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A Review on *Basic Income: A Radical Proposal for a Free Society and a Sane Economy* by Philippe Van Parijs and Yannick Vanderborght†

By Caterina Calsamiglia and Sabine Flamand*

In order to clarify the potential impact of a basic income, we argue that any discussion on whether to adopt a basic income policy should be framed within the greater context of the transfer system as a whole. In particular, such discussion should consider separately the issues of (i) the desired income distribution to be achieved and (ii) the most efficient way of achieving it through a transfer system. Further, we stress the importance of the non-take-up phenomenon in current transfer systems and discuss the potential necessity of a basic income policy in the age of automation. (*JEL* D31, I32, I38)

1. *Book Summary*

Long considered a radical and implausible idea, the unconditional basic income (BI) is now one of the most widely discussed welfare policy proposals worldwide. In *Basic Income: A Radical Proposal for a Free Society and a Sane Economy*, Philippe Van Parijs and Yannick Vanderborght provide a comprehensive review of all the arguments in favor of or against the implementation of an unconditional BI policy. The book encompasses philosophical, ethical, and efficiency considerations; historical perspectives; comparisons with alternative policy measures; a review of experimental and econometric evidence; political feasibility; and challenges regarding the ways a BI could be funded and its sustainability in an increasingly globalized world. In this sense, it offers a thorough perspective on the issues involved when considering the implementation of a genuine unconditional BI policy in modern societies.

*Calsamiglia: Catalan Institution for Research and Advanced Studies (ICREA) at the Institute of Political Economy and Governance. Flamand: Serra Húnter, Universitat Rovira i Virgili and the Research Centre on Industrial and Public Economics (CREIP). We would like to thank Steven Durlauf, Ada Ferrer, Josep Pijoan, and Nandan Rao for their very helpful comments and references. Flamand gratefully acknowledges financial support from the Ministry of Economy and Competitiveness Grant number ECO2016-75410-P.

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In the first chapter of the book, the authors start by defining their notion of an unconditional BI, that is, "a regular income paid in cash to every individual member of a society, irrespective of income from other sources and with no strings attached"(Van Parijs and Vanderborght 2017, p. 4). It is paid to individuals rather than to households, in cash rather than in kind, universal rather than involving some kind of means test, and obligation free rather than carrying an obligation for its beneficiaries to work or be available on the labor market. The authors stress and carefully justify the importance of each of these characteristics in order to reach the normative standard they adopt throughout the book, namely the one of "real freedom for all." For instance, the fact that *unconditionality* avoids converting beneficiaries into permanent welfare claimants subject to intrusive and humiliating procedures, that *universality* allows a high rate of take-up to be achieved at a low information cost while creating no poverty or unemployment trap, or that *freedom from obligation* addresses the employment trap by increasing the bargaining power of the most disadvantaged segments of the population.

The authors then provide a theoretical comparison between an unconditional BI and its main alternatives, namely a universal basic endowment paid in cash at the start of adult life, a negative income tax, an earned income tax credit, a wage subsidy, guaranteed employment, and working-time reduction. Although the authors are sympathetic to most of those alternative policy options, they argue that a genuine BI remains the best instrument to achieve "a free society and a sane economy."

Chapters 3–4 of the book offer a historical perspective on the idea of an unconditional BI. The gradual implementation of the two alternative models of social protection—public assistance and social insurance—contributed to the context in which interest for a BI policy would develop, starting furtively in Europe at the end of the eighteenth century and in North America in the late 1960s and early 70s.

In chapter 5, the authors elaborate upon the ethical justifications for an unconditional BI. The strongest objection to the latter relates to its not requiring its beneficiaries to work or be willing to work. In this sense, an unconditional—and in particular, obligation-free—BI contradicts the widely accepted notion of fairness, according to which able-bodied individuals should live off of their own labor (rather than free riding on the labor of others). The authors refute this objection at great length with several arguments. In particular, they argue that an unconditional BI is what is needed if one adopts their conception of distributive justice as "real freedom for all," which generates a strong presumption in favor of an income paid in cash at the highest sustainable level to all individuals without a means or work test. Further, they discuss extensively the plausible justifications for an unconditional BI on the basis of alternative conceptions of distributive justice.

