon's and Carter's guaranteed income proposals is explored in Cogan (2018).

[20] Under President Carter's plan, assistance to families with children would be further supplemented by an expansion of the Earned Income Tax Credit.

[21] Moynihan (1973), page 370.

[22] Under President Carter's plan assistance was reduced for different forms of income by different percentages. For example, interest income would reduce benefits at a lower rate while veterans' benefits would reduce assistance at a higher rate. The earnings disregard also varied by family type and size. For a two-parent family with two children the annual disregard was $3,800. For a family of four with two children, the Earned Income Tax Credit provided a 10 percent credit on annual earnings up to $4,000, the income level at which the family claiming the standard deduction would begin to have a pre-credit income tax liability. For earnings above this level, the credit declined at a 10 percent rate.

[23] These tradeoffs exist even under a UBI plan that does not contain a phase-down provision and is financed by personal income taxes. The income tax serves the same function, particularly for work incentives, as a phase-down of benefits. Both reduce the net amount an individual receives from the government as earned income increases. This point is especially important in considering a nationwide basic income plan for the United States, since personal income taxes are the primary source of federal revenues. Using other forms of taxation to finance a UBI's cost will have different effects on work incentives. Andrew Yang has, for example, proposed a Value Added Tax as a financing mechanism. A VAT taxes consumption rather than income and, therefore, has less of a work disincentive. However, it is a highly regressive tax that works against the very purpose of an UBI, namely to redistribute income from higher-income to lower-income individuals.

[24] For the purpose of computing UBI payments, seniors' Social Security benefits are counted as earned income.

[25] To date, advocates of national UBI plans have provided few details on the program's structure and the existing programs that the UBI would replace. Andrew Yang, to his credit, has offered some details as to the parameters of his UBI the existing programs his Freedom Dividend plan would replace. His plan, which offers individuals age 18 or older a choice between $12,000 per year or their benefits under the current system, would replace between $500 billion and $600 billion in annual expenditures. He is vague about the programmatic makeup of these savings; specifically mentioning only "welfare programs, food stamps, (and) disability." ("The Freedom Dividend Defined," Andrew Yang, https://www.yang2020.com/what-is-freedom-dividend-faq/)

[26] Like the idealized plan, a small number of households technically remain below the poverty line due to reported negative income sources.

[27] As with the idealized plan, the quintiles are calculated on the basis of household income in the absence of any government assistance.

[28] Food stamp eligibility uses the Health and Human Services poverty guidelines. These guidelines differ slightly from the U.S. Census Bureau's poverty thresholds, which we use to calculate a household's UBI benefit.

[29] "Understanding Supplemental Security Income – 2020 Edition," Publication No. 17-008, Social Security Administration Office of Disability and Income Security Programs, September 2020, https://www.ssa.gov/pubs/EN-17-008.pdf, p. 25.

[30] "State TANF Policies: A Graphical Overview of State TANF Policies as of July 2016," OPRE Report 2018-55, U.S. Department of Health and Human Services, May 2019, https://www.acf.hhs.gov/sites/default/files/opre/wrd_2016_databook_companion_piece_05_15_18_508.pdf, Fig. 2, p. 4.

[31] "Earned Income Tax Credit Income Limits and Maximum Credit Amounts," Internal Revenue Service, updated or reviewed December 7, 2020, https://www.irs.gov/credits-deductions/individuals/earned-income-tax-credit/earned-income-tax-credit-income-limits-and-maximum-credit-amounts

[32] The amount of the EITC depends upon the number of children in the tax filing unit.

[33] The additional child tax credit provides a similar work incentive of 15 percent for approximately 6 million low-income parents. Interactions between the EITC and ACTC mean some parents have a marginal tax rate of -60 percent. For these workers, the prototype UBI marginal tax rate increase would amount to 110 percentage point increase in their marginal rate.

[34] In 2019, childless tax filers reached the maximum EITC benefit at $6,920, filers with one child at $10,370, and filers with two or more children at $14,570.

[35] Cogan (2018).

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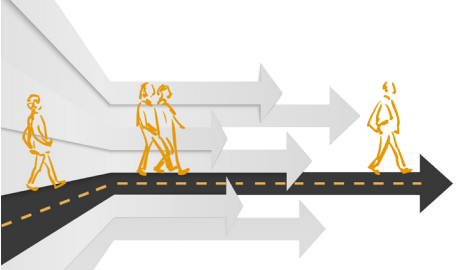

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