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The Effect of a Universal Basic Income on Life Decisions: Evidence from a Student Lab Experiment

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THE EFFECT OF A UNIVERSAL BASIC INCOME ON LIFE DECISIONS:

EVIDENCE FROM A STUDENT LAB EXPERIMENT

by

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ABSTRACT

The Effect of a Universal Basic Income on Life Decisions: Evidence from a Student Lab

Experiment

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A Universal Basic Income (UBI) is an unconditional cash transfer administered universally regardless of employment or economic status. A UBI, while typically thought of as a response to rising income inequality or threatening automation, has the potential to achieve a number of effects, only some of which are economic. And while a UBI could have positive effects, there are some critiques of UBI that warrant merit and will be examined in this paper after discussing the potential positive effects. An experiment was designed to test some of the theories promoted by UBI critics and proponents. Subjects, divided into two groups with the treatment group receiving a UBI, played an economic game where they made decisions about work and leisure, consumption, education, and savings. Subjects decisions were recorded and data was analyzed using OLS multivariate regressions to reveal results that generally align with real-world pilots. UBI recipients work less when they can use that time to achieve higher levels of education. When there is no opportunity for education, there was no statistically significant difference in the amount of time that subjects spent working. UBI recipients also had higher savings and consumption levels.

KEYWORDS: Universal Basic Income (UBI), Economic Lab Experiment

Table of Contents

Introduction

        A universal basic income (UBI) is a universal, unconditional, cash payment regularly distributed to all individuals in a geographic area regardless of employment or economic status.[1] While it is not a new idea, UBI is receiving renewed attention on an international scale. Using both theoretical arguments and results from real-world pilot programs, UBI proponents can draft a strong case in support of a UBI, whose effects could include: reducing poverty, improving health outcomes and child development, mitigating the negative effects of automation on vulnerable workers, reducing rising economic inequality, promoting democratic participation, and ultimately separating paid work from survival. Critics of UBI often claim that the policy would be too expensive and would result in significant reductions in labor market participation, which would create negative economic outcomes.

        This experiment created a simulation in which subjects were split into a treatment and control group and assigned one of four profiles with varying education levels and wages. The treatment group received a $12,000 UBI, and the control group did not. Subjects then made decisions about work, consumption, leisure, education, and savings for 10 rounds, with each round being one year. Panel data was collected by treating each round from each subject as an observation (n = 1020), while cross-sectional data was collected by aggregating each subject's decisions to treat each participant as an observation (n = 102). Both panel and cross-sectional data were analyzed using multivariate OLS regressions to determine the effect of a universal basic income on the in-game life decisions made by simulation participants. It is hypothesized that UBI recipients would work slightly less, using most of that time to improve their education.

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[1] Philippe Van Parijs, *Basic Income: a simple and powerful idea for the twenty-first century,* (Politics & Society, 2004), 4

Further, UBI recipients are hypothesized to increase savings while maintaining a comparable level of consumption to non-recipients. Finally, UBI recipients are hypothesized to use their transfer to pursue productive activities, increasing their score by more than the nominal value of the transfer.

What is a Universal Basic Income?

While the term 'universal' may lead readers to believe that a UBI is one policy, there are a number of policy options that UBI advocates may pursue within a universalist framework.[2] So while universal basic income policies are often discussed as if they are a singular policy, there are actually a number of UBI or UBI-like policies that, because of their unique policy construction, have unique effects. There are several dimensions along which UBI policies differ, including universality, individuality, conditionality, uniformity, frequency, modality, and adequacy.

While it would seem that universality is a rigid quality that would not change between two 'universal' policies, there are a number of groups that may be excluded from various 'universal' policies. Non-citizens are commonly excluded from universal policies, for example.[3] In this sense, universality can be defined as covering everyone in a perceived political in-group: because non-citizens are not considered members of the society distributing universal benefits, they are not included in the universal scheme. Universality also implies that the basic income is not targeted.[4] The UBI is paid to low-income earners, high-income earners, the jobless who seek work, and the jobless who don't seek work alike.

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[2] Jurgen De Wispelaere & Lindsay Stirton, *The many faces of universal basic income*, (The Political Quarterly, 2004), 266

[3] Ibid., 267

[4] Hilary W. Hoynes & Jesse Rothstein, *Universal Basic Income in the US and Advanced Countries*, (National Bureau of Economic Research, 2019), 1

Unlike traditional social programs, UBI payments are disbursed to individuals, not households. Some proponents of UBI have argued that, to better fit with traditional approaches, it would be acceptable to give benefits to households rather than individuals.[5] This, however, would compromise some of the benefits that UBI holds over traditional programs. Under a UBI scheme, the amount of benefit an individual receives is independent of what type of household they belong to.[6] This is unlike a traditional scheme, where the benefit amount for a household is less than what would be the aggregate sum of the benefits if the individuals lived separately. A UBI, then, by not reducing benefits for households with more than one individual, passes on the savings of shared accommodation to beneficiaries. Because of the program's individual focus, UBI removes isolation traps and incentivizes communal living.[7]

A universal basic income is also unconditional. Aside from the various exclusions that result from one's definition of universality, there are no conditions that prevent an individual from receiving a universal basic income. This is unlike traditional social programs, which are often accompanied by a requirement to work or seek work. There are also no conditions about how a UBI is spent. It may be saved for a rainy day, spent frivolously, invested meticulously, used to fund human capital investments like education, or any other purpose without restriction.[8]

The uniformity of a UBI concerns the level of benefit that each individual receives.[9] There are two different ways to define uniformity: in absolute and adjusted terms. Absolute uniformity is what is typically associated with UBI: each person receives the same check for the same nominal amount, regardless of personal characteristics or location. This means that the UBI

[5] De Wispelaere & Stirton, *The many faces of universal basic income*, 271
[6] Van Parijs, *Basic Income,* 8
[7] Ibid., 8
[8] Ibid., 42
[9] De Wispelaere & Stirton, *The many faces of universal basic income*, 269

is formally uniform, but would provide different beneficiaries with different amounts of purchasing power due to differences in cost of living.[10] Adjusted uniformity aims to distribute equal amounts of purchasing power to beneficiaries: while not formally uniform (different beneficiaries receive checks for different amounts), adjusted uniformity provides all beneficiaries parity in purchasing power by adjusting the universal basic income to account for external factors, like the regional cost of living.[11]

The frequency and timing of benefits can have a significant impact on the success of a UBI. A UBI is distributed in regular payments as opposed to in a lump-sum.[12] The timing of UBI benefits – whether they are distributed weekly, monthly, or annually – does make a difference.[13] The timing of payments can be designed to incentivize or avoid certain behaviors: annual payments, for example, may better promote larger investment than smaller, more frequent payments. Alternatively, more frequent payments may be more practical if the policy's goal is to give individuals subsistence. The timing of benefits could also be determined by the surrounding administrative or social frame: because traditional social program benefits and wages are distributed bi-weekly, it may be desirable for UBI benefits to follow that scheme.[14]

The mode of a transfer refers to the shape that a transfer takes, namely whether the transfer is a cash or in-kind transfer.[15] A UBI, by definition, is a cash transfer, although some social policies similar to a UBI advocate for in-kind transfers over cash. Additionally, modality can be expanded to include the method of disbursing cash benefits. There may be differences in

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[10] De Wispelaere & Stirton, *The many faces of universal basic income*, 269
[11] Ibid., 269
[12] Van Parijs, *Basic Income,* 5
[13] De Wispelaere & Stirton, *The many faces of universal basic income*, 270
[14] Ibid., 270
[15] Ibid., 270

behavior that result from receiving a monthly check compared to having benefits removed from an individual's year-end taxes, similar to a negative income tax (NIT).

A final aspect of a universal basic income is the policy's adequacy to satisfy beneficiaries' basic needs.[16] An adequate UBI should be large enough to cover an individual or family's basic needs without other sources of income.[17] In most versions of UBI, the universal benefit supplements existing income, in-kind transfers, and some cash transfers; UBI does not phase out with new incomes and does not need to replace all existing social programs.[18] While it is possible that an adequately large UBI would be able to provide universal basic security without additional social programs, the abolition of traditional social programs is not a hallmark of a universal basic income. Some believe that a UBI does not need to be fixed at subsistence level, arguing that UBI benefits could either exceed or fall short of covering basic necessities.[19][20] This author would argue that a universal basic income that does not cover necessities is not a universal basic income at all, just a universal income. Any interpretation of the term 'basic' in universal basic income ought to include affording basic security. If a UBI is not intended to afford basic security, it is not a true universal basic income.

So, what would a universal basic income look like in the United States? While a UBI as discussed above – universal, unconditional, and substantial enough to live on – has never been implemented in a wealthy country like the United States or, for that matter, even in a large scale pilot experiment.[21] Clark (2003) has offered a model for a UBI in the U.S. Every person 18 years

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[16] De Wispelaere & Stirton, *The many faces of universal basic income*, 271
[17] Hoynes & Rothstein, *Universal Basic Income in the US and Advanced Countries*, 1
[18] Van Parijs, *Basic Income,* 14
[19] Ibid., 271
[20] Van Parijs, *Basic Income,* 4-5
[21] Hoynes & Rothstein, *Universal Basic Income in the US and Advanced Countries*, 17

or older would receive a benefit equal to the poverty line for a single person living alone. This model would provide a second level of benefits to people under 18, set below the poverty line but high enough to guarantee that family income would be at least equal to the poverty line for a family of a given size. In 2008, Joseph Kennedy, former chief economist at the U.S. Department of Commerce, proposed a basic income of $1,250 per month.[22]

One concern shared by UBI advocates and opponents alike is the how a UBI would interact with policies already in place. Two UBI policies that are similar in design may produce very different outcomes because of how the policies interact with the existing social policy framework.[23] One way to minimize this problem would be to integrate a UBI into the existing social policy framework as much as possible. This could include dispersing benefits in similar intervals using similar or familiar means. Providing basic security through the use of a negative income tax (NIT) could afford beneficiaries basic security through the use of a familiar mechanism. An NIT, using refundable tax credits, would guarantee tax filers a minimum income.[24] Individuals with taxable income receive a benefit that is equal to the difference between the tax credit and their tax liabilities. Filers with no income receive the full benefit in cash, similar to a UBI. At the breakeven level, an individual's tax liabilities are exactly equal to the credit; no benefit is received, but no net taxes are paid. Individuals with an income exceeding the credit would pay taxes, as the NIT credit is less than the amount of taxes owed. While an NIT and UBI are capable of achieving the same levels of wealth redistribution, there are several important dimensions along which an NIT varies from a UBI.[25] These include the dispersal of

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[22] John Kay, *The basics of basic income,* (Intereconomics, 2017), 71
[23] De Wispelaere & Stirton, *The many faces of universal basic income*, 271
[24] Philip L. Harvey, *The relative cost of a universal basic income and a negative income tax,* (Basic Income Studies, 2006), 2
[25] Ibid., 4

benefits only to those who file for taxes, as well as the distribution of benefits in the form of tax credits as opposed to cash.

Having discussed what a UBI is and is not, the question arises: why does UBI warrant study? UBI, after all, would be a drastic, potentially expensive, departure from traditional social policy. But the adversarial policy approach – dismissing UBI purely because of its dissimilarities with the traditional policy approach – does not provide a useful framework for decision making.[26] Analyzing and considering radical policy changes may be worthwhile in the face of long-term risks associated with the continuation of the status quo.[27] Refusing to modify the status quo in the face of social, political, and economic pressure increases polarization and threatens feelings of social solidarity, especially with younger generations.[28]

Effect on Combatting Automation

The economic disruption resulting from automation is commonly cited as a reason to institute a UBI. It is well established that automation, globalization, and other large-scale economic shifts devalue and eventually eliminate established skills.[29] And while opponents claim that automation is not a new phenomenon, automation in the future has the potential to be more disruptive than previous automation for two reasons. First, if technology advances at its current pace and is adopted quickly, workers could be displaced at a faster rate than in past economic shifts. Second, if many firms in different sectors adopt automation at the same time, the portion of the workforce affected by automation could be higher than in the past. Put simply, 21st century

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[26] De Wispelaere & Stirton, *The many faces of universal basic income*, 272

[27] Thomas Straubhaar, *On the economics of a universal basic income,* (Intereconomics, 2017), 80

[28] Ibid., 80

[29] Ugo Colombino, *Basic income policies: theory and empirical evidence*, (Focus, 2017), 21

automation could displace more workers at a faster rate than previous incidences of large-scale automation and economic transition.[30]

Automation will play a large role in shaping the future of labor in developed countries like the United States, where almost 25% (mid-point projection) to 45% (rapid adoption) of current work could be automated by 2030.[31] 39% of all jobs in the United States will be lost or destroyed while about 30% of those will be recovered through occupational switching and demand from new industries. This means that 9% of all jobs will be lost (mid-point) while labor markets will grow by about 15% due to new workers. Between 39 million (mid-point) and 73 million (rapid adoption) workers will be displaced, and between 13-16 million (mid-point) and 48-54 million (rapid adoption) workers will need to change occupations. Up to one-third of the workforce may need to be retrained by 2030. A wide range of jobs in predictable environments will be affected, including office support positions, assembly line positions, agricultural positions, and some customer service positions. Less affected will be jobs that involve human management, social interaction, and expertise.[32]

In the automated future, any available work will likely require more education and different skills. Jobs that require only secondary education will be harmed by automation and jobs that require at least a college education will benefit.[33] Future jobs will require more social skills, advanced cognitive and logical abilities, and creativity.[34] The task, then, will be to take individuals employed in predictable industries and give them the skills they need to succeed, like

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[30] James Manyika et. al, *Jobs lost, jobs gained: Workforce transitions in a time of automation*, (McKinsey Global Institute, 2017), vi
[31] Ibid., 29
[32] Ibid., 6
[33] Ibid., 15
[34] Ibid., 15

critical thinking and creativity. This will be a daunting task, as the performance of predictable,

monotonous tasks does not traditionally facilitate the development of critical thinking abilities or

creativity. Because any adjustment will likely be painful for workers, income support must be

provided to displaced workers to maintain their quality of life.[35] Income support may also help

workers to get educated, re-train, or take other actions to foster labor market re-entry.[36]

Assisting such a large volume of displaced workers with re-training and re-entry will be a

challenge for which there are few successful examples.[37] Labor markets will need to be more

fluid to adequately accommodate rapid changes, but labor markets in advanced economies,

particularly the United States, have become more rigid since the 1980s.[38] Rigidities and

imperfections in labor markets will impede the workers' transitions to new jobs, fueling rising

unemployment and falling wages. Because strong aggregate demand is essential to the new job

creation accounted for in the mid-point and rapid adoption scenarios, displaced workers must

have the means to maintain a decent standard of living, and therefore a decent standard of

consumption.[39] Some of the benefits from automation, therefore, should be redistributed to

compensate displaced workers. A UBI would be an adequate way to compensate displaced

workers, giving them the means to maintain a decent standard of living and pursue labor market

re-entry.[40]

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[35] Hoynes & Rothstein, *Universal Basic Income in the US and Advanced Countries*, 3
[36] Ibid., 16
[37] Manyika et. al, *Jobs lost, jobs gained,* 124
[38] Ibid., 114
[39] Ibid., 4
[40] Colombino, *Basic income policies,* 21

Effect on Inequality and Democracy

If automation is not accompanied by a just redistribution of income, automation will drive up already-worsening economic inequality. Both income and wealth inequality are on the rise in the United States and other Western nations.[41] In OECD countries, the richest decile make nine times the income of the poorest decile, the highest level in 50 years.[42] In the United States, the pre-tax income of the bottom 50% of earners grew by 1% between 1980 and 2014 while incomes in the 50-90th percentiles grew by 42% and incomes in the top decile grew by 121%.[43] Indeed, since 1980, most developed economies have seen a higher share of income being captured by capital as opposed to labor, due in large part to automation and technical change.[44] 21st century automation could increase the pace of already-growing economic inequality, and there is already evidence that the benefits of automation are not being equitably distributed.[45][46]

Without a significant policy intervention, the current trend of increasing economic inequality will not be reversed. Most future job growth in the U.S. will be in jobs that are already high-paying: the lowest-paying 30% of jobs will lose about 2% of wages, the 30-70th percentiles will see wages depressed by 12%, and the highest-paying jobs will see incomes grow by 10%.[47] These projections are averages of mid-point scenario outcomes, and rapid or widespread adoption will further exacerbate this inequity. The demand for unskilled or uneducated labor will decrease while the demand for educated and skilled workers will increase, threatening a

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[41] Nat O'Connor, *Three Connections between Rising Economic Inequality and the Rise of Populism,* (Irish Studies in International Affairs, 2017), 29

[42] Elise Klein, *Economic Rights and a Universal Basic Income*, (Griffith Journal of Law & Human Dignity, 2018), 107

[43] Hoynes & Rothstein, *Universal Basic Income in the US and Advanced Countries*, 4

[44] Manyika et. al, *Jobs lost, jobs gained,* 17

[45] Michael Dickson, *Living with Robots: Automation and Income Inequality in the 21st Century*, (2017), 7

[46] Ugo Colombino, *Is unconditional basic income a viable alternative to other social welfare measures?*, (IZA World of Labor, 2019), 2

[47] Manyika et. al, *Jobs lost, jobs gained,* 103

vulnerable section of the workforce.[48] A UBI, because it would transfer income from the owners

of capital to laborers (and the non-working who do not own capital), would combat the economic

inequality amplified by automation.[49] This would allow non-capital owners to maintain a decent

standard of living. Without a UBI, society will continue to be plagued by the harms of economic

inequality.

Economic inequality has psychological, social, economic, and political

consequences.[50][51][52][53] Income inequality results in lower levels of life satisfaction, lower self-

esteem, more emotional distress, and risky coping behaviors for those on the unfavorable end of

the income distribution.[54][55] Income inequality at the national level is associated with a collapse

of trust, cohesion, and cooperation due to a perceived sense of unfairness and pervasive

competition for social status.[56][57] Cooperation and trust are critical to both individual well-being

and societal functions.[58] A lack of cooperation also causes political efforts supporting vulnerable

populations to fall apart, reinforcing the psychological consequences of inequality.[59] Further,

income inequality tends to reduce life expectancy for both women and men.[60] In societies with

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[48] Manyika et. al, *Jobs lost, jobs gained,* 103

[49] Hoynes & Rothstein, *Universal Basic Income in the US and Advanced Countries*, 4

[50] Felix Cheung & Richard E. Lucas, *Income inequality is associated with stronger social comparison effects: the effect of relative income on life satisfaction,* (Journal of personality and social psychology, 2016), 5-6

[51] Richard H. McAdams, *Economic Costs of Inequality: The Role of Race in Law, Markets, and Social Structures*, (2007), 4

[52] Markus Brueckner & Daniel Lederman, *Effects of income inequality on aggregate output*, (The World Bank, 2015), 2

[53] Terrence D. Hill & Andrew Jorgenson, *Bring out your dead!: A study of income inequality and life expectancy in the United States, 2000-2010*, (Health & Place, 2018), 2

[54] Cheung & Lucas, *Income inequality is associated with stronger social comparison effects, 4*

[55] Hill & Jorgenson, *Bring out your dead!,* 2

[56] Cheung & Lucas, *Income inequality is associated with stronger social comparison effects, 4*

[57] Hill & Jorgenson, *Bring out your dead!,* 3

[58] Kela, *Basic income recipients experienced less financial insecurity,* (Kansanelakelaitos – The Social Insurance Institution of Finalnd, 2019)

[59] Hill & Jorgenson, *Bring out your dead!,* 3

[60] Ibid., 5

high levels of income inequality, the social effects of inequality may negate any benefits of economic growth to disadvantaged groups: while they will receive a small gain to their absolute income, the amplification of social effects may negate, or even outweigh, the effects of income growth.[61] Income inequality, especially when coupled with unemployment, increases crime and other social unrest, which depresses economic productivity.[62][63] Inequality, then, is increasing and, especially when coupled with unemployment, is associated with a host of personal and social harms.

There is reason to believe that a universal basic income could mitigate the social harms of income inequality. Because a UBI would be a large-scale redistribution of wealth, it is likely to reduce income inequality. Preliminary evidence from a UBI pilot in Finland also shows that receiving a basic income transfer caused beneficiaries to have more trust in other people (+8%) as well as institutions, including politicians (+12%), political parties, the police (+4.5%), and courts (+4.5%).[64][65] So not only would UBI reduce the level of income inequality, it could also mitigate the negative social effects of the remaining inequality.

Income inequality also has troubling economic and political implications. Examining 104 countries between 1970 and 2010, Brueckner & Lederman (2015) find that income inequality has a substantial negative effect on GDP per capita growth and long-run GDP per capita.[66] Inequality also increases corruption: if there were no differences in individual wealth, no politician would have an incentive to "be bought" buy any one person.[67] The concentration of

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[61] Cheung & Lucas, *Income inequality is associated with stronger social comparison effects, 12*
[62] McAdams, *Economic Costs of Inequality,* 4-12
[63] Dickson, *Living with Robots,* 4
[64] Kela, *Basic income recipients experienced less financial insecurity*
[65] Trust was measured on a scale of 1-10 via a survey of both recipients and a control group.
[66] Brueckner & Lederman, *Effects of income inequality on aggregate output,* 15
[67] McAdams, *Economic Costs of Inequality,* 13

wealth and the ability to effectively exercise political power causes governments to turn their backs on the interests of the non-elites by taking one or more of the following actions: cutting progressive taxes, deregulating industries, eliminating environmental regulations, limiting or reducing the amount of public resources that are dedicated to social services like education and healthcare.[68] These actions reinforce existing income inequality, fueling more corruption. Societies, then, can be trapped in a cycle where income inequality causes corruption which, in turn, creates more income inequality.[69] Corruption also tends to reduce investment by members of the non-elite, as the elites' ability to exercise influence over the judiciary would lead a rational individual to conclude that the elite will always prevail.[70] The threat of redistribution and social violence that accompany inequality also reduce the rate of return on all investments, chilling total investment and slowing growth.[71] Inequality also slows growth by limiting a population's access to education and other human capital, which tends to reinforce existing economic inequality.[72] Growth is critical to democratic societies because it promotes pluralism, diversity, dissent, and commitment to democratic principles.[73]

Economic inequality can have significant negative effects on democracy and political and economic freedom. Inequality is the primary factor in determining political instability, as populist rhetoric commonly addresses the economic decline or uncertainty that restricts

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[68] Hill & Jorgenson, *Bring out your dead!,* 4
[69] McAdams, *Economic Costs of Inequality,* 16-17
[70] Ibid., 19
[71] Ibid., 19
[72] Ibid., 20
[73] Ibid., 22

economic freedom.[747576] Indeed, large changes in income or standards of living resulting from economic shocks can create strong political reactions.[77] Economic shocks that reinforce income inequality – like automation – can jeopardize long-run growth.[78] Reducing economic growth increases the support for extreme political platforms, which historically tend to oppress or marginalize minority groups.[79] Women in particular have an acute stake in supporting democratic systems, as restrictive authoritarian governments are generally hostile towards women's rights and gender equality.[80]

A UBI could improve economic growth by increasing aggregate demand, separate paid work from survival, and strengthen democracy. Along with a just distribution of wealth, a UBI would aid in achieving a just distribution of time and opportunity, allowing for more complete freedom. This would ensure that, while people have access to basic necessities like food, healthcare, and social services, they would also have the time to educate themselves and engage in politics.[81] In this sense, the freedom provided by a universal basic income is essential to enabling democratic participation and protecting democratic principles. By supporting political stability and promoting democratic participation, a UBI could strengthen the American democracy.

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[74] Mark J. Roe & Jordan I. Siegel, *Political instability: Effects on financial development, roots in the severity of economic inequality*, (Journal of Comparative Economics, 2011), 6
[75] O'Connor, *Three Connections between Rising Economic Inequality and the Rise of Populism,* 29
[76] Tim Krieger & Daniel Meierrieks, *Political capitalism: The interaction between income inequality, economic freedom and democracy,* (European Journal of Political Economy, 2016), 21
[77] Robert Grafstein, *The Political Economy of Extremism and Moderation,* (7th general conference of the European consortium for political research, Bordeaux, 2013), 34-35
[78] Krieger & Meierrieks, *Political capitalism,* 21
[79] Markus Brueckner & Hans Peter Gruner, *Economic growth and the rise of political extremism: theory and evidence,* (2010), 2
[80] Patricia Schulz, *Universal basic income in a feminist perspective and gender analysis*, (Global social policy, 2017), 90
[81] Klein, *Economic Rights and a Universal Basic Income*, 107

Effect on Poverty

Along with income inequality, a universal basic income could significantly reduce poverty. Before analyzing the potential of a UBI to reduce poverty, poverty must be defined. There are two ways to define poverty: absolutely and relatively.[82] Absolute poverty is defined as a lack of resources to meet basic needs, while relative poverty is defined as possessing a level of resources that, while possibly enough to meet basic needs, is less than a certain proportion of resources possessed by others. Absolute poverty is measured by the poverty line, while relative poverty has fewer concrete measures. An individual experiences relative poverty when they feel less prosperous than those around them. For example, a single woman who makes $55,000 per year is not impoverished in absolute terms. But, if she lives in a neighborhood or locality where the average annual income is over $100,000, she may experience relative poverty by *feeling* impoverished compared to her neighbors. Both absolute and relative poverty have negative effects.

Absolute poverty has tangible effects in the United States. According to the U.S. Department of Housing and Urban Development, more than 500,000 people are homeless on any given night, more than 30% of which are unsheltered.[83] More than 75,000 of these individuals are chronically homeless, which HUD defines as an individual with a disability who has been continuously homeless for at least 1 year or has experienced four or more episodes of homelessness in the last 3 years that add up to at least 12 months.[84] Poverty is associated with less human capital accumulation, meaning that the impoverished have fewer time and resources

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[82] Karl Widerquist and Michael A. Lewis, *An efficiency argument for the Basic Income Guarantee*, (International Journal of Environment, Workplace and Employment, 2006), 2
[83] U.S. Department of Housing and Urban Development (USHUD) Office of Community Planning and Development, *The 2016 Annual Homeless Assessment Report (AHAR) to Congress*, (USHUD, 2016), 1
[84] Ibid., 1-2

to dedicate to acquiring new knowledge or skills.[85] Because human capital is a driver of

economic growth, areas with higher poverty rates experience slower per capita growth on

average, ceteris paribus.[86] Child poverty in the United States is particularly costly, with costs

totaling more than $1 trillion per year, or 5.4% of GDP in 2015.[87] These costs are clustered

around the loss of economic productivity, increased healthcare costs, and costs stemming from

the maltreatment of homeless children.[88] But, while reducing poverty may seem expensive, it is

more costly to allow poverty to persist. Estimates show that, for every dollar spent on reducing

child poverty, the U.S. could save *at least* seven dollars by reducing the economic costs of

poverty.[89] Even disregarding the moral imperative to reduce poverty in a nation with more than

adequate means to do so, it is in the best interest of the U.S. economy to dedicate resources to

poverty reduction.

While it is clear that resources ought to be dedicated to reducing poverty, poverty

reduction strategies must be reevaluated. Traditional poverty relief programs have suffered from

significant drawbacks, including complexity, stigma, and poverty traps, that prevent the

programs from reaching their maximum effectiveness. The American approach to social policy,

as is the case with many developed nations with social safety nets, is comprised of a number of

targeted band-aid solutions that were created for problems as they arose.[90] Taken together, these

policies depict an opaque, complicated, and makeshift system that is difficult for beneficiaries to

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[85] U.S. Government Accountability Office (GAO), *Poverty in America: consequences for Individuals and the Economy,* (Testimony before the Chariman, Committee on Ways and Means, House of Representatives, 2007)
[86] Ibid.
[87] Michael McLaughlin & Mark R. Rank, *Estimating the economic cost of childhood poverty in the United States*, (Social Work Research, 2018), 14
[88] Ibid., 2
[89] McLaughlin & Rank, *Estimating the economic cost of childhood poverty in the United States*, 19
[90] Noah Zon, *Would a universal basic income reduce poverty?,* (Maytree Foundation, 2016), 10

navigate.[91] Universal basic income has the potential to replace an arbitrary, bureaucratic system with one that respects individuals' dignity and agency. UBI could also cover the gaps in social coverage that have arisen as a result of piecemeal policymaking while also responding to new social safety gaps resulting from social and economic transitions.[92]

In addition to complexity, traditional poverty relief programs and their recipients are dogged by stigma. Participating in means-tested and eligibility-restricted social programs de facto reveals what many people consider to be sensitive, personal information, making participants feel stigmatized.[93] Even the least intrusive, least demeaning procedures for means-tested programs suffer from stigma.[94] Stigma reduces the rate at which eligible individuals utilize services, decreasing the reach and impact of social programs.[95][96] A universal basic income, because of its universality, would not suffer from such a problem; there is no stigma in receiving a universal benefit.[97][98][99] Instead, a UBI could detangle the web of costly and demeaning factors of low-income life, allowing individuals to make freer decisions.[100] Removing humiliation and stigma from low-income life may be perceived as a benefit in and of itself to those in poverty.[101] This possibility has been confirmed by pilot results from India, Namibia, and Uganda, where UBI-like transfers increased recipients' sense of autonomy and responsibility while avoiding stigmatization.[102]

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[91] Zon, *Would a universal basic income reduce poverty?,* 10
[92] Ibid., 10
[93] Hoynes & Rothstein, *Universal Basic Income in the US and Advanced Countries*, 17
[94] Van Parijs, *Basic Income,* 9
[95] Hoynes & Rothstein, *Universal Basic Income in the US and Advanced Countries*, 17
[96] Van Parijs, *Basic Income,* 9
[97] Colombino, *Basic income policies,* 16
[98] Hoynes & Rothstein, *Universal Basic Income in the US and Advanced Countries*, 17
[99] Van Parijs, *Basic Income,* 9
[100] Hoynes & Rothstein, *Universal Basic Income in the US and Advanced Countries*, 5
[101] Van Parijs, *Basic Income,* 9
[102] Colombino, *Is unconditional basic income a viable alternative to other social welfare measures?*, 4

One of the biggest critiques of social programs put forward by economists is the 'poverty trap' ('welfare trap,' 'unemployment trap'). The poverty trap results when benefit phaseouts, in combination with the marginal taxes on new earned income, result in the lack of substantive monetary gains when beneficiaries pursue low-wage paid work as opposed to no work.[103] Put another way, the poverty trap results when benefit phaseouts incentivize program beneficiaries not to work. Because working would require significant effort and adjustment without much (if any) financial gain, beneficiaries are incentivized to abstain from paid work in order to maximize their well-being. With a universal basic income, however, benefit payments are neither interrupted nor reduced when accepting a job.[104] Some authors argue that the imposition of a flat tax on income would be necessary to eliminate the poverty trap.[105] This, however, is untrue. The poverty trap, by definition, is eliminated when basic security no longer depends on means-tested programs. Because basic security is not threatened by taking on paid work under a UBI scheme, work is not disincentivized. Even under a progressive tax system, there is no poverty trap because there is no benefit phaseout. A universal basic income, even funded by a progressive tax scheme, would not suffer from poverty traps.[106]

A universal basic income has incredible potential to reduce poverty more effectively than traditional, in-kind, means-tested programs. While a smaller proportion of funds would go to lower-income individuals than under the current system, a UBI would increase the absolute amount of transfer payments, creating what could be a very large downward redistribution of wealth.[107] If a UBI comes entirely at the expense of existing programs, however, those in poverty

[103] Van Parijs, *Basic Income,* 9-10
[104] Ibid., 10
[105] Harvey, *The relative cost of a universal basic income and a negative income tax,* 6
[106] Colombino, *Basic income policies,* 16
[107] Hoynes & Rothstein, *Universal Basic Income in the US and Advanced Countries*, 14

could be worse-off than they were before.[108] It is important, then, when implementing a universal basic income, to carefully target which social programs, if any, can be subsumed by the universal basic income.

Trials in the developing world have revealed a strong positive effect of unconditional cash transfers on low-income recipients.[109] Even modest transfers have measurably improved recipients' standard of living.[110] A pilot program in Namibia reduced food poverty by 60 percentage points, or almost 80%, benefitting both children and adults alike.[111] In India, unconditional transfers improved food security and reduced malnutrition, improving health outcomes as a result.[112] This is true in the developed world as well. Preliminary results from Finland's UBI trial revealed that recipients experienced less stress, fewer financial worries, and described their financial situation more positively than non-recipients.[113] Even UBI recipients who did experience financial difficulties reported less stress than non-recipients. UBI recipients also reported living more comfortably, coping better with life's troubles, and were less likely to find life difficult or very difficult.[114] Unconditional cash transfers of even a modest amount can contribute to long-term poverty reduction.[115]

A universal basic income could also be flexible enough to address a variety of needs that the program wasn't necessarily intended to address.[116] The secondary benefits of UBI could be

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108 Zon, *Would a universal basic income reduce poverty?,* 14
109 Ibid., 14
110 Ibid., 14
111 Dickson, *Living with Robots,* 15
112 Ibid., 17
113 Kela, *Basic income recipients experienced less financial insecurity*
114 Ibid.
115 Sudhanshu Handa et al., *Can unconditional cash transfers lead to sustainable poverty reduction? Evidence from two government-led programmes in Zambia,* (UNICF Office of Research, Florence, 2016), 10
116 Zon, *Would a universal basic income reduce poverty?,* 16

expansive, including but not limited to: greater school attendance, less food insecurity, less economic crime, increased participation in communities, and improving health outcomes.[117] Experimental results from Manitoba, Namibia, and Finland have confirmed that a UBI may have numerous unintended secondary benefits.[118][119] Cash transfers given to low-income families support basic needs and investments for children, including education.[120] Further, there is political value in the universality of UBI. Universal programs, like social security and Medicare, are a signal of inclusion and social acceptance. Along these lines, a universal basic income could be a way of expressing that all members of a society are valued and deserve basic economic security, potentially increasing the political viability of the program.[121]

A publicized waste of transfer payments would be guaranteed to eliminate social and political support for UBI. There could be no faster way for the program to become unpopular than people "blowing their grants on cocaine or wild holidays."[122] But evidence from pilot programs suggests that people do not waste their transfer. Quite the opposite: when you give money to people who need it, no strings attached, it gets used well.[123] In Namibia, citizens prevented transfers from being wasted on alcohol. Entirely free of direction or guidance, the Namibians self-organized and created a council that convinced alcohol sellers to close their stores on the day that transfer benefits were received.[124] Continual unconditional payments also do not foster dependency. Again in Namibia, most of the transfer payment was spent on assets

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[117] Dickson, *Living with Robots,* 23
[118] Ibid.*,* 13-16
[119] Kela, *Basic income recipients experienced less financial insecurity*
[120] Zon, *Would a universal basic income reduce poverty?,* 14
[121] Hoynes & Rothstein, *Universal Basic Income in the US and Advanced Countries*, 17
[122] Jurgen De Wispelaere & José Antonio Noguera, *On the political feasibility of universal basic income: An analytic framework,* (Basic Income Guarantee and Politics, Palgrave Macmillan, New York, 2012), 31
[123] Zon, *Would a universal basic income reduce poverty?,* 14
[124] Dickson, *Living with Robots,* 18

that improved economic creativity, increasing households' ability to earn, improving their quality of life.[125] In Kenya, researchers concluded that cash transfers have positive, sustained effects, and the benefits are not "consumed away."[126] Exactly the opposite: by allowing households to meet their needs, accumulate assets, and eventually diversify their livelihoods, they can make a positive contribution to sustainable economic growth.[127][128]

Effect on Health & Development

Closely related to a UBI's impact on poverty is its impact on health and development. A UBI could help to reduce health inequities, defined by the World Trade Organization (WTO) as avoidable inequalities in health outcomes, that have resulted in the wake of the 2008 financial crisis.[129] Income and income security are the most important social determinants of health, meaning that a lack of or insecure income can have negative effects on health outcomes.[130] By increasing income security, a UBI could have positive long-run effects on health and development, particularly for children.[131] This theoretical possibility has been bolstered by data from pilot projects. An NIT pilot in the United States found that receiving transfers improved housing and health conditions.[132] Unconditional transfers in Alaska and Manitoba have led to improved birth outcomes.[133][134] Results from a Kenyan experiment showed that unconditional transfers increased happiness, life satisfaction, and reduced stress, depression, and instances of

[125]Dickson, *Living with Robots,* 16

[126] Johannes Haushofer & Jeremy Shapiro, *The long-term impact of unconditional cash transfers: Experimental evidence from Kenya*, (Busara Center for Behavioral Economics, Nairobi, Kenya, 2018), 3

[127] Ibid., 30

[128] Handa et al., *Can unconditional cash transfers lead to sustainable poverty reduction?,* 30

[129] Arne Ruckert, Chau Huynh, & Ronald Labonté, *Reducing health inequities: is universal basic income the way forward?,* (Journal of Public Health, 2017), 3

[130] Ibid., 3

[131] Hoynes & Rothstein, *Universal Basic Income in the US and Advanced Countries*, 18

[132] Ruckert, Huynh, & Labonté, *Reducing health inequities,* 3

[133] Ibid., 3

[134] Zon, *Would a universal basic income reduce poverty?,* 14

domestic violence.[135] Pilot results from Manitoba and India found a notable reduction in healthcare utilization and occurrences of common illnesses, respectively.[136] Because low-income individuals utilize a disproportionate amount of healthcare services in comparison to their high-income counterparts, reducing healthcare utilization could create serious economic savings.[137]

In addition to improving health outcomes, a UBI could have positive effects for long-term child development. Early development is critical for children: the early stages of development influence children physically and behaviorally, affecting health and employment outcomes later in life.[138][139] Increasing parents' income can lead to improved school attendance and better grades for children, which may translate into greater self-investments in human capital and higher wages.[140][141] Indeed, a number of studies have provided a positive link between an unconditional basic income and literacy rates, dropout rates, and grades. In an Indian UBI pilot, many beneficiaries spent their transfer on school supplies for their children, boosting school enrollment by 12%.[142] In a Namibian pilot, 90% of the local school's fees were paid in full, which was described as an "unprecedented achievement" for the school.[143] These effects hold true for the developed world as well: pilot results from Manitoba, Canada revealed dramatic increases in high school attendance while families were receiving unconditional transfers.[144] Boosting school attendance and educational achievement improves health outcomes because achieving higher levels of education leads to a healthier lifestyle and a lengthened life

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[135] Haushofer & Shapiro, *The long-term impact of unconditional cash transfers,* 2
[136] Ruckert, Huynh, & Labonté, *Reducing health inequities,* 4
[137] Ibid., 4
[138] Hoynes & Rothstein, *Universal Basic Income in the US and Advanced Countries*, 16
[139] Ruckert, Huynh, & Labonté, *Reducing health inequities,* 3
[140] Ibid., 3
[141] Hoynes & Rothstein, *Universal Basic Income in the US and Advanced Countries*, 16
[142] Ruckert, Huynh, & Labonté, *Reducing health inequities,* 4
[143] Ibid., 4
[144] Dickson, *Living with Robots,* 15

expectancy.[145]A UBI, then, may have multigenerational effects that last for decades after the transfer program is initially implemented. These effects, because they would not be immediately revealed, will likely not be captured by pilot experiments. While their magnitude remains unknown, the potential multigenerational effects of a universal basic income warrant consideration.

Cost

The most pervasive criticism of a universal basic income is the cost. The cost of a UBI could vary widely among different proposals depending on policies' benefit levels, funding mechanisms and exclusions, as well as the programs that the UBI would replace.[146] Some cost estimates from developed UBI policy proposals with a benefit at the poverty level range from $2-3 trillion.[147][148] This, obviously, would require a significant increase in government revenue collections and spending. But before discussing possible UBI funding mechanisms, there are several ways that the total cost of a UBI can be reduced. First, a full UBI would make obsolete some federal programs like TANF and SNAP.[149] Additionally, the universal basic income could become a more targeted basic income: exclusions can be made for age or family income. Excluding people from eligibility could reduce the cost of a UBI by 20% (although the program would no longer be considered universal).[150] Similarly, reducing the benefit to children 16 years or younger by 50% could reduce the cost of a UBI by another 10-20%.[151] Removing obsolete programs will also bring cost savings, although to what extent is unknown. Excluding wealthy

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[145] Hoynes & Rothstein, *Universal Basic Income in the US and Advanced Countries*, 21
[146] Zon, *Would a universal basic income reduce poverty?,* 14
[147] Harvey, *The relative cost of a universal basic income and a negative income tax,* 6
[148] Hoynes & Rothstein, *Universal Basic Income in the US and Advanced Countries*, 6
[149] Ibid., 14
[150] Ibid., 6
[151] Kay, *The basics of basic income,* 72

households from transfers by creating an income requirement could significantly reduce the cost of a UBI, as the cost of transferring cash to net-contributing families accounts for a notable amount of the cost of a UBI.[152] Eliminating existing transfer programs and creating eligibility requirements, however, may have consequences that ultimately reduce the effectiveness of a universal basic income-like policy.

While the absolute cost of a UBI may be daunting, there are a litany of funding mechanisms available to policymakers that, together, are more than capable of raising the required amount of revenue. New government programs can be funded by using new or existing revenue. Programs funded by existing revenue do not require new taxes. Instead, existing funds are reallocated to fund the new program. Programs funded with new revenue require new or raised taxes. A UBI cannot be fully funded by existing revenue, but there is no reason that a UBI can't be partially funded by reallocating existing revenue. For example, the cost of a UBI could be reduced by eliminating now-obsolete programs and reducing defense spending. A UBI could also be partially funded by increasing appropriations to the Internal Revenue Service (IRS). Increasing the IRS's resources would improve compliance with tax laws, raising tax collections without raising tax rates.[153] Expanding enforcement options for the IRS would be an effective way to reduce noncompliance and increase revenue collections without changing tax rates.[154]

There are also a number of changes in the tax code that could be made to fund a UBI. Many UBI proposals propose adopting a flat tax rate. But, due to the effects of income inequality, it may be desirable to fund a UBI through progressive taxation.[155] Progressive

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[152] Zon, *Would a universal basic income reduce poverty?,* 19
[153] U.S. Congressional Budget Office (CBO), *Increase Appropriations for the Internal Revenue Service's Enforcement Initiatives,* (Options for Reducing the Deficit: 2019 to 2028, 2018)
[154] Ibid.
[155] Hoynes & Rothstein, *Universal Basic Income in the US and Advanced Countries*, 11

taxation would raise the breakeven point (the point where taxes owed is exactly equal to the UBI) by raising taxes on higher-income earners. Raising the tax rate on corporate earnings and incomes over $1 million could raise a significant amount of revenue. A wealth tax is another option. Other authors have discussed a land or resource tax.[156] Comparable to the Alaska Permanent Fund, a dividend from all non-green energy production in the U.S. could be used to fund a UBI. Alternatively, a tax on carbon emissions could be used to fund the UBI while making marginal progress in the fight against irreversible climate change. Some have suggested that a UBI, because it is a dividend on socially created wealth, be funded by the return on publicly owned assets.[157] Alternatively, a UBI could be funded by a tax on privately-owned wealth created at the expense of larger society, like a tax on automation. Other modern tax options include a value-added tax (VAT), taxes on speculative capital investment (Tobin taxes), or taxes on transfers of information (bit taxes). One proposal raises nearly $2 trillion in new revenue by using a combination of sources: eliminating some tax exemptions, eliminating programs deemed by the proposal's author to be made obsolete by the UBI, reducing defense spending, reverting the tax code to the code in 1994 while adding a 20% "surcharge" to incomes over $1 million, and extending the payroll tax to all earned income.[158] While the cost of a UBI may be large, it is clear that policymakers have the means to properly fund an adequate UBI.

Effect on Work

The second primary obstacle to the institution of a universal basic income is the perception that masses of people will exit the labor market to live on their UBI (known as free-

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[156] Van Parijs, *Basic Income,* 6
[157] Ibid., 6
[158] Dickson, *Living with Robots,* 9-10

riding or surfing), creating an immediate and total societal collapse. After outlining the argument against surfing, it will be demonstrated that this concern is overblown and lacks moral authority.

Some of the biggest behavioral questions surrounding UBI involve work incentives and labor market participation.[159] Economic theory would predict that, because a UBI must be funded with taxes, higher marginal tax rates would cause individuals to work less. Individuals would have an incentive not to work because the monetary gain they would receive from working an additional hour would be reduced.[160] Some evidence has shown that a 10% increase in unearned income will reduce earned income anywhere from 0.5% to 1%.[161][162] An analysis of Alaska Permanent Fund transfer recipients found that part-time employment increased by 17%, and there was no effect on overall employment.[163] In the series of NIT experiments in the U.S., very few individuals exited the labor market after becoming eligible for the transfer.[164] Those who did leave the labor force were likely to be mothers or individuals who had been forced to drop out of school because of financial difficulties.[165] When given the ability to go back to school to improve future outcomes, they chose to do so.

If there were a significant number of surfers who decided to drop out of the labor market, a UBI may become economically infeasible due to the loss of necessary tax base.[166] Even a small number of surfers, opponents claim, may prove to be problematic, as the perception of surfing will encourage others to surf, creating a snowball effect. Indeed, social factors have been

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[159] De Wispelaere & Noguera, *On the political feasibility of universal basic income,* 30
[160] Colombino, *Is unconditional basic income a viable alternative to other social welfare measures?*, 7
[161] Damon Jones & Ioana Marinescu, *The labor market impacts of universal and permanent cash transfers: Evidence from the Alaska permanent fund,* (National Bureau of Economic Research, 2018), 1
[162] Hoynes & Rothstein, *Universal Basic Income in the US and Advanced Countries*, 19
[163] Jones & Marinescu, *The labor market impacts of universal and permanent cash transfers,* 17
[164] Ruckert, Huynh, & Labonté, *Reducing health inequities,* 5
[165] Ibid., 5
[166] De Wispelaere & Noguera, *On the political feasibility of universal basic income,* 30

revealed as a strong influencer of labor market decisions.[167] While some microsimulations suggest a UBI may have negative labor market effects, the question is far from answered.[168][169] Advances in behavioral economics have raised questions about the validity of the rational actor (*homo economicus*) assumptions on which the negative labor market effects are based.[170] The traditional relationship between unearned income and work assumed by economic theory may warrant question.

There are two primary reasons to question the assumption that unearned subsistence would provide a significant disincentive to work. Not only does this assumption create an unrealistic image of individuals' aversion to work, it also ignores other incentives for businesses and individuals.[171] There are a number of reasons individuals might pursue paid work – income is only one of a set of factors that determine labor market participation.[172] Paid work can offer social contact, rewarding activity, and social recognition or prestige in ways that cannot be achieved without paid work.[173][174] Alternatively, people may choose to not pursue work not because they are lazy, but because the available work does not provide these benefits.[175] Therefore, higher marginal tax rates may have a lesser impact on individuals' decisions to work than working conditions and social factors.[176]

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[167] Ibid., 31

[168] Colombino, *Is unconditional basic income a viable alternative to other social welfare measures?*, 8

[169] De Wispelaere & Noguera, *On the political feasibility of universal basic income,* 31

[170] Harvey, *The relative cost of a universal basic income and a negative income tax,* 16

[171] Widerquist & Lewis, *An efficiency argument for the Basic Income Guarantee*, 25-26

[172] Philippe Van Parijs, *The universal basic income: Why utopian thinking matters, ad how sociologists can contribute to it,* (Politics & Society, 2013), 177

[173] Philippe Van Parijs, *Why surfers should be fed: the liberal case for an unconditional basic income,* (Philosophy & Public Affairs, 1991), 128

[174] Van Parijs, *The universal basic income,* 177

[175] Widerquist & Lewis, *An efficiency argument for the Basic Income Guarantee*, 14

[176] Van Parijs, *The universal basic income,* 177

Often omitted from the conversation about unconditional income and work is the impact of surfing on wages. If people were to drop out of the labor market en masse, employers would raise wages to induce surfers back to work.[177] Assuming that surfers can't be enticed back into the labor market is unrealistic: everyone has a price.[178] Further, there is reason to believe that a UBI would create incentives to enter work by removing the poverty trap.[179] Additionally, because workers with more human capital tend to work more and a UBI has been shown to increase investments in human capital, a UBI may encourage recipients to enter the labor market.[180] A UBI, then, creates a disincentive to work in the fact that one's ability to maintain the bare minimum level of subsistence is not impacted by their decision to not pursue paid work.[181]

A universal basic income could have a number of positive effects on the labor market and economy by increasing entrepreneurship, human capital investments, and granting more bargaining power to workers, all of which could encourage UBI recipients to pursue paid work.[182][183][184] A UBI could encourage entrepreneurial risk-taking by providing an income floor that guarantees subsistence in the event of failure.[185] A UBI, even if it is protected from creditors (as it ought to be), will ease borrowing constraints, making it easier for beneficiaries to get loans to pursue their entrepreneurial and educational goals.[186][187] This creates greater opportunities for

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[177] Widerquist & Lewis, *An efficiency argument for the Basic Income Guarantee*, 27
[178] Ibid., 26
[179] Ibid., 25
[180] Hoynes & Rothstein, *Universal Basic Income in the US and Advanced Countries*, 16
[181] Widerquist & Lewis, *An efficiency argument for the Basic Income Guarantee*, 25
[182] Manyika et. al, *Jobs lost, jobs gained,* 121
[183] Hoynes & Rothstein, *Universal Basic Income in the US and Advanced Countries*, 4
[184] Van Parijs, *The universal basic income,* 178
[185] Hoynes & Rothstein, *Universal Basic Income in the US and Advanced Countries*, 16
[186] Van Parijs, *Basic Income,* 5
[187] Hoynes & Rothstein, *Universal Basic Income in the US and Advanced Countries*, 16

UBI recipients.[188] Pilot programs have revealed the impact of these incentives: most of the

unconditional transfer from a Ugandan program was used to acquire a new skill, raising their

incomes by 40%.[189] A Namibian pilot found that unconditional cash transfers increased

economic creation activities by 25%.[190] In India, unconditional transfers reduced household debt

and the use of predatory lenders. In addition to the financial and marketplace effects, this

allowed Indian transfer recipients to better access government programs for which they were

eligible even before receiving the transfer.[191] The same idea holds true for switching jobs: UBI

encourages individuals to try out new ideas or train for new jobs.[192][193] A large number of UBI

recipients in experimental pilots have used their benefit to cover either new training or the costs

associated with changing jobs, like relocation.[194] Further, because individuals with more human

capital tend to work more, the use of a UBI to improve human capital will naturally offset, to an

extent that is currently unknown, any potential reductions in labor supply.[195] Ultimately, a

universal basic income gives individuals the financial ability, and possibly the motivation, to

invest in new skills or find new jobs, which eventually translates into higher wages.[196][197]

 The ability of laborers to more easily switch jobs or exit the labor market entirely will

improve the relative power of labor compared to capital. A guaranteed income floor would

provide the ability to leave a job without compromising basic security, giving low-wage workers

[188] Colombino, *Basic income policies,* 16
[189] Ibid.*,* 38
[190] Dickson, *Living with Robots,* 16
[191] Ibid., 17-18
[192] Klein, *Economic Rights and a Universal Basic Income*, 110
[193] Hoynes & Rothstein, *Universal Basic Income in the US and Advanced Countries*, 16
[194] Colombino, *Is unconditional basic income a viable alternative to other social welfare measures?*, 6
[195] Hoynes & Rothstein, *Universal Basic Income in the US and Advanced Countries*, 16-17
[196] Colombino, *Is unconditional basic income a viable alternative to other social welfare measures?*, 7
[197] Hoynes & Rothstein, *Universal Basic Income in the US and Advanced Countries*, 16

the bargaining power to petition for higher wages.[198] Bargaining power in the workplace and the

ability to take on non-market work will change employer-employee relations to benefit

workers.[199][200] Because employees will have more individual and collective power, employers

have greater incentives to acknowledge new and existing forms of workplace organization,

improving the quality of work.[201][202] This includes preventing the spread of "bullshit jobs"

(unskilled, unrewarding work) and, coupled with technical progress, could include eliminating

such unnecessary jobs altogether.[203][204][205] Opponents of UBI may claim that the elimination of

low-skill, low-wage jobs will cause numerous goods and services to become unavailable.

Services, they may claim, become unavailable because workers are demanding wages that

prevent the good or service from being produced profitably. This argument, however, is morally

baseless. If goods and services can only be produced profitably by exploiting labor and paying

wages that do not supply a decent standard of living, the goods and services ought not exist;

consumption of goods and services produced via exploitation is unethical. If these goods and

services are essential to a functioning society but cannot be produced profitably, they ought to be

provided by the government. If the good or service truly provides social value, demand will be

substantive enough to support decent wages.

The ability to leave paid work without sacrificing security, however, may incentivize

individuals to take on work that isn't valued by capitalist markets. There exists a litany of

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[198] Widerquist & Lewis, *An efficiency argument for the Basic Income Guarantee*, 14
[199] Van Parijs, *The universal basic income,* 174
[200] Erik Olin Wright, *Two redistributive proposals – universal basic income and stakeholder grants,* (Focus, 2006), 6
[201] Ibid., 6
[202] Van Parijs, *The universal basic income*, 174
[203] Kay, *The basics of basic income,* 69
[204] Van Parijs, *Basic Income,* 12
[205] Wright, *Two redistributive proposals,* 6

valuable activities that people want to do but are badly organized by markets.[206] A UBI could enable individuals to engage in politics, take up fine arts, or perform other desirable but unvalued activities. A UBI could also allow individuals to pursue paid work that better aligns with their individual preferences. This gives workers more autonomy and leverage in the labor market, reducing the class-based power imbalance inherent to capitalism.[207] Indeed, capitalist concepts of property and labor markets create persistent inequalities among groups that can be mitigated by providing guaranteed subsistence.[208] And while a UBI will not immediately rectify all grievances against those marginalized by capitalism, it could contribute to institutional change, improving long-term outcomes for workers.[209]

Closely related to this line of support is the feminist argument in favor of UBI. Women have gained independence from their husbands only to become dependent on wage labor, which often does not improve outcomes.[210] Women, especially as heads of house, experience a notably higher degree of poverty than men and are more stigmatized and marginalized than men, ceteris paribus.[211] In their working careers, women face disparities in pay, treatment, upward mobility, and task diversity.[212][213][214][215] Outside of their working careers, women are responsible for a

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[206] Wright, *Two redistributive proposals*, 6

[207] Ibid., 6

[208] Erik Olin Wright, *Real utopian proposals for reducing income and wealth inequality,* (Contemporary Sociology, 2000), 6

[209] Ibid., 26-27

[210] Erik Christensen, *Feminist arguments in favor of welfare and basic income in Denmark*, (Institut for Økonomi, Politik og Forvaltning, Aalborg Universitet, 2003), 24

[211] Schulz, *Universal basic income in a feminist perspective and gender analysis*, 90

[212] Ibid., 89

[213] Wright, *Real utopian proposals for reducing income and wealth inequality,* 16

[214] Rania Antonopoulos & Indira Hirway, *Unpaid Work and the Economy: Linkages and Their Implications*, (Levy Economics Institute, 2015), 5

[215] Carol Pateman, *Democratizing Citizenship: Some Advantages of a Basic Income*, (POLITICS & SOCIETY, 2004), 98

majority of unpaid, but necessary, home and care work.[216217218] While housework is continually

depicted as leisurely and enjoyable, those who perform care work describe it as a "labor of

sorrow and drudgery."[219] Unpaid care work places a regressive time-tax on women, reducing the

amount of time women can spend in the labor market or self-employment.[220] Unpaid care work

also shapes the duration and type of paid work that women can pursue, remanding them to jobs

that are unskilled, have low pay, limited options for promotion, and few workplace

protections.[221]

Some feminists fear that a UBI would perpetuate the status quo, reinforcing existing

exploitative power structures and divisions of labor. Because of the power disparity in labor

market interactions and social attitudes towards "women's work," women may face pressure to

abandon the labor force to take on more home and care work.[222223] Others argue that, when given

the option to pursue either paid or unpaid work, women simply tend to choose unpaid work.[224] A

UBI, these critics say, would perpetuate gender norms by creating an incentive for women to

pursue "women's work." Other critics claim that a UBI would not be sufficient to enable female

labor market participation. Because care work is often discussed in a binary dichotomy (either

self-provide or purchase childcare), paid work is often discussed in a binary dichotomy (either

pursue paid work or perform care work). Real decisions of care, however, are not binary. Rather,

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[216]Pateman, *Democratizing Citizenship*, 98

[217] Antonopoulos & Hirway, *Unpaid Work and the Economy*, 1

[218] Klein, *Economic Rights and a Universal Basic Income*, 110

[219] Antonopoulos & Hirway, *Unpaid Work and the Economy*, 5

[220] Ibid., 7

[221] Ibid., 12

[222] Pateman, *Democratizing Citizenship,* 100

[223]Anca Gheaus, *Basic Income, Gender Justice, and the Costs of Gender-Symmetrical Lifestyles*, (Basic Income Studies, 2008), 4-5

[224] Ruckert, Huynh, & Labonté, *Reducing health inequities,* 5

choices exist on a spectrum and utilize a number of paid and unpaid networks.[225] A UBI, these

critics argue, cannot account for the nuances of individual decisions of care.

Feminists who oppose UBI often do so because of a deeper contradiction in feminism

that can be explained by Wollstonecraft's Dilemma. It goes as follows: feminism has worked, on

one hand, for a gender-neutral, equitable society. On the other hand, feminists have sought to

have their distinctions from men recognized.[226] Feminism, then, is simultaneously seeking to

equate women with men while also differentiating women from men. UBI, however, can be a

solution, rather than a victim, to this dilemma. UBI can fulfill the desire for equality and

difference by creating a new kind of economic independence.[227] Because benefits are distributed

to individuals and not households, wives' benefits cannot be usurped by husbands, democratizing

citizenship and promoting self-government.[228] Women, freed from coercive structures in the

home and workplace, will be free to pursue their ambitions as individuals. By effectively

providing a livable wage to care workers, a UBI would give each woman her own economic

freedom, breaking the link between income, employment, and survival and replacing it with a

link between citizenship, freedom, and the security to seek meaningful employment.[229]

Opponents of UBI claim there is a contradiction inherent in UBI proponents' labor

arguments. If a UBI is intended to address labor issues like automation, then one might not be

concerned if individuals drop out of the labor market to pursue non-market work.[230]

Alternatively, critics claim, it is assumed in the funding mechanism of most proposals that

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[225] Jacqueline O'Reilly, *Can a Basic Income Lead to a More Gender Equal Society?*, (Basic Income Studies, 2008), 2
[226] Christensen, *Feminist arguments in favor of welfare and basic income in Denmark,* 1-2
[227] Ibid., 2-3
[228] Pateman, *Democratizing Citizenship,* 101
[229] Ibid., 97-98
[230] Hoynes & Rothstein, *Universal Basic Income in the US and Advanced Countries*, 4-5

aggregate income would not decrease in the face of new taxes.[231] This creates a conundrum: it would be difficult for individuals to take on more non-market activities without exiting the labor market, but increasing the prevalence of non-market activities (and therefore decreasing labor market participation) would undermine the tax base that funds the UBI.[232] But this argument oversimplifies the complex effects of a multifaceted policy goal. Opponents wrongly assume that the goal of a UBI is to make every person work more, less, or differently. Instead, the goal of a UBI is to allow each person to more freely pursue their preferences. By aiming to create a new kind of economic rights, a UBI avoids the contradiction claimed by opponents.

Research Questions & Hypotheses

Panel and cross-sectional data collected from this experiment was analyzed using multivariate OLS regressions to answer four questions: when controlling for education levels and educational opportunities, do UBI recipients work less, and do they dedicate more time to leisure activities? Do UBI recipients invest in education more often or at a faster rate than non-recipients? Do UBI recipients dedicate more resources to savings or consumption, both year-to-year and in total, than non-recipients? Does a UBI enable recipients to pursue productive activities? That is, does a UBI have a multiplier effect? This author would hypothesize that UBI recipients would work slightly less than non-recipients, dedicating more time to education (when it is available) or leisure activities. UBI recipients are predicted to save more but consume at a level comparable to non-recipients. Finally, this author would expect a UBI to have a multiplier effect for subjects' in-game scores. It should be noted, however, that the in-game multiplier effect is not quite the same as the multiplier effect observed in real-world pilot projects. Instead

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[231] Harvey, *The relative cost of a universal basic income and a negative income tax,* 14
[232] Ibid., 14

of through economic productivity, subjects would experience the multiplier effect if the UBI

enabled them to increase their education and pursue leisure activities. Although the real-world

and in-game multiplier effects are slightly different, observing the in-game multiplier effect can

be interpreted to mean that UBI recipients are making decisions that maximize their own well-

being.

Methods

Subjects were assigned profiles with varying education levels (Appendix Table 1). After

reading the rules and mechanics of the game, subjects first chose how many hours to work in a

week (0-40). The hours spent working was multiplied by the subject's wage and the number of

weeks in a year (52) to create an annual income. Any of the 40 hours not spent working became

leisure time, which could be used for either education or leisure activities. Subjects in the control

group only received income from working (and savings from past work) while subjects in the

treatment group received a $12,000 UBI in each of the ten rounds. Subjects' income, UBI, and

savings were added to determine their total cash. Subjects then made decisions about

consumption. All subjects were required to spend exactly $11,500 on required consumption,

simulating money that must be spent on food, shelter, and other basic necessities in a year.

Subjects had the option to purchase any amount of additional consumption goods ("extra

goods"), with the upper limit being equal to their total cash. Subjects were not required to

purchase any extra goods. After making decisions about consumption, subjects faced the

possibility of a random event. Subjects rolled a ten-sided die and, if the ten-sided die landed on

anything but 1, subjects did not face a random event and moved on. But, if the ten-sided die

landed on 1, subjects rolled a six-sided die to determine the outcome of their random event.

Random events could involve a low positive payout, a medium-sized spending requirement, or a

large spending requirement and could involve either cash or extra goods (Appendix Table 2).

Random events were intended to simulate the costs that would accompany unexpected life

events. Any unmet spending requirement penalized subjects' scores by three times the unmet

requirement.

After moving on from the random event, subjects had the opportunity to contribute to

education. The game contained three levels of education (no education, level one education, level

two education). Subjects began with either no education or level one education, meaning that all

subjects had the opportunity to achieve at least one higher level of education. The requirements

for obtaining level one and level two education were different: level one education necessitated

only 25 leisure hours while level two education required 40 leisure hours and $30,000 (Appendix

Table 3). Contributions to education could be spread over time so long as the contributions were

continuous and remained above a minimum amount. Achieving a higher level of education

earned subjects a wage increase in addition to points. Once a subject had achieved level two

education, they could not become more educated. At that point, subjects could only use leisure

time for leisure activities.

After determining contributions to education, any remaining leisure time was

automatically dedicated towards leisure activities. At that point, the "year" was considered to be

over. Subjects were able to view the points and penalties they earned in each round, their

cumulative score, and their cumulative cash savings. Subjects would repeat this process for 10

rounds. It is a common practice in experiments to have subjects make decisions over several

periods, as it allows researchers to collect more data over a shorter period of time.[233] The

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[233] Gary Charness, Uri Gneezy, and Brianna Halladay, *Experimental methods, pay one or pay all,* (Journal of Economic Behavior & Organization, 2016), 141

collection of data from the same decisions made repeatedly over time also allows researchers to discern causes for decision-making changes over time, including fixed individual effects and learning.[234]

Different actions taken by subjects yielded different amount of in-game points (Appendix Table 4). Subjects received one point for every dollar spent on mandatory consumption up to the $11,500 requirement. Subjects could not spend any more than $11,500 on mandatory consumption and, as such, could not receive more than 11,500 points from mandatory consumption in any round. If the consumption requirement was not met, subjects' scores were penalized by three times the unsatisfied requirement. For example, if a subject only spent $11,000 on mandatory consumption, their score would be penalized by 1500 points ($500 unmet requirement * 3). Penalties for random events were scored in the same manner.

Subjects received 0.75 points for every dollar spent on extra goods. While extra consumption was the lowest-scoring decision in terms of points per dollar, subjects were still incentivized to purchase extra goods to offset potential penalties resulting from random events. Any extra consumption past what it would take to satisfy the largest random penalty would be an inefficient use of resources based on the in-game scoring criteria.

Subjects received 1.2 points for every dollar spent on education. Time contributed to education was scored using the dollar value of leisure time which is equal to the amount the subject would have earned if they had worked. For example, if a subject earned $1,000 for 10 hours of work, the dollar value of 10 hours of leisure time would be $1,000. The dollar value of leisure time contributed to education is scored the same way as cash spent on education: subjects

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[234] Charness, Gneezy & Halladay, *Experimental methods, pay one or pay all.*, 141

receive 1.2 points for every dollar value of leisure time spent on education. Education points were not awarded until a new education level was obtained; students who do not finish their education do not reap the benefits. Increasing their level of education raised subjects' wages by about 10%, simulating the personal gain that results from getting a real-world education. Education was scored higher than consumption or savings to simulate the real-world societal pressure to get an education.

Leisure activities were also scored using the dollar value of leisure time. Subjects received 1.2 points for every dollar value of leisure time spent on leisure activities. Because subjects' wages increased with their education, leisure time became more valuable as subjects increased their level of education. Subjects received 0.95 points for every dollar of savings, but only after the completion of the final round. Leisure activities were scored higher than consumption or savings to simulate the disutility of work. Subjects, to maximize their score, would have rather spent all their time on leisure and none on work. But subjects were required to spend some money on consumption and, if they were risk averse, spent additional money on extra consumption. Subjects, therefore, faced competing incentives concerning work and leisure.

Subjects could determine a dominant strategy the information they were given. A subject who recognized the dominant strategy would achieve level two education as fast as possible, dedicating all time and discretionary resources to this objective. After obtaining level two education, the subject would work as little as possible to maximize leisure activities while continuing to pay the mandatory consumption requirement. For a subject in the treatment group, this would entail not working at all. The dominant strategy assumes that there are no random events so a subject pursuing this strategy would not purchase any extra consumption goods. Risk-averse subjects could alter the dominant strategy and work to have enough extra goods and

savings to offset a potential random event. By utilizing this strategy, a subject would maximize the resources dedicated to the highest point-earning decisions while minimizing the resources dwindled on lower point-earning decisions.

After completing the experiment, subjects received compensation in the form of an Amazon gift card, the amount of which varied depending on subjects' in-game scores (Appendix Table 5). While it is common for economic experiments to make use of financial incentives, payouts are typically awarded in cash.[235][236] Cash payments are common for two reasons: cash is universally valued and nonsatiable.[237] Everyone values money (unlike grade-related payouts, which would only hold value to certain students in certain classes) and more cash is always better. Amazon gift cards make a suitable proxy for cash payouts in this scenario. Because Amazon gift cards can be used to purchase a practically infinite number of goods (over 506 million in 2018[238]), it can be assumed that everyone values something that is sold on Amazon. This means that Amazon gift cards can be considered to have universal value. Further, because Amazon gift cards hold value in a manner comparable to cash, it can be assumed that Amazon gift cards are also nonsatiable.

Economic experiments use financial incentives to determine the impact of incentives on decision-making. A meta-analysis from Camerer and Hogarth (1999) found that financial incentives have a significant effect on judgement and decision-making tasks.[239] Further, Smith and Walker (1993) found that decision-dependent payouts reduce the variance of decision-

[235]Charness, Gneezy, & Halladay, *Experimental methods, pay one or pay all,* 141
[236] Rachel Croson, *The method of experimental economics*, (International Negotiation, 2005), 134
[237] Ibid., 134
[238] Tim Ranzetta, *Question of the Day: Amazon is called the 'Everything Store.' How many products do they carry?*, (Next Gen Personal Finance, 2018)
[239] Croson, *The method of experimental economics*, 135

making around the predicted outcome.[240] In other words, subjects follow incentives when it determines their payout. Economic theory presupposes a complete understanding of the relationship between an individual's actions and their payoffs.[241] This assumption is not irrational in the context of this experiment: each subject was given material detailing the requirements of the game, the different scoring mechanisms for different actions, and the financial incentive to take actions that score more points. It can be assumed that subjects understood the relationship between their actions and payoffs because they were given all the information necessary to make such a determination. Providing incentives encourages subjects to make decisions honestly, and non-arbitrary decision-making accurately reveals subjects' preferences.[242] Financial incentives have become essential to the internal validity of economic experiments and the value of using experiments to test economic theory.[243]

In order to accurately reveal subjects' preferences, incentives must be large enough to compensate subjects for their time. To do so, the average payoff should be comparable to the income potential subjects could have earned from working at a campus job.[244] Additionally, subjects must be compensated for thinking costs.[245] This experiment had four potential payouts: $5, $10, $15, and $25. The expected payout for any one subject would be equal to $11.25 for approximately 30 minutes of their time. This translates to an approximate payout of $22.50 per hour, more than twice the wage of undergraduate student research positions at the University of South Dakota. Because the payout from the experiment is large enough to compensate subjects

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[240] Ibid., 135
[241] Croson, *The method of experimental economics*, 133
[242] Charness, Gneezy, & Halladay, *Experimental methods, pay one or pay all,* 141
[243] Croson, *The method of experimental economics*, 134
[244] Ibid., 134
[245] Ibid., 134

for their time, the incentives utilized in the experiment could accurately reveal subjects'
preferences.

Traditionally, psychology experiments use a compensation scheme that is not dependent
on the decisions that subjects make; each subject receives the same compensation. Economic
experiments, however, use the concept of induced valuation to test economic theory, making
subjects' compensation dependent on the decisions they make.[246] This allows researchers to test
specific hypotheses against economic theories. Induced valuation was utilized to create a false
utility function for subjects. The false utility function incentivized subjects to value leisure,
education and vital consumption over work, savings, and non-vital consumption. Any deviation
from the false utility function can be interpreted as a subject's real utility function not aligning
with the false utility function. In other words, if subjects do not pursue the optimal in-game
strategy, the false utility function is not an accurate depiction of a subject's true preferences.

There is also concern that a common subject pool for economic lab experiments,
university students, do not act in a manner that is comparable to the general population.[247]
Exadaktylos, Espin, and Garza (2015) examined the decision-making differences between self-
selected students and non-students in five different experiments, each using the exact same
procedure for both subject groups, and found that self-selected students behave "in a very similar
manner" with every other group tested.[248] This held true in both individual comparisons (students
versus other specific demographic groups) and larger comparisons (students versus the non-

[246]Croson, *The method of experimental economics*, 133-134
[247] Filippos Exadaktylos, Antonio M. Espín, and Pablo Branas-Garza, *Experimental subjects are not different*,
(Scientific reports, 2013), 1
[248] Ibid., 4

student group at large).[249] The authors conclude that a sample of "self-selected college students… produces qualitatively and quantitatively accurate results."[250]

Subjects' decisions were analyzed using both panel and cross-sectional data. Panel data was created by treating every round from each subject as an individual observation. Panel data includes observations like the number of hours a subject worked in a particular round and a subject's wage and education level for a particular round. Each subject, then, created ten observations in the panel dataset. This helped to reveal how subjects' decisions changed over time in response to dynamic in-game factors like education and wage. Cross-sectional data was created by aggregating a subject's ten individual observations to create data that could describe differences between two subjects' large-scale decision making. Observations in the cross-sectional data include the number of times a subject improved their education over ten rounds, a subject's average contributions to education over ten rounds, and the average amount of time a subject dedicated to work or leisure over ten rounds. These observations do not show how subjects' individual decisions changed in response to every in-game shift, but do reveal more generally the patterns in subjects' aggregated decision-making.

Results

Before discussing results, it is pertinent to define and discuss the variables and statistical tests used. Data was collected in each round for each subject's profile, wage, education level, whether or not they received a UBI, and a number of other variables. Those variables are shown below in Table 6.

[249] Ibid., 4
[250] Ibid., 4

TABLE 6: Panel Data Variable Description	
Variable	**Description**
rd	*Round, 1-10*
profile1-4	*Four separate dummy variables for the four different profiles*
UBI	*Dummy variable for UBI, =1 if receive UBI*
wage	*Wage*
someeduc	*Dummy variable, =1 if subject has more than no education*
hrswrk	*Hours spent working per week, 0-40*
excon	*Dollar amount spent on extra consumption goods*
randevnt	*Dummy variable, =1 if there was a random event in the round*
eductime	*Time contributed to education, hours*
educcash	*Cash contributed to education, dollars*
leisact	*Hours spent on leisure activities*
cashrd	*Amount of cash at the end of each round, dollars*

Data from individual rounds was then aggregated to create variables to control for the number of levels of education a subject achieved, their average contributions to education, average time spent working, and total score. Those variables are shown in table 7 below.

TABLE 7: Cross-Section Variable Description	
Variable	**Description**
deltaeduc	*Number of times a subject improved their education*
avgeduccash	*Average of educcash by subject*
avgeductime	*Average of eductime by subject*
avgexcon	*Average of excon by subject*
avgwork	*Average of hrswrk by subject*
avgleisact	*Average of leisact by subject*
totgoods	*Total goods purchased by each subject, dollars*
endcash	*Amount of cash at the conclusion of ten rounds*
totscore	*Total score at the conclusion of ten rounds*
edudrop	*Dummy variable, =1 if subject abandoned contributions to education*

For statistical purposes, some variables were manipulated to create interaction terms and lagged variables. Interaction terms are created by multiplying the values of two variables to see if

the effect of one variable is dependent on another variable. For example, consider the following regression:

$$hrswrk = B0 + B1UBI + B2wage + B3ubiXwage$$

The variable *ubiXwage* is an interaction term between the dummy variable UBI and the wage variable. For someone receiving a UBI ($UBI = 1$) and earning \$15 per hour ($wage = 15$), the value of *ubiXwage* would be 15. Interaction terms allow the effect of a variable to be different for the control and treatment groups. In the example above, the effect of a UBI on time spent working would be equal to $B1 + B3wage$, allowing wage to have a different effect for the control and treatment groups. Creating a lagged variable, unlike an interaction term, does not actually change any of the data values. Instead, a lagged variable uses a value from a previous time period as an explanatory factor in the current time period. For example, consider the following regression.

$$educcash = B0 + B1UBI + B2hrswrk + B3cashrdLAG$$

The variable *cashrdLAG* uses the value from $cashrd_{n-1}$ to control for the amount of cash subjects had in the previous round. This regression would answer the question: what is the impact of a UBI on cash contributions to education, holding constant the amount of time spent working and cash savings from the previous year? A list of manipulated variables is shown in the table 8 on the following page.

TABLE 8: Manipulated Variable Description	
Variable	**Description**
ubiXp1-4	Interactions for UBI & each profile
cashrdLAG	$cashrd_{n-1}$
cashrdLAG2	$cashrd_{n-2}$
ubiXwage	Interaction term, UBI * wage
ubiXexcon	Interaction term, UBI * excon

Now that variables have been defined and discussed, it is pertinent to discuss some summary statistics shown in the table below.

TABLE 9: Summary Statistics					
Variable	**Obs**	**Mean**	**Std. Dev.**	**Min**	**Max**
UBI	1020	0.57	0.5	0	1
wage	1020	13.05	4.49	7.25	18.25
someeduc	1020	0.82	0.38	0	1
hrswrk	1020	28.74	9.6	0	40
excon	1020	3330	7789.7	0	100000
randevnt	1020	0.078	0.27	0	1
eductime	624	7.96	6.42	0	40
educcash	460	5764.87	5949.71	0	30000
leisact	1020	6.41	9.87	0	40
cashrd	1020	46406.79	54852.09	0	304504
deltaeduc	102	1.31	0.63	0	2
avgeduccash	102	8068.3	6465.8	0	30000
avgeductime	102	9.37	4.61	0	21.67
avgexcon	102	3330	4708	0	23500
avgwork	102	28.74	7.05	3.7	38.4
avgleisact	102	6.41	6.93	0	32
totgoods	102	33299.59	47080.09	0	235000
endcash	102	85052.75	83828.56	0	304504
totscore	102	340278.3	127056.6	75283	557325
edudrop	102	0.11	0.31	0	1

First, it can be observed that variables used in the cross-sectional dataset have 102 observations, as 102 subjects participated in the experiment. Most panel dataset variables have

1,020 observations, 10 observations for each of the 102 subjects. The *eductime* and *educcash*

variables, because of the experiment's design, were left null when subjects were not allowed to

contribute time or money to education. When subjects had no education, they could not

contribute cash because the first level of education only requires time contributions. Further,

after subjects had achieved the highest level of education, no more contributions could be made,

and both *eductime* and *educcash* were considered null. This allowed the true values of the

variables to be used and the true effects to be revealed; including zeroes where the subject could

not choose a number other than zero would obfuscate the true values and effects of these

variables. Because of this, some regressions will be run in triplicate: once for when subjects

could contribute to both education time and cash, once for when subjects could only contribute to

education time, and once for when education was no longer a possibility.

Further, just over 50% of subjects received the UBI, creating a sizeable treatment and

control group. The average wage was $13.05, although no subject ever earned that exact wage

because wages were fixed at predetermined levels based on profile and education level. A

subject in an average round spent about 28 hours working, spending about $3,330 on extra

goods. This is less than the amount of extra goods it would take to offset the most serious

random penalty, but this amount of consumption is capable of offsetting a moderate negative

event. Subjects, in an average round, would contribute almost 8 hours to education and

contribute about $5,800. About 11% of subjects would start an education that they did not

complete. Only one of those subjects would be a UBI recipient. Lastly, there was a notable

amount of variation in the *excon, educcash, leisact,* and *totgoods* variables, as the standard

deviations of the mentioned variables all exceed the means.

Because this research is primarily interested in determining the effect of UBI on life decisions, the primary variables of interest are *UBI* and any interaction terms created with *UBI*. While the presence of the other variables is important to avoid omitted variable bias, their coefficients and statistical significance are less important for the purposes of this research. Regressions were also tested for heteroskedasticity and functional form misspecification. Heteroskedasticity occurs when a regression's error term is not constant for all values of X. Because heteroskedasticity causes bias in the coefficients, it must be corrected by using heteroskedasticity-robust standard errors (robust SEs). By using standard errors that are calculated slightly differently, heteroskedasticity, and the resulting bias, can be avoided. Regressions are tested for functional form misspecification to reveal if any linear trends are forced onto nonlinear data (or vice versa). To test for functional form misspecification (FFM), the squared and cubed predicted values of a model were included as explanatory variables in the original regression. If the squared or cubed predicted values are individually or jointly significant, the model suffers from functional form misspecification. Misspecification, however, does not cause bias in the coefficients or restrict the use of inferential statistics like t- and F-statistics. Finally, each regression included a time trend variable (*rd*) to avoid spurious regression.

Regressions 1A, 1B, and 1C were designed to answer the question: when controlling for education levels and educational opportunities, do UBI recipients work less? Regression 1 was run in triplicate to account for the three educational scenarios mentioned above: no education (regression 1A), some education (regression 1B) and maximum education (regression 1C) obtained.

Regression 1A explains about 80% of the variation in time spent working and did not suffer from heteroskedasticity or functional form misspecification. Shown in regression 1A, UBI recipients work about twelve hours less than non-recipients when they have the opportunity to contribute both time and money to education, an effect that is statistically significant at the 1% level. Further, the positive coefficient on the interaction term *ubiXwage* can be interpreted to mean that increasing the wage of a UBI recipient by one dollar will lead the UBI recipient to work an additional 0.22 hours per week. This effect is statistically significant at the 5% level. Consumption of extra goods, while statistically significant with a positive effect on work for non-recipients, was associated with slight reductions in work but was not statistically significant.

Regression 1B explains slightly less variation in time spent working (76%) and was run using robust standard errors to correct for heteroskedasticity. Regression 1B also suffers from functional form misspecification, although this will not cause bias in the variable coefficients. UBI recipients, when they have the opportunity to contribute only time to education, work about 14 hours less than non-recipients. As in regression 1A, this effect is statistically significant at the 1% level. Further, the effect of wage on UBI recipients is nearly doubled to result in recipients working 0.43 hours more per week for each dollar that is added to their wage. This effect is significant at the 1% level. Finally, consuming extra goods is associated with a statistically significant reduction in time spent working for UBI recipients, a possible manifestation of the "surfing". Non-recipients, on the other hand, tend to work more when they consume extra goods, likely because the consumption must be funded by wages earned from work.

Regression 1C explains almost 90% of the variation in time spent working and, like regression 1B, was run with robust standard errors and suffers from functional form misspecification. When UBI recipients have achieved the highest level of education, they work

about 2 hours less than non-recipients, an effect that is *not* statistically significant at the 10% level. The effect of wage on UBI recipients in regression 1C is the opposite of in regressions 1A and 1B: increasing the wage of a UBI recipient is associated with a statistically significant 0.5 hour reduction in time spent working per week. This may be an example of subjects responding to in-game incentives: as subjects wages increased, the value of their leisure time increased, providing a stronger incentive for subjects to stop working. The effect of extra consumption on UBI recipients also changes when recipients do not have the ability to contribute to education. Extra consumption is associated with spending more time working for UBI recipients, an effect that is statistically significant and also practically significant: increasing extra consumption by one standard deviation, while holding other factors constant, would be associated with a 1.5 hour increase in time spent working for UBI recipients. The full results of regressions 1A-C are shown on the following page.

	Reg 1A	Reg 1B	Reg 1C
TABLE 10: Regression 1			
Y =	*hrswrk*	*hrswrk*	*hrswrk*
Adj. R-sq.	0.7969	0.7605	0.8881
F	101	72	344
n	408	214	345
Robust SE	No	Yes	Yes
FFM	No	Yes	Yes
UBI	(-12.1)***	(-14.28)***	(-2.18)
	[1.19]	[3.07]	[4.37]
ubiXwage	(0.22)**	(0.43)***	(-0.53)**
	[0.09]	[0.16]	[0.24]
ubiXexcon	(-0.00005)	(-0.0006)***	(0.0002)**
	[0.0001]	[0.0002]	[0.00009]
wage	(-1.14)***	(-3.23)*	(0.92)**
	[0.18]	[1.95]	[0.38]
excon	(0.0007)***	(0.001)***	(0.0009)***
	[0.00009]	[0.0003]	[0.00009]
randevnt	(0.157)	(0.56)	(1.23)*
	[0.63]	[0.92]	[0.64]
someeduc	(-5.4)	(2.46)	
	[3.38]	[3.03]	
eductime	(-0.485)***	(-0.35)**	
	[0.04]	[0.14]	
educcash	(0.0008)***		
	[0.00006]		
profile2	(0.62)	(11.2)	(-15.1)***
	[1.34]	[16.34]	[2.5]
profile3	(0.29)	(1.29)	(4.27)***
	[0.52]	[1.64]	[1.19]
profile4	(-0.82)	(12.3)	(-15.33)***
	[1.48]	[16.65]	[2.81]
cashrd	(0.0008)***	(0.0009)***	(0.001)***
	[0.00005]	[0.0002]	[0.00003]
cashrdLAG	(-0.0008)***	(-0.0009)***	(-0.001)***
	[0.00005]	[0.0002]	[0.00004]
cashrdLAG2	(-0.00001)***	(0.00000003)	(-0.00002)
	[0.000004]	[0.000003]	[0.00002]
rd	(-0.2)*	(-0.31)*	(0.036)
	[0.11]	[0.17]	[0.17]
cons	(48.7)***	(56.64)***	(10.46)**
	[3.66]	[14.64]	[5.24]
Note: stars (*) denote significance. * = 10%. ** = 5%, *** = 1%			

Regressions 2A and 2B reveal the effect of a UBI on time spent on leisure activities. Regression 2A explains just over half of the variation in time dedicated to leisure activities and suffers from serious functional form misspecification (F = 94.37). According to regression 2A, UBI recipients dedicate almost 12 more hours to leisure time per week, holding all other factors constant, an effect that is statistically significant at the 1% level. Interestingly, the effect of wage on leisure activity is negative for UBI recipients when given the opportunity to dedicate time and money to education, suggesting that UBI recipients, as their wages increase, may dedicate more resources to their education. The effect of a UBI on contributions to education will be discussed further below.

Regression 2B explains just under half of the variation in time dedicated to leisure activities when subjects could only contribute time to education. Regression 2B suffers from functional form misspecification (F = 27.75), and was run using robust standard errors. Similar to regression 2A, UBI recipients dedicate about 14 more hours to leisure time per week than non-recipients, ceteris paribus. Extra consumption is associated with a statistically significant increase in leisure activity for UBI recipients, opposite of the effect on non-recipients. The effect of wage on UBI recipients, interestingly, was negative in regressions 2A and 2B while positive for non-recipients. UBI recipients, then, dedicated less time to leisure activities as their wages increased, while non-recipients opted to take more leisure time as their wages increased. Regression 2 did not need to be run when subjects had achieved the highest level of education. Because once education was achieved the work-leisure decision became a binary dichotomy, running regression 2 when subjects had achieved the maximum level of education would reveal the exact same effects as regression 1C, just in the opposite direction.

TABLE 11: Regression 2		
	Reg 2A	**Reg 2B**
Y =	*leisact*	*leisact*
Adj. R-sq.	0.5368	0.4844
F	30	23.85
n	408	214
Robust SE	No	Yes
FFM	Yes	Yes
UBI	(11.91)***	(14.2)***
	[1.17]	[3.06]
ubiXwage	(-0.201)**	(-0.43)***
	[0.09]	[0.16]
ubiXexcon	(0.00004)	(0.00057)***
	[0.0001]	[0.0002]
wage	(1.124)***	(3.25)*
	[0.18]	[1.94]
excon	(-0.0007)***	(-0.0015)***
	[0.00009]	[0.0003]
randevnt	(-0.233)	(-0.55)
	[0.62]	[0.92]
someeduc	(5.233)	(-2.49)
	[3.34]	[3.01]
eductime	(-0.501)***	(-0.65)***
	[0.04]	[0.14]
educcash	(-0.0008)***	
	[0.00006]	
profile2	(-0.61)	(-11.39)
	[1.32]	[16.25]
profile3	(-0.255)	(-1.28)
	[0.52]	[1.63]
profile4	(0.972)	(-12.5)
	[1.47]	[16.55]
cashrd	(-0.0008)***	(-0.0009)***
	[0.00005]	[0.0002]
cashrdLAG	(0.0008)***	(0.0009)***
	[0.00005]	[0.0002]
cashrdLAG2	(0.00001)***	(-0.000000008)
	[0.000004]	[0.000003]
rd	(0.208)*	(0.313)*
	[0.11]	[0.17]
cons	(5.233)**	(-16.78)
	[3.62]	[14.55]
Note: stars (*) denote significance. *= 10%. ** = 5%, *** = 1%		

Regressions 3, 4, and 5 aim to discern the effect of a universal basic income on money and time dedicated to education. Regression 3 will utilize panel data to examine each year as an individual observation while regressions 4 and 5 will utilize cross-sectional data to analyze the aggregated decisions of each subject. Looking first at regression 3A, UBI recipients contribute more than $6,000 more to their education than non-recipients when controlling for other factors, an effect that is statistically significant at the 1% level. Turning to regression 3B, UBI recipients dedicate 8.6 hours more to their education per week when controlling for other factors, an effect that is again statistically significant at the 1% level.

	Reg 3A	Reg 3B
TABLE 12: Regression 3		
Y =	*educcash*	*eductime*
Adj. R-sq.	0.7659	0.5728
F	154.83	130.4
n	408	408
Robust SE	Yes	Yes
FFM	No	Yes
UBI	(6335.71)***	(8.573)***
	[1030]	[1.88]
ubiXwage	(62.43)	(-0.073)
	[80]	[0.12]
ubiXexcon	(-0.386)***	(-0.0002)*
	[0.11]	[0.0001]
wage	(1015.99)***	(1.056)***
	[108]	[0.19]
excon	(-0.355)***	(-0.0007)***
	[0.1]	[0.0001]
randevnt	(-695.2)	(0.485)
	[588]	[0.85]
someeduc	(1922.12)**	(3.22)***
	[769]	[1.1]
eductime	(-122)*	
	[63]	
educcash		(-0.0003)**
		[0.0001]
profile2	(-2554.4)***	(-0.176)
	[566]	[1.05]
profile3	(-928.03)**	(-0.051)
	[435]	[0.73]
profile4	(-2487)**	(-1.05)
	[988]	[1.37]
cashrd	(-0.653)***	(-0.0007)***
	[0.055]	[0.00009]
cashrdLAG	(0.686)***	(0.0007)***
	[0.058]	[0.0001]
cashrdLAG2	(0.0034)	(-0.000006)
	[0.004]	[0.000004]
rd	(-420.2)***	(-0.492)***
	[119]	[0.15]
cons	(-4167.5)***	(-2.63)
	[1128]	[1.84]
Note: stars (*) denote significance. * = 10%. ** = 5%, *** = 1%		

Regression 4A shows the effect of a UBI on cash contributions to education while holding constant a subject's starting profile. Profile 1 has been excluded from the regression to avoid collinearity and, as such, the coefficients on *profile2, profile3,* and *profile4* are interpreted in comparison to *profile1*. If the coefficient on a profile variable is positive, that profile gave larger cash contributions to education than profile 1, and vice versa. If another profile variable were to have a coefficient of zero, the two profiles would be associated with the same level of cash contributions to education. Additionally, interaction terms between *UBI* and the profile variables were created to reveal differing effects of a UBI on different socioeconomic groups. Profiles 2 and 4 made the largest cash contributions to education, which is reasonable considering that these profiles started with higher wages. Profiles 1 and 3 made notably smaller cash contributions to education. Profile 1 benefitted the most from a UBI in terms of cash contributions to education, although all profiles who received a UBI increased their cash contributions to education at some level, ranging from about $1,800 for profile 4 (initially the highest-paid, most educated profile) to almost $10,000 for profile 1 (initially the lowest-paid, least educated profile). Even when controlling for aggregate decisions about consumption, work, and leisure in regression 4B, UBI recipients make statistically significantly larger cash contributions to education. These results align with results from real-world pilot projects, suggesting that a UBI is used to acquire human capital, especially by the most disadvantaged.

TABLE 13: Regression 4		
	Reg 4A	**Reg 4B**
Y =	avgeduccash	avgeduccash
Adj. R-sq.	0.5371	0.5211
F	14.95	14.52
n	102	102
Robust SE	Yes	Yes
FFM	Yes	Yes
UBI	(9854.24)***	(7096.49)***
	[2243]	[2114]
ubiXp2	(-3405)	(-1431.62)
	[3017]	[2709]
ubiXp3	(-6239.55)*	(-3363.97)
	[3263]	[2922]
ubiXp4	(-8084.1)***	(-4487.88)
	[3052]	[2784]
profile2	(5368.3)**	(3667.42)*
	[2291]	[2094]
profile3	(1078.84)	(2450.22)
	[2415]	[2133]
profile4	(4953.14)**	(6847.23)***
	[2202]	[2043]
avgexcon		(-0.27)**
		[0.11]
avgwork		(-1890.33)***
		[399]
avgleisact		(-1813.92)***
		[404]
cons	(1812.4)	(68719.7)***
	[1620]	[14212]
Note: stars (*) denote significance. ** = 10%. ** = 5%, *** = 1%*		

Regression 5 uses the same method as regression 4 to determine the impact of a UBI on time spent on education. UBI recipients, regardless of their profile, dedicated more time to obtaining their education. Like in regression 4, the most well-off profiles tend to make the largest contributions to education and, as such, benefit the least from receiving a universal basic income.

The effect of a UBI on average contributions to education time, however, cannot be confirmed to vary by profile: while two of the three UBI/profile interaction terms were statistically significant in regression 4, none are significant in regression 5. This can be interpreted to mean that the effect of a UBI on the average amount of time contributed to education does not vary by profile. When other in-game decisions are controlled for in regression 5B, the effect of a UBI on average contributions to education time loses its statistical significance and all interaction terms remain insignificant, suggesting that decisions about work and leisure may be stronger determinants than the presence of a universal basic income. A UBI, however, by enabling subjects to work less, may allow subjects to dedicate more time, on average, to education.

TABLE 14: Regression 5		
	Reg 5A	**Reg 5B**
Y =	*avgeductime*	*avgeductime*
Adj. R-sq.	0.111	0.5709
F	4.15	20.2
n	102	102
Robust SE	No	No
FFM	Yes	No
UBI	{3.26)***	(1.75)***
	[0.87]	[0.65]
profile2	(1.19)	(0.11)
	[1.2]	[0.86]
profile3	(-0.28)	(3.02)***
	[1.3]	[0.97]
profile4	(0.92)	(3.2)***
	[1.2]	[1]
avgexcon		(-0.0001)
		[0.00007]
avgwork		(-1.96)***
		[0.25]
avgleisact		(-1.68)***
		[0.25]
cons	(6.97)***	(74.37)***
	[1]	[8.6]
Note: stars (*) denote significance.		
* = 10%. ** = 5%, *** = 1%		

Regression 6 aims to reveal the effect of a UBI on year-to-year cash savings. Regression 6, like regression 1, was run in triplicate to account for the effect of a UBI when recipients have no education (6A), some education (6B), and the highest level of education (6C). Looking at regression 6A, a UBI, when controlling for savings in the previous two periods, contributions to education, and consumption, among other factors, is associated with a more than $7,000 increase in annual savings. As would be expected, increasing extra consumption for both the treatment and control groups reduces savings, although to a lesser magnitude for the treatment group. This suggests that UBI recipients could increase their extra consumption while still receiving net savings, creating the potential for increases in aggregate demand and general economic equilibrium effects. Regression 6B yields comparable results to regression 6A: UBI recipients save almost $10,000 more per year than non-recipients when controlling for the abovementioned factors and continue to experience the negative effects of extra consumption on savings at a lower magnitude than non-recipients. When subjects have no opportunity to improve their education (regression 6C), the effect of UBI on cash savings loses its statistical significance. The ability of subjects to achieve an education (or more broadly the ability to acquire human capital), then, appears to be an important determinant in the effect of a universal basic income.

TABLE 15: Regression 6			
	Reg 6A	**Reg 6B**	**Reg 6C**
Y =	*cashrd*	*cashrd*	*cashrd*
Adj. R-sq.	0.9887	0.9979	0.9824
F	3194.5	13830	2875.3
n	408	214	345
Robust SE	Yes	Yes	Yes
FFM	Yes	Yes	Yes
UBI	(7367.4)***	(9695.7)***	(4431.8)
	[1154]	[1229]	[3433]
ubiXwage	(118.73)	(171.44)**	(-87.74)
	[91]	[100]	[223]
ubiXexcon	(-0.4)***	(-0.26)**	(-0.53)***
	[0.11]	[0.12]	[0.15]
wage	(1221.01)***	(-3033.1)*	(-29.89)
	[133]	[1814]	[809]
excon	(-0.59)***	(-0.72)***	(-0.36)***
	[0.086]	[0.11]	[0.13]
randevnt	(-655)	(-96.01)	(161.41)
	[802]	[555]	[1850]
someeduc	(579.57)	(5681.3)**	
	[945]	[2576]	
eduсcash	(-0.9)***		
	[0.038]		
eductime	(-440.39)***	(-548.4)***	
	[45]	[66]	
profile2	(-2465.3)***	(33384.4)**	(4368.2)
	[860]	[14058]	[6938]
profile3	(-449.36)	(1117.8)	(3000.8)**
	[471]	[1728]	[1167]
profile4	(-1850.3)	(36121.7)**	(1880.4)
	[1310]	[14323]	[7690]
cashrdLAG	(1.04)***	(1.04)***	(1.21)***
	[0.011]	[0.006]	[0.06]
cashrdLAG2	(0.006)	(0.003)	(-0.08)
	[5]	[0.003]	[0.07]
rd	(-613.9)***	(-679.3)***	(-2087.9)***
	[150]	[118]	[441]
cons	(-1985.3)	(28129.4)**	(19090.2)***
	[1532]	[13185]	[6898]
Note: stars (*) denote significance.		*= 10%. ** = 5%, *** = 1%*	

Regression 7 shows the effect of a UBI on total cash savings at the conclusion of the final round when controlling for other in-game factors. Only controlling for profile, UBI recipients ended the simulation with about $75,000 more than non-recipients. Even when controlling for a number of in-game factors, including profile, the number of times the subject improved their education, and their average time spent working, the effect of a *UBI* on *endcash* is large ($46,000) and statistically significant.

	Reg 7A	Reg 7B
	TABLE 16: Regression 7	
	Reg 7A	**Reg 7B**
Y =	*endcash*	*endcash*
Adj. R-sq.	0.3845	0.9821
F	15.39	635.15
n	102	102
Robust SE	Yes	Yes
FFM	No	No
UBI	(74471.76)***	(46081)***
	[12171.4]	[9234]
profile2	(85382.59)***	(6527.91)
	[15013.43]	[14249]
profile3	(5371.24)	(-19858.37)
	[8617.73]	[15854]
profile4	(56236.5)***	(10055.63)
	[17434.84]	[23562]
deltaeduc		(13104.15)
		[29890]
avgeduccash		(-0.023)
		[0.49]
avgeductime		(-103.85)
		[752.2]
avgwork		(12866.7)
		[7188]
avgleisact		(3545.28)
		[7202]
totgoods		(-0.87)***
		[0.053]
edudrop		(26991.6)
		[28782]
totscore		(0.57)***
		[0.071]
cons	(764.48)	(-517929.7)
	[7606.8]	[296052]
Note: stars (*) denote significance.		
* = 10%. ** = 5%, *** = 1%		

Regression 8 uses the same method as regression 7 to determine the effect of a UBI on the amount of total extra goods consumed over the course of a subject's ten rounds in the simulation. Only controlling for profile, UBI recipients ended the simulation having spent about $18,600 more on extra consumption goods than non-recipients. When controlling for factors

similar to regression 7, UBI recipients end the simulation having purchased almost $51,000 more

extra goods than non-recipients, again demonstrating the potential for positive aggregate demand

shocks.

TABLE 17: Regression 8		
	Reg 8A	**Reg 8B**
Y =	*totgoods*	*totgoods*
Adj. R-sq.	0.1807	0.801
F	5.23	32.26
n	102	102
Robust SE	Yes	No
FFM	No	Yes
UBI	(18621.5)**	(50858.7)***
	[8041]	[8997]
profile2	(18480.7)**	(19081.2)
	[8985]	[14168]
profile3	(10790)	(-9746.6)
	[8003]	[16304]
profile4	(48239)***	(32668.6)
	[11979]	[23927]
deltaeduc		(17333.4)
		[31013]
avgeduccash		(-0.43)
		[0.49]
avgeductime		(-453.2)
		[753]
avgwork		(11079.5)
		[7544]
avgleisact		(3066.6)
		[7540]
endcash		(-0.99)***
		[0.15]
edudrop		(20597.1)
		[30000]
totscore		(0.45)***
		[0.08]
cashrdLAG		(0.15)
		[0.17]
cons	(2104)	(-442199)
	[4979]	[310729]
Note: stars (*) denote significance.		
* = 10%. ** = 5%, *** = 1%		

Regression 9, the final model that will be examined individually before piecing the

models together to create a more holistic vision of the effects of a UBI, reveals the presence or

absence of a "multiplier effect" observed in some real-world pilot projects. A multiplier effect is

observed when a recipient uses their UBI to improve their financial well-being by an amount that

is greater than the value of the UBI. In pilot projects, the multiplier effect is observed when

recipients use their UBI to acquire human capital, raising their long-term earnings by more than

the amount of the UBI; recipients invest $1 to earn $2 more dollars. In the simulation, each

subject was given $120,000 over the course of ten rounds. If $115,000 was spent on basic

necessities over the course of ten rounds and the other $5,000 was saved, a UBI would be

expected to add 119,750 points to a subject's in-game score. If the presence of a UBI is

associated with an increase in score that exceeds 119,750 points, recipients took actions that

improved their well-being by an amount that exceeds the value of the UBI; the multiplier effect

is observed. Regression 9 reveals that the presence of a UBI is associated with a score increase of

over 135,000, indicating that subjects used their UBI beneficially. This results in a multiplier

effect of 1.14: UBI recipients were able to turn each dollar given to them into 1.14 points.

TABLE 18: Regression 9		
	Reg 9A	**Reg 9B**
Y =	*totscore*	*totscore*
Adj. R-sq.	0.8829	0.9034
F	191.37	135.98
n	102	102
Robust SE	No	No
FFM	No	No
UBI	(137108.6)***	(121992.5)***
	[8745]	[9810]
profile2	(185729.5)***	(178768.3)***
	[12014]	[12292]
profile3	(11054.3)	(34823)**
	[13130]	[15647]
profile4	(210807.1)***	(221108.3)***
	[12337]	[16064]
endcash		(-0.01)
		[0.061]
deltaeduc		(25834.8)*
		[13718]
edudrop		(-33653.2)
		[20907]
cons	(147789.6)***	(121547.3)***
	[10149]	[25486]
Note: stars (*) denote significance. * = 10%. ** = 5%, *** = 1%		

Discussion

It is appropriate, now, to aggregate the answers to individual questions to create a more holistic picture of the effects of a UBI on life decisions. According to the models above, UBI recipients work less than non-recipients and do dedicate some of that time to leisure activity. However, UBI recipients also dedicate more resources (in terms of both time and money) to education in any given round. The same effect holds true across subjects when decisions are aggregated. Even though they tend to work less, UBI recipients had higher levels of year-to-year saving in addition to more savings at the conclusion of the simulation. And while UBI recipients

saved more than non-recipients, they also spent more on consumption goods. This could represent potential aggregate demand and general equilibrium effects, but it could also represent a less-than-optimal use of UBI resources. All in all, however, UBI recipients use their UBI to increase their in-game score by more than the amount of the UBI they were given by 14%.

The results of this experiment align imperfectly with the results of real-world pilots. The effect on work, for the most part, aligns with most pilot results. In pilot projects, some small reductions in work have been observed. In many pilots, this time was used by subjects to improve their education or acquire human capital. The same holds true of this experiment. Larger reductions in time spent working were observed in the simulation, possibly due to the simulation's inability to account for complex social factors that have been shown to influence work decisions. UBI recipients did, however, achieve higher levels of education at a faster rate than non-recipients, regardless of their wage or education level at the beginning of the simulation. After subjects had achieved the highest level of education, the effect of a UBI on work shrunk dramatically and became statistically insignificant. This is consistent with several trials that have found no large-scale aggregate reduction in time spent working. The acquisition of human capital by UBI recipients in the simulation contributed to a multiplier effect, similar to the multiplier effect observed in some pilot projects where UBI recipients have improved their financial security by more than the nominal amount of the cash transfer. The acquisition of human capital, in addition to positive aggregate demand shocks and general equilibrium effects, helps offset the large-scale effect of a UBI on work. As mentioned above, individuals with more human capital tend to work more. So, by enabling individuals to acquire human capital, a UBI may also enable future labor market participation. Further, the ability of individuals to increase their consumption may create a positive shock to aggregate demand, enabling economic growth.

There are, however, a number of shortcomings to using simulations in general to predicting real-world effects of a policy. First, there are a number of factors and effects that interact with each other and cannot be simultaneously captured by a simulation. For example, while this experiment revealed that a UBI did have a notable impact on education, the effect of this educational attainment on improving health outcomes or child developments would be difficult to model. Additionally, the effect on democracy would be difficult to measure due to the social components of democratic decision making.

There are several aspects of this specific model that could be improved to create a more realistic simulation. First, the question of funding and taxes was not addressed in this simulation. Adding taxes to the model could affect individual decision making as recipients would have to pay taxes, some of whose taxes would exceed their UBI payment. This would likely affect individuals' work and consumption decisions. Further, taxes could have a serious effect on overall economic conditions, which were also not controlled for in this simulation. Taxes, as well as individual decisions about work, would have a significant effect on economic growth and could either bolster or erode the support and feasibility of a UBI.

Another aspect of this simulation that could be improved is the scoring mechanism. The weighted scoring could be changed to more accurately reflect the desirability of or individual utility gained from certain outcomes. By creating a model that more accurately reflects how subjects truly feel about certain decisions or outcomes, future researchers could observe effects that would be more comparable and applicable to the real world. By creating a model that encouraged subjects to take socially undesirable outcomes, researchers could test to what extent subjects respond to incentives. This could have two outcomes: first, if subjects respond to incentives, incentives could be constructed to accompany the UBI to achieve socially desirable

outcomes. Further, by measuring subjects' responsiveness to incentives, researchers could gain a more realistic understanding of the relative value of outcomes to individuals.

One final addition that could improve this experiment would be to collect data from participants via a survey at the conclusion of the simulation. There would be a number of ways to collect data on a number of different topics, ranging from a quantitative 1-to-5 measurement of how well subjects understood the simulation and the consequences of their actions to a qualitative, open-ended questions concerning how they felt about receiving the UBI and whether or not they felt like it improved their outcome. This, in addition to improving model design, could provide additional insight into the psychological effects of an unconditional cash transfer.

Conclusion

A universal basic income (UBI) is a universal, unconditional, cash payment regularly distributed to all individuals in a geographic area regardless of employment or economic status. While a UBI is discussed as a singular policy, there are a number of ways in which UBI and UBI-like policies are different from each other, each with its own unique construction and effects. A UBI may have a number of simultaneous primary effects, including but not limited to: improving economic security, achieving a just distribution of wealth, reducing poverty, combatting the negative effects of automation on labor, and ultimately separating paid work from survival. By providing unconditional security, UBI could reduce the uncertainty in the future of work while also reducing economic inequality. Equity, equality, and security are three important determinants of economic growth, which has a significant impact on politics and democracy. By mitigating wealth inequality and promoting equitable economic growth, a UBI could strengthen democratic principles while reducing support for extreme political platforms that marginalize minority groups. In addition to supporting marginalized groups, a UBI could support the

impoverished by providing income support that is simple, free of stigma, and without poverty traps. Because poverty is merely a cash shortage, not a symptom of personal irresponsibility or inferiority, a UBI has the potential to reduce absolute poverty. This would have two effects on the economy: first, the costs of poverty to the economy mentioned above (healthcare utilization, economic crime, maltreatment of homeless children, etc.) would be reduced. Second, because unconditional cash transfers in pilots and this simulation have not been wasted, UBI enables human capital accumulation, labor market participation, and entrepreneurship. This increases the economic productivity of recipients, resulting in a multiplier effect. A UBI could, then, have multigenerational effects that have not been captured by simulations or pilot projects. The positive effects of a cash transfer may continue to be realized for years, or possibly even decades.

While there are a number of reasons to support a UBI, there are also some criticisms. First, a UBI would be very expensive and would necessitate a substantial increase in government revenue collections and spending. However, there are ways to both reduce the cost of the policy (reducing the transfer amount for children under 16, excluding some based on age or family income) and raise revenue for the program (eliminate obsolete programs, reduce defense spending, new taxes). While these policy options all have their tradeoffs, it is clear that a full UBI could, with ample political will, be funded in the United States. Other critics of UBI claim that "Malibu surfers and welfare hippies" will stop working, creating negative labor market and economic effects.[251] This, however, does not seem to be true. While the full labor market effects of a nationwide UBI have yet to be observed, evidence from pilot projects and this simulation have found only small to moderate reductions in work. This time was used, in part, to acquire human capital, which may have enabled transfer recipients to re-enter the labor market. The total

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[251] Van Parijs, *Why surfers should be fed,* 130

effect of a UBI on work, then, appears to be minimal, especially when accounting for the increased demand for labor that would accompany a positive shock to aggregate demand.

In this experiment, subjects played a game in which they were assigned profiles with varying education levels and wages. About half of all subjects received a UBI. Subjects made decisions about work, consumption, education, and leisure, and savings while also having to be prepared for random events. The weighted scoring mechanisms provided different rewards for different actions, incentivizing subjects to improve their education and then maximize their leisure time. Both panel and cross-sectional data were analyzed using multivariate OLS regressions to answer four questions: when controlling for education levels and educational opportunities, do UBI recipients work less, and do they dedicate more time to leisure activities? Do UBI recipients invest in education more often or at a faster rate than non-recipients? Do UBI recipients dedicate more resources to savings or consumption, both year-to-year and in total, than non-recipients? Does a UBI result in a multiplier effect? It was hypothesized that UBI recipients would work slightly less, dedicating that time mostly to education and partially to leisure activities. It was further hypothesized that a multiplier effect would be observed, and that UBI recipients would save more but consume at a similar level to non-recipients. These hypotheses turned out to be partially correct: UBI recipients worked marginally less than anticipated and dedicated a larger-than-expected share of their leisure time to leisure activities. However, the effect of a UBI on work once education was no longer available shrunk dramatically and became statistically insignificant. This aligns with real-world pilots, where the effect of a UBI on work at large has been small. Also like real-world pilots, a multiplier effect was observed. This implies that simulation participants used their UBI to achieve outcomes that improved their well-being by an amount that exceeded the nominal value of the cash transfer. Finally, UBI recipients did

save more than non-recipients, but also consumed more than non-recipients. While this does not align with the author's hypothesis, it does align with some real-world pilot results where an unconditional cash transfer created a positive shock to aggregate demand, resulting in positive general economic equilibrium effects.

While this experiment has provided some weight to the arguments of UBI proponents, there are tradeoffs to using simulations as opposed to pilot projects to predict the real-world effects of public policy. Especially with a universal basic income, there are a number of complex social, psychological, and economic interactions that are difficult to model simultaneously. Without controlling for or being able to observe these interactions, the full potential effects of a UBI, positive or negative, may never be completely revealed. Future researchers can improve the value of this model by modifying the scoring mechanisms to test hypotheses, adding controls for taxes or economic conditions, and collecting data from participants after completing the survey. Taking these actions could help researchers to reveal some of the many potential effects of a UBI that were not captured in this model.

A universal basic income would no doubt represent a significant departure from traditional social policy. However, in an era of costly poverty, rising economic inequality, and threatening automation, the costs of defending the status quo could be remarkable. A UBI is a forward-looking social policy that respects personal autonomy, promotes agency and self-government, and reinforces democratic principles. Universal basic income, by separating paid work from survival, enables individuals to pursue a more prosperous life, resulting in positive outcomes for both the recipient and society. The positive results observed in real-world pilots and this experiment warrant further study. Policymakers should continue to consider UBI as an alternative to the traditional approach to social policy.

Appendix: Player Manual

PURPOSE

The purpose of the game is to maximize your score. The higher your score, the more you will be compensated at the end of the game. You earn points by buying goods, improving your education, participating in leisure activities, and saving money. Each action is scored differently, so how you use your money and time have a significant impact on your final score. After 10 rounds, your score will be totaled, and you will be compensated. After reading the player manual, you can see how each action is scored by viewing the SCORING table.

PROFILE

Before beginning the game, you will receive one of four profiles. Your profile contains important characteristics like education and income level. Your profile will be either low-income (LI) or medium-income (MI), and either educated or uneducated. Your income level and education are used to determine your wage. You will have the opportunity to improve your education, which will provide a boost to your wage. To see the characteristics of your profile, see: PROFILE table.

INCOME

Your income is your money that can be saved or used to buy goods or education. Your income is determined by your wage and the number of hours you choose to work in a week. You can work up to 40 hours a week (in 5-hour increments), or you could choose to not work. To view your profile's potential incomes, see: INCOME table.

UNIVERSAL BASIC INCOME (UBI)*

Each round you will receive $12,000, called a Universal Basic Income, in addition to any income you may choose to earn. There are no requirements to receive a Universal Basic Income, and there are no conditions on spending the money. As with the rest of your income, you are free to spend your Universal Basic Income how you please (keeping in mind the rules of the game).

LEISURE TIME

Any time not spent working is leisure time.

$$LEISURE\ TIME = 40 - HOURS\ WORKING/WK.$$

Leisure time can be used to improve education or spent on leisure activities. In either scenario, leisure time is scored by finding the dollar value of leisure time. The dollar value of leisure time is the income that you would have earned if you had used your leisure time to work. The dollar value of leisure time can be found using the INCOME table. Go to the INCOME table and, using your leisure time for the number of hours and your wage, find the dollar value of your leisure time.

$$DOLLAR\ VALUE\ OF\ LEISURE\ TIME = \#\ HOURS * WAGE$$

GOODS REQUIREMENT

You are required to purchase $11,500 of goods each round (things you <u>absolutely need</u> to get through the year, like housing, food, etc.) or face a penalty to your score. For every $1 spent on goods up to the $11,500 requirement, you will be awarded 1 point. If you fail to meet the goods requirement, your score will be penalized by three times the remaining requirement.

$$PENALITY = 3 * (\$11,500 - \$\ OF\ PLAYER\ GOODS\ CONTRIBUTED)$$

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* This section was only included for individuals in the treatment group.

EXTRA GOODS

After satisfying the $11,500 requirement, you can continue to purchase extra goods (things you don't <u>need</u> to get through the year, but enjoy having, like videogames, bicycles, makeup, etc.). For every $1 spent on extra goods after the $11,500 requirement, you will be awarded 0.75 points. Purchasing additional goods after the requirement may be important, as random events may require you to forfeit goods or face a penalty to your score.

RANDOM EVENT

Each round there will be a 1-in-10 chance that a random event will occur. In the case of a random event, one of six scenarios may occur. Scenarios may involve cash or goods and may be positive or negative. Negative events may be large or small. If the random event is positive, the goods or cash are awarded. If the event is negative, you will be required to forfeit cash or goods. If you don't have the cash or goods to pay the requirement, you will be penalized by three times the remaining payment.

$$PENALTY = 3 * (REQUIRED\ PAYMENT - PLAYER\ CONTRIBUTION)$$

EDUCATION

As mentioned above, your education impacts your wage. If you began as uneducated, you can 'get educated' and receive a boost to your wage at the beginning of the next round. After you are educated, you can invest in higher education to receive another boost to your wage. To see the requirements of obtaining education and the reward for doing so, see the EDUCATION table and your Education Scorecard. Contributions to education carry over between rounds, so long as you contribute at least 5 hours (and $5,000 for higher ed) per year.

Education is scored after finishing a new level of education. If contributions to education are abandoned before completing the requirements, no points are awarded. For every $1 spent on education, 1.2 points will be awarded. Leisure time spent on education is scored by calculating the dollar value of leisure time. For every $1 value of leisure time, 1.2 points will be awarded. <u>The points earned from achieving each level of education are shown on your Education Scorecard.</u>

LEISURE ACTIVITY

Time not spent working can be spent on leisure activities (concerts, hiking, traveling, and other <u>experiences</u>). Leisure time can only be utilized for education or leisure activities. Leisure activities are scored by finding the dollar value of leisure time. For every $1 value of leisure activity, 1.2 points will be awarded.

SAVINGS

Saved cash carries over between rounds. Savings may be important, as random events may require you to pay a fee or face a penalty to your score (see: RANDOM EVENT section). After ten rounds, your savings will be scored. For every $1 of savings after 10 rounds, 0.95 points will be awarded.

THE SCORECARD

Along with the player manual, you should have scorecards and gameplay instructions. The gameplay instructions contain step-by-step instructions that correspond with the numbered on the blanks on the scorecard. <u>Filling out your scorecard correctly is essential to receiving proper compensation.</u> After you have completed the game, return your scorecards and all other materials. Once all materials have been returned and scorecards have been checked, you will be compensated according to your final score.

TABLE 1: Profile Table

PROFILE	INCOME	EDUCATION	WAGE
Profile 1	Low	Uneducated	$7.25
Profile 2	Medium	Uneducated	$15
Profile 3	Low	Educated	$8
Profile 4	Medium	Educated	$16.50

TABLE 2: Random Event Table

SCENARIO	OUTCOME	CATEGORY
Scenario 1	*Christmas Bonus, +$600*	Monetary (Positive)
Scenario 2	*Fired from Job, -$5,800*	Monetary (High Negative)
Scenario 3	*Temporarily Laid Off, -$2,900*	Monetary (Low Negative)
Scenario 4	*Inheritance, +$600 of goods*	Goods (Positive)
Scenario 5	*Natural Disaster, -$5,800 of goods*	Goods (High Negative)
Scenario 6	*Contaminated Food, -$2,900 of goods*	Goods (Low Negative)

TABLE 3: Education Table

EDUCATION LEVEL	HR REQ	$ REQ	REWARD
Uneducated	-	-	-
Educated	25 HRS	-	LI: $0.75; MI $1.50
Higher Education	40 HRS	$30,000	LI: $1; MI: $1.75

TABLE 4: Scoring Table

ACTION	SCORE (PER $1 OR HR)	CARRY OVER?
Savings	0.95 at conclusion of Rd. 10	Yes
Goods	1 up to $11,500; 0.75 afterward	No
Leisure time	$ VALUE of LEISURE * 1.2	No
Education	Cash & $ VAL of LEISURE * 1.2	Yes, if continuous

TABLE 5: Scoring Table

SCORE	REWARD
Less than 200,000 pts.	$5
200,000 – 374,999 pts.	$10
375,000 – 524,999 pts.	$15
525,000+ pts.	$25

Works Cited

Antonopoulos, Rania and Indira Hirway."Unpaid Work and the Economy: Linkages and Their Implications." *Levy Economics Institute* (May 2015). Retrieved from http://www.levyinstitute.org/pubs/wp_838.pdf

Brueckner, Markus, and Daniel Lederman. "Effects of income inequality on aggregate output." *The World Bank* (2015). Retrieved from https://elibrary.worldbank.org/doi/abs/10.1596/1813-9450-7317

Brueckner, Markus, and Hans Peter Gruner. "Economic growth and the rise of political extremism: theory and evidence." (2010). Retrieved from https://www.aeaweb.org/conference/2011/retrieve.php?pdfid=39

Charness, Gary, Uri Gneezy, and Brianna Halladay. "Experimental methods: Pay one or pay all." *Journal of Economic Behavior & Organization* 131 (2016): 141-150. Retrieved from https://rady.ucsd.edu/docs/pay-one.pdf

Cheung, Felix, and Richard E. Lucas. "Income inequality is associated with stronger social comparison effects: The effect of relative income on life satisfaction." *Journal of personality and social psychology* 110, no. 2 (2016): 332. Retrieved from https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4718872/

Christensen, Erik. "Feminist arguments in favor of welfare and basic income in Denmark." *Institut for Økonomi, Politik og Forvaltning, Aalborg Universitet* (2003). Retrieved from http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.583.5057&rep=rep1&type=pdf

Colombino, Ugo. "Basic income policies: theory and empirical evidence." *Focus* 10 (2017): 11-30. Retrieved from https://www.researchgate.net/profile/Ugo_Colombino/publication/320402858_Basic_income_policies_theory_and_empirical_evidence/links/59e23230a6fdcc7154d80dab/Basic-income-policies-theory-and-empirical-evidence.pdf

Colombino, Ugo. "Is unconditional basic income a viable alternative to other social welfare measures?." *IZA World of Labor* (2019). Retrieved from https://wol.iza.org/articles/is-unconditional-basic-   income-viable-alternative-to-other-social-welfare-measures/long

Croson, Rachel. "The method of experimental economics." *International Negotiation* 10, no. 1 (2005): 131-148. Retrieved from https://econlab.uaa.alaska.edu/iasc2013/IASC2013/Readings_files/Croson2005.pdf

De Wispelaere, Jurgen, and José Antonio Noguera. "On the political feasibility of universal basic income: An analytic framework." *Basic Income Guarantee and Politics*, pp. 17-38. Palgrave Macmillan, New York, 2012. Retrieved from https://www.researchgate.net/profile/Jurgen_Wispelaere/publication/304799382_On_the_Political_Feasibility_of_Universal_Basic_Income_An_Analytic_Framework/links/5782bd8208ae01f7_36e8f0fe/On-the-Political-Feasibility-of-Universal-Basic-Income-An-Analytic-Framework.pdf

De Wispelaere, Jurgen, and Lindsay Stirton. "The many faces of universal basic income." *The Political Quarterly* 75, no. 3 (2004): 266-274. Retrieved from https://s3.amazonaws.com/academia.edu.documents/1012775/DeWispelaereStirton2004_PQ75_3_.pdf?AWSAccessKeyId=AKIAIWOWYYGZ2Y53UL3A&Expires=1551560790&Signature=%2Bok_Io3BmDZ0VhvXpJYtrSvYBYlE%3D&response-content-disposition=inline%3B%20filename%3DThe_Many_Faces_of_Universal_Basic_Income.pdf

Dickson, Michael. "Living with Robots: Automation and Income Inequality in the 21st Century." (2017). Retrieved from https://digitalcommons.tacoma.uw.edu/cgi/viewcontent.cgi?article=1043&context=gh_theses

Exadaktylos, Filippos, Antonio M. Espín, and Pablo Branas-Garza. "Experimental subjects are not different." *Scientific reports* 3 (2013): 1-6. Retrieved from https://www.nature.com/articles/srep01213.pdf

Gheaus, Anca. "Basic Income, Gender Justice, and the Costs of Gender-symmetrical Lifestyles." Basic Income Studies 3, no. 3 (December 2008). Retrieved from https://philarchive.org/archive/GHEBIG

Grafstein, Robert. "The Political Economy of Extremism and Moderation." In *7th general conference of the European consortium for political research, Bordeaux*, vol. 6. 2013. Retrieved from https://ecpr.eu/filestore/paperproposal/1d16040d-8d2d-48f5-a805-22fdaefc6eae.pdf

Handa, Sudhanshu, Luisa Natali, David Seidenfeld, Gelson Tembo, and Benjamin Davis. "Can unconditional cash transfers lead to sustainable poverty reduction? Evidence from two government-led programmes in Zambia." *UNICEF Office of Research, Florence* 21 (2016). Retrieved from http://www.sitesideas.org/public/ideas/files/F30M2_1_Handa_et_al.pdf

Harvey, Philip L. "The relative cost of a universal basic income and a negative income tax." *Basic Income Studies* 1, no. 2 (2006). Retrieved from https://njfac.org/wp-content/uploads/2018/05/The-Relative-Cost-of-a-UBI-and-NIT-2006-1.pdf

Haushofer, Johannes, and Jeremy Shapiro. "The long-term impact of unconditional cash transfers: Experimental evidence from kenya." *Busara Center for Behavioral Economics, Nairobi, Kenya* (2018). Retrieved from https://www.povertyactionlab.org/sites/default/files/publications/The-long-term-impact-of-conditional-cash-tranfer_Kenya_Haushofer_Shapiro_January2018.pdf

Hill, Terrence D., and Andrew Jorgenson. "Bring out your dead!: A study of income inequality and life expectancy in the United States, 2000–2010." *Health & place* 49 (2018): 1-6. Retrieved from https://www.sciencedirect.com/science/article/pii/S1353829217306573

Hoynes, Hilary W., and Jesse Rothstein. "Universal Basic Income in the US and Advanced Countries." *National Bureau of Economic Research* No. w25538 (February 2019). Retrieved from https://eml.berkeley.edu/~jrothst/workingpapers/w25538.pdf

Jones, Damon, and Ioana Marinescu. "The labor market impacts of universal and permanent cash transfers: Evidence from the Alaska permanent fund." *National Bureau of Economic Research* No. w24312. (2018). https://www.econstor.eu/bitstream/10419/177160/1/dp11356.pdf

Kay, John. "The basics of basic income." *Intereconomics* 52, no. 2 (2017): 69-74. Retrieved from https://www.econstor.eu/bitstream/10419/172804/1/069-074-Forum-Kay.pdf

Kela. "Basic income recipients experienced less financial insecurity." *Kansanelakelaitos – The Social Insurance Institution of Finalnd* (April 4, 2019) Retrieved from https://www.kela.fi/web/en/news-archive/-/asset_publisher/lN08GY2nIrZo/content/basic-income-recipients-experienced-less-financial-insecurity

Klein, Elise. "Economic Rights and a Universal Basic Income." *Griffith Journal of Law & Human Dignity* 6, no. 1 (2018). Retrieved from https://griffithlawjournal.org/index.php/gjlhd/article/download/1056/932

Krieger, Tim, and Daniel Meierrieks. "Political capitalism: The interaction between income inequality, economic freedom and democracy." *European Journal of Political Economy* 45 (2016): 115-132. Retrieved from https://www.econstor.eu/bitstream/10419/128383/1/cesifo1_wp5681.pdf

Manyika, James, Susan Lund, Michael Chui, Jacques Bughin, Jonathan Woetzel, Parul Batra, Ryan Ko, and Saurabh Sanghvi. "Jobs lost, jobs gained: Workforce transitions in a time of automation." *McKinsey Global Institute* (2017).

McAdams, Richard H. "Economic Costs of Inequality: The Role of Race in Law, Markets, and Social Structures." (2007). Retrieved from https://chicagounbound.uchicago.edu/cgi/viewcontent.cgi?referer=https://scholar.google.com/&httpsredir=1&article=1506&context=law_and_economics

McLaughlin, Michael, and Mark R. Rank. "Estimating the economic cost of childhood poverty in the United States." *Social Work Research* 42, no. 2 (2018): 73-83. Retrieved from https://academic.oup.com/swr/article/42/2/73/4956930

Orange accent 2 darker 50% - O'Connor, Nat. "Three Connections between Rising Economic Inequality and the Rise of Populism." *Irish Studies in International Affairs* 28 (2017): 29-43. Retrieved from https://www.jstor.org/stable/10.3318/isia.2017.28.5?seq=1#page_scan_tab_contents

O'Reilly, Jacqueline. "Can a Basic Income Lead to a More Gender Equal Society?" *Basic Income Studies* 3, no. 3 (December 2008). Retrieved from

Pateman, Carol. "Democratizing Citizenship: Some Advantages of a Basic Income." *POLITICS & SOCIETY*, 32, no. 1 (March 2004): 89-105. Retrieved from http://www.sscnet.ucla.edu/polisci/faculty/pateman/Democratizing.pdf

Ranzetta, Tim. "Question of the Day: Amazon is called the "Everything Store." How many products do they carry?" *Next Gen Personal Finance* (October 2018). Retrieved from https://www.ngpf.org/blog/current-events/question-of-the-day-amazon-is-called-the-everything-store-how-many-products-do-they-carry/

Roe, Mark J., and Jordan I. Siegel. "Political instability: Effects on financial development, roots in the severity of economic inequality." *Journal of Comparative Economics* 39, no. 3 (2011): 279-309. Retrieved from https://dash.harvard.edu/bitstream/handle/1/12019047/SSRN-id963214.pdf?sequence=1

Ruckert, Arne, Chau Huynh, and Ronald Labonté. "Reducing health inequities: is universal basic income the way forward?." *Journal of Public Health* 40, no. 1 (2017): 3-7. Retrieved from https://academic.oup.com/jpubhealth/article-pdf/40/1/3/24372631/fdx006.pdf

Schulz, Patricia. "Universal basic income in a feminist perspective and gender analysis." *Global social policy* 17, no. 1 (2017): 89-92. Retrieved from https://journals.sagepub.com/doi/full/10.1177/1468018116686503

Straubhaar, Thomas. "On the economics of a universal basic income." *Intereconomics* 52, no. 2 (2017): 74-80. Retrieved from https://www.ceps.eu/system/files/IEForum22017_2.pdf

U.S. Congressional Budget Office (CBO). "Increase Appropriations for the Internal Revenue Service's Enforcement Initiatives." *Options for Reducing the Deficit: 2019 to 2028*, (December 2018). Retrieved from https://www.cbo.gov/budget-options/2018/54826

U.S. Department of Housing and Urban Development (USHUD) Office of Community Planning and Development. "The 2016 Annual Homeless Assessment Report (AHAR) to Congress." *USHUD* (November 2016). Retrieved from https://www.hudexchange.info/resources/documents/2016-AHAR-Part-1.pdf

U.S. Government Accountability Office (GAO). "Poverty in America: consequences for Individuals and the Economy." *Testimony before the Chariman, Committee on Ways and Means, House of Representatives,* (January 2007). Retrieved from https://www.gao.gov/assets/120/115212.pdf

Van Parijs, Philippe. "Why surfers should be fed: the liberal case for an unconditional basic income." *Philosophy & Public Affairs* (1991): 101-131. Retrieved from https://cdn.uclouvain.be/public/Exports%20reddot/etes/documents/1991l.Surfers.pdf

Van Parijs, Philippe. "Basic income: a simple and powerful idea for the twenty-first century." *Politics & Society* 32, no. 1 (2004): 7-39. Retrieved from https://www.ssc.wisc.edu/soc/faculty/pages/wright/RUP-vol-V.pdf#page=6

Van Parijs, Philippe. "The universal basic income: Why utopian thinking matters, and how sociologists can contribute to it." *Politics & Society* 41, no. 2 (2013): 171-182. Retrieved from https://www.ssc.wisc.edu/~wright/929-utopias-2013/Real%20Utopia%20Readings/Politics%20&%20Society-2013-Van%20Parijs-171-82.pdf

Widerquist, Karl, and Michael A. Lewis. "An efficiency argument for the Basic Income Guarantee." *International Journal of Environment, Workplace and Employment* 2, no. 1 (2006): 21-43. Retrieved from http://www.widerquist.com/karl/Articles--scholarly/Efficiency_Argument--IJEWE.pdf

Wright, Erik Olin. "Real utopian proposals for reducing income and wealth inequality." *To appear in Contemporary Sociology* (2000). Retrieved from http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.22.599&rep=rep1&type=pdf

Wright, Erik Olin. "Two redistributive proposals–universal basic income and stakeholder grants." *Focus* 24, no. 2 (2006): 5-7. Retrieved from https://www.aacademica.org/erik.olin.wright/21.pdf

Zon, Noah. "Would a universal basic income reduce poverty?" *Maytree Foundation* (2016).