Chapter 6 reviews the BI experiments and econometric studies that have been conducted in order to predict what would happen if a BI were introduced, and discusses the critical issue of the way a BI shall be financed, including the possibility of implementing softer versions of it, such as partial or categorical BI. As the authors point out, one should be cautious when extrapolating the results obtained from BI experiments to a large-scale BI policy for several reasons, such as the limited sample size of those experiments, their typically short life span, the existence of sample selection issues, or the fact that most of the experiments have been conducted in developing countries. As for the econometric studies—which usually predict a fall in labor market participation and average number of hours worked as a

result of the introduction of a BI policy—the authors are equally cautious regarding the extent to which such results can be extrapolated. The potential ways of funding a BI that are discussed in this chapter include taxes on labor income, capital and consumption, proceeds from natural resources, or money creation.

Whether financially sustainable or not, an equally important issue regarding the likelihood of an unconditional BI ever being implemented concerns the political feasibility of such a policy. In chapter 7, the authors give a broad overview of public support and opposition for the idea of an unconditional BI as well as a reflection on the underlying causes. In particular, they review past and present positions of various collectivities, such as the general public opinion, labor unions, employers, the precariat, women, and the traditional political parties (Socialists, liberals, Greens, and Christians).

In the last chapter of the book, the authors tackle the issue of feasibility of a BI in an increasingly globalized world. The implementation of an unconditional BI in a given territorial area is likely to lead to both the immigration of net beneficiaries and the emigration of net contributors, thereby jeopardizing its sustainability in the long run. The obvious solution to the problem of selective immigration and emigration consists in implementing a BI at the highest possible level, hence at the world level. Besides, a worldwide unconditional BI would be easier to justify on ethical grounds than its national equivalent. However, as noted by the authors, such possibility is so remote that it may not be worth elaborating and speculating on it (yet). A more realistic option for the implementation of a BI at the supranational level would be the European Union. The authors elaborate on the latter possibility, although it presents far bigger challenges than the adoption of a BI policy at the national level. Alternatively, and from a more realistic perspective, the authors discuss potential ways of tackling both selective emigration and immigration within national borders.

2. *Discussion*

Discussions about the pros and cons of a BI policy seem to lack a common framework of analysis. A recent Organisation for Economic Co-operation and Development (OECD, 2017) report analyzes a BI policy scenario under the assumption that it would replace current benefits, be fully taxable, and its implementation would be budget neutral. The current BI policy in Alaska consists of the distribution of a (small) dividend among all residents on an equal basis, taxable as personal income by the federal government, and not replacing any of the remaining benefits of the welfare system. The BI income proposal in Switzerland had called for adults to be paid an unconditional monthly income, whether they work or not. The supporters' camp had suggested a monthly income of 2,500 Swiss francs for adults and 625 Swiss francs for each child, reflecting the high cost of living in Switzerland. However, the proposal was silent about what this BI was supposed to replace or how the tax system would be altered as a result (if at all).

Discussions about BI typically focus on its potential effects on labor supply, whether and how it is possible to finance it, how likely it is to reduce poverty, or its necessity in an automated world. As the examples above illustrate, the existence of a BI per se does not imply anything specific regarding those aspects when it is considered in isolation. Even though BI is a well-defined benefit instrument, its potential effects on people's behavior (and on the economy as a whole) ultimately depend on how individuals' net incomes are altered as a result of its introduction. This, in turn, depends on many factors, such as what the BI is meant to replace

(preexisting monetary benefits, but possibly also public goods, such as health care or education), whether it is taxable, whether and how taxes are adjusted, or how large its size/amount is, to name a few. The many implications—and hence desirability—of BI will fundamentally depend on how the transfer system changes. Different BI proponents have different adjustments of the transfer system in mind—that is, they hold a particular view on how other benefits and taxes shall be altered following its introduction. This is what leads to the apparent contradiction of the fact that BI is supported by both left- and right-wing politicians, which is no longer a contradiction once one specifies not only that BI shall be implemented but also how the transfer system shall be adjusted, if at all.

Following this line of reasoning, our discussion of the book's contribution to our better understanding of the desirability of implementing BI policies will be divided into three different parts. First, we argue that a common mistake when discussing the potential effects of a tax or benefit—and in particular of BI—is to abstract from the remaining taxes and benefits individuals are subject to (i.e., the transfer system as a whole). Indeed, and as we will illustrate by means of simple examples, we believe that a significant part of the arguments that are being made in favor of or against a BI may be incorrect depending on the specifics of the transfer system with which it coexists. For this reason, we stress the importance of separating the discussion of any reform of the transfer system (including the introduction of a BI policy) into a discussion of, on the one hand, the desired income distribution to be achieved, and, on the other hand, the most efficient way of achieving it through a transfer system. Arguments in favor of a BI typically relate to both the desirability/necessity of increasing the benefits to which specific categories of individuals are (or should be) entitled, and the effectiveness and efficiency properties of such a policy. We argue that separating the discussion along those two lines, while taking into account the transfer system as a whole, would help to clarify the potential impact of implementing a BI policy.

A second part discusses the evidence on the importance of the non-take-up phenomenon in current transfer systems. A significant advantage of a BI over other policy instruments within a transfer system is that it allows for addressing the latter, which has become a central problem in most welfare systems today. The book mentions this advantage, yet we believe that it is worth going into the details given the relevance of the non-take-up issue and its magnitude in most current transfer systems, irrespective of their particularities. Further, a BI policy is also likely to minimize the costs of implementing a given transfer system, provided that the entire calibration of the net transfers to be received can be left to the tax side of the system. That is, one of the main advantages of a BI policy is its simplicity, allowing for greater efficiency and effectiveness of the transfer system. Clearly, these arguments are more salient the larger the fraction of individuals who ought to receive a net benefit. Therefore, this may become one of the key aspects in deciding whether to implement BI policies, especially in a period of transition into an automated world. Indeed, a common argument used by BI proponents concerns the necessity of providing an income to the people whose jobs will be taken by machines. In the last part of the discussion, we focus on the likelihood that the fraction of benefit recipients be increased in the next decades as a result of technological progress and automation. While we agree that there will definitely be a time of transition during which more subsidies shall be needed, we also believe that if we transform our education systems accordingly, we shall be able to adapt and relocate the use of human capital in the automated economy as we have

done in the past. In fact, as unemployment has been shown to have a greater impact on happiness than income, helping individuals make this transition may be the only path for them to achieve meaningful and happy lives.

2.1 *Basic Income as Part of a Transfer System*

In modern societies, individuals are subject to various taxes and benefits, jointly generating what we shall refer to as the *transfer system*. In any such system, some individuals are net contributors, while others are net beneficiaries, depending on their circumstances. New benefits are often introduced to increase the income of a particular subgroup of the population. Changes in benefits also impact the incentives that targeted and nontargeted groups perceive, affecting the whole income distribution as well as the efficiency and effectiveness of the policy. Incentive effects arise not only from the new policy instrument, but also from its interaction with other existing taxes and benefits. Hence, incentives depend on the impact that the new benefit has on the resulting transfer system. Indeed, individual decisions regarding whether and how much to work, to have children or not, to evade taxes, or to cheat the system ultimately depend on the net burden or benefit that the system imposes on their income. Mirrlees et al. (2010) include a thorough review that identifies the characteristics of a "good" tax system for any open developed economy in the twenty-first century from an economics perspective. The authors' first recommendation is to "consider the system as a whole." They refer to the tax system, but the underlying arguments are equally valid for a transfer system (i.e., the one including taxes and benefits).

Discussions about BI generally abstract from the impact it would have on the transfer system. However, the mere fact of having a BI policy within a transfer system is rather uninformative about the properties of the resulting transfer system and the income distribution it generates. First, two different transfer systems, one including a BI and the other not, may yield the exact same final income distribution. Likewise, two different BI policies within a given transfer system may impact the equity properties of the final income distribution in very different ways. A BI policy combined with a tax system that ensures that those *not* in need are net contributors can be equivalent to a subsidy that targets a specific subset of the population. Consider the following example: take a country with no taxes whose government has 25,000 monetary units to distribute among the population. The country is populated by one hundred individuals, seventy-five of whom are working (with a minimum wage of 1,000), and the remaining twenty-five are unemployed. Transfer system one gives a subsidy of 1,000 to the twenty-five unemployed individuals and nothing to the seventy-five individuals working. Transfer system two provides an unconditional BI policy of 1,000 and introduces a tax for those who work of 1,000. Clearly, transfer systems one and two provide the same incentives and lead to the same net distribution of income. Consider now an alternative transfer system three that provides an unconditional BI of 250 (with no taxes). Note that those unemployed would rather have either of the first two transfer systems, although the third one includes a BI. Those who work prefer transfer system three. As this example illustrates, the introduction of a BI per se does not have a clear impact on the final income distribution. Thus, the desirability of a BI policy can only be assessed when considering the transfer system as a whole.

Second, the incentive effects of introducing a BI policy ultimately depend on how the resulting transfer system alters individuals' net payoffs for different actions. One major concern about implementing a BI is

its potentially negative effect on individual behavior and incentives, and in particular on labor force participation. In this context, we want to stress again that the likely incentive effects of introducing a BI can only be understood by considering the resulting transfer system. Consider another example: There are two countries. Under the current transfer system of country one, students receive a benefit of 1,500 monetary units provided that they do not have any other source of income. In country two, students are not entitled to receive any benefit. Suppose that a BI policy is introduced in both countries, giving everyone a benefit of 1,000. As a result of the new policy, students in both countries have a disposable income of 1,000. Thus, in country one, the introduction of a BI incentivizes students to work more at the expense of studying since their disposable income is reduced from 1,500 to 1,000. However, the implementation of the same BI has the exact opposite effect in country two. Hence, the introduction of the same BI policy can have opposite incentive effects depending on the coexisting transfer system.

Finally, whether (and to what extent) a BI really contributes to reducing the costs associated with a transfer system also depends on whether (and how) the latter adjusts as a result. Any transfer system involves costs borne by both the government and the taxpayers. Those costs include administrative costs but can also be of a psychological nature, such as the stigma associated with being a welfare claimant under the standard means-tested benefit schemes. One way of reducing at least one component of these costs is to minimize the number of individuals required to provide information to be entitled to a particular benefit (or liable to pay a particular tax). Arguably, an unconditional BI minimizes the costs associated with benefit provision, provided all other benefits of the system are eliminated. Indeed, under a BI policy, the number of people required to deliver specific information in order to claim the benefit drops to zero. Milton Friedman, for instance, promoted a BI arguing that it would be more efficient than the bureaucracy of running dozens of separate programs to help the poor. In contrast, if the BI is just an additional benefit overlapping with all the other preexisting benefits of the transfer system, its impact on total costs is unclear.

Ongoing discussions about BI have the tendency to mix two distinct questions, and this book is no exception. The first one relates to what the final income distribution should be, while the second concerns the best way of implementing the desired distribution. We believe that the discussion on the relevance and desirability of introducing a BI policy would benefit from elaborating upon those two issues separately. That is, the discussion should first clarify what the desired final income distribution is, and then determine what is the most efficient way of achieving it. Therefore, and consistently with the above discussion, we should think of a transfer system as an instrument through which to implement a given income distribution, taking incentives and implementation costs into account.

Broadly speaking, the arguments developed in the book in favor of the introduction of an unconditional BI take two forms, which we could label as *fairness related* and *incentives related*. Regarding fairness, a significant part of the book provides justifications for why particular subgroups of the population currently not eligible for welfare deserve to receive benefits. For instance, the authors claim that an unconditional BI would allow for providing an income to those performing necessary and productive yet unpaid work (for instance, that performed at home). We view this as a legitimate discussion, even though it should be clear that this is a discussion about the desired final income distribution in society. Again, a BI per se need not

yield the desired final income distribution, as that depends on the remaining of the transfer system. But if we rephrase the question asking about the desirability of having a final income distribution such that every individual in a society has a minimum disposable income of a certain amount, then the arguments on fairness presented in the book are extremely complete and comprehensive.

More specifically, in the fifth chapter of the book, the authors try to reconcile their BI proposal with the common reciprocity-type objection according to which enjoying a BI without performing any productive work should be considered as unfair free riding. In this context, they point out that individuals not working often perform activities that arguably deserve to be remunerated, such as engagement in the community. Likewise, they mention the countless people doing "essential work" and ending up with no income of their own, and point out (Van Parijs and Vanderborght 2017, p. 102) that "a huge amount of essential, productive work currently goes unpaid, as it is performed at home." This includes the people caring for children, the elderly, or the disabled without any form of payment. According to the authors, an obligation-free BI is the "least bad way" of reaching those individuals. Therefore, in that part of the book, the authors basically point to different categories of individuals that they consider should not be denied an income if we are to take the reciprocity-based perspective on justice. Those categories include people who are currently entitled to welfare benefits in most of our modern transfer systems (such as the disabled) as well as individuals who are not (such as the housewives). While the authors argue that a BI is the best way of reaching those individuals thanks to the properties of the type of BI they promote (i.e., unconditional, obligation free), this is ultimately a discussion about the desired final income distribution in society. That is, the mentioned categories of individuals should be guaranteed a minimum income according to this particular vision of distributive justice. However, whether BI is the best way of achieving this depends on the remaining of the transfer system. Again, BI per se need not achieve the desired goal and/or need not be the best instrument to achieve that goal.

A second set of arguments developed in the book addresses the issue of how a BI would affect the decisions made by individuals at different levels. The implementation of a BI policy may affect labor supply, human capital acquisition, fertility decisions, and childbearing time use, among others. But again, we believe that in order to correctly characterize these incentive effects, one needs to consider the transfer system as a whole. Indeed, individual decisions do not only depend on the implementation or the existence of a BI per se, but also on how the transfer system is altered as a result. If BI substitutes all preexisting welfare benefits, it may well be that incentives for studying or having children are reduced. In contrast, if it is simply added to the preexisting benefits, we should expect the impact to be substantially different. Claims regarding individual decisions can be articulated in terms of the extent to which a BI alters the distribution of net benefits within the transfer system. That is, different segments of the population will be affected to different degrees (if at all) following the implementation of a BI policy—hence, a modification of the transfer system that previously applied to them. The problem becomes even more salient when presenting empirical evidence on the matter, as such evidence does not clearly spell out the net change in the transfer system that is causing the change in the behavior of the BI recipients.

Basic Income reviews the findings of several BI experiments that have been conducted. The authors mention several reasons why one should be cautious about drawing

general conclusions from such experiments, such as the limited sample size or the finite time period during which the subjects have received the benefit. While we agree with those limitations, we believe that in order to derive meaningful conclusions from the various experiments' findings, it is at least as important to compare them to the respective status quo in the countries where the experiments were run. For instance, the book mentions the Win for Life scheme in Belgium, where the winners earn a lifelong monthly payment pitched at 1,000 euros between 1998–2007, and 2,000 euros afterwards. They argue that little can be inferred from such a scheme regarding the effects of a society-wide BI, since it concerns a very small and biased sample of the population. In our opinion, more important is the fact that here, the remaining of the transfer system is untouched, and as the lottery gains are exempted from taxation, this means that the net income of the winners increases by the same amount. This will obviously not be the case if a country-wide BI is ever introduced, and thus we should expect its effects to be significantly different. Similarly, the recent study by Jones and Marinescu (2018) shows that the BI provided by the Alaska Permanent Fund had no impact on employment, while it has increased part-time work by 17 percent. This provides evidence on the likely individual responses if a (modest) BI policy is implemented without altering the coexisting transfer system. In fact, the book does acknowledge the importance of considering the transfer system as a whole when evaluating the pros and cons of a BI, since "depending on its level, what it replaces, and how it is funded, the nature of the thing can vary hugely" (Van Parijs and Vanderborght 2017, p. 143). Indeed, the feasibility, efficiency, and desirability of implementing a BI policy crucially depends on how it alters the distribution of net benefits of a given transfer system, and hence how different segments of the population are affected.

Another important point that the authors discuss in chapter 7 of the book is the political feasibility of such policy, which requires a majority of the population to be in favor of it. Clearly, how the question is formulated and what the status quo is for the voters is key to understand their preferences regarding the introduction of a BI. For instance, if BI is presented as a substitute to all other preexisting benefits of the transfer system, the number and the identity of the voters against and in favor will clearly be different than if BI is presented as an addition to them. Hence, comparing the preferences of voters across different countries is rather uninformative about preferences over transfer systems. For instance, the authors report on a survey conducted with a representative sample of the Swiss population following the June 2016 national referendum about an unconditional BI. The proposal called for adults to be paid an unconditional monthly income whether they worked or not, and the supporter camp had suggested a monthly income of 2,500 Swiss francs per adult, reflecting the high cost of living in Switzerland. Clearly, such a proposal is extremely vague regarding the extent to which it will affect different income categories of voters, as nothing is being said about which benefits such BI would replace or how it shall be financed. This also applies to the North American survey's results from 2011, where voters were asked whether they would oppose the idea of "providing enough money for everyone to enjoy a modest living regardless of whether or not they choose to work" (Van Parijs and Vanderborght 2017, p. 172). Fully 82 percent opposed the idea, while 11 percent favored it. The authors proceed to compare those figures with the ones obtained from a French 2015 survey asking a representative sample whether they would support "the introduction of a BI guaranteed to all citizens that would replace most existing

benefits," for which 60 percent turned out to be in favor. Although the French proposal is also vague, it does specify that the BI grant would replace most existing benefits. Therefore, comparing this survey's results from the ones obtained in North America seems misleading, since in the latter case the proposal did not specify what BI is meant to replace. Furthermore, it is also clear that the respective status quo in those two particular countries are very different, which renders the comparison even more problematic. This is acknowledged by the authors, however, as they warn about the fact that survey respondents are asked to compare the BI to their status quo, which obviously varies greatly across countries.

2.2 *Basic Income as an Optimal Instrument within a Transfer System*

We have argued that a BI per se need not produce the desired final income distribution in society, as such distribution depends on the coexisting transfers and the incentives they generate. However, even though two different transfer systems (one including a BI and the other not) may be theoretically equivalent regarding the incentives they provide, in practice there may be other factors affecting the take-up rate of the two systems differently. As a result, the observed final distribution of income under the two systems will be different.

Non-take-up of social benefits is the phenomenon whereby persons or households do not receive the social benefits to which they are entitled (for whatever reason) (van Oorschot 1998). Warin (2010) distinguishes between three broad types of reasons for non-take-up: *nonknowledge*, when an eligible person does not file a claim because she lacks knowledge about the program's existence and/or mode of claiming; *nonclaiming*, when an eligible and informed person does not file a claim because of costs, which can be of different natures, such as lack of interest, high travel time for claiming, or stigma; *nonreception*, when an eligible person has claimed a benefit but does not receive it due to withdrawal or rejection by the government.

We believe that one major argument in favor of a BI—and perhaps not emphasized enough in the book—relates to the low take-up rate that is observed under current transfer systems among individuals or households entitled to a particular benefit. Furthermore, it is likely that non-take-up concerns the most vulnerable segments of the population, that is, the ones needing the benefit the most. Given the relevance of the non-take-up phenomenon, we believe it is worth reviewing some evidence regarding its magnitude in modern transfer systems.

Targeted schemes are generally designed so as to help a specific category of individuals with specific needs. However, as pointed out by a recent report of the European Commission on the non-take-up of minimum income schemes by the homeless population, research reveals that such targeted schemes tend to generate more stigmatization than universal schemes do. The shift to more targeted or means-tested benefit systems and/or the introduction of a "required behavior" increases the risk of creating a "distance" from or "rupture" with potential beneficiaries (Boccadoro 2014). Lengthy administrative procedures to obtain benefits serve the purpose of limiting fraud. However, they also have the effect of encouraging non-take-up by the most fragile subgroups of the population, as they create a climate of suspicion and generally involve restrictions in the criteria to be met and extra documents to be presented. Fraud and non-take-up both limit the effectiveness of social policies by generating unequal treatment of individuals who ought to be treated equally. In general, the design of social policies is such that it is the responsibility of the potential beneficiaries to find the relevant information about their rights and to apply for them. That is,

the government is passive and the citizens must be active. Clearly, an unconditional BI has the advantage of avoiding fraud and non-take-up altogether.

In developed countries, large sums of money are forgone each year by eligible individuals and households due to non-take-up. Evidence about the level of take-up of welfare benefits is very limited in most OECD countries, as the figures are scarce and not really comparable. The vast majority of data sets are based on self-reported information subject to different accuracy problems (Hernanz, Malherbet, and Pellizzari 2004). Take-up rates can be calculated on a per capita basis, dividing the number of eligible nonrecipients by the total number of eligible people, or on an expenditure basis. In their comparative study of OECD countries, Hernanz, Malherbet, and Pellizzari (2004) report non-take-up rates that vary between 20–60 percent for means-tested social assistance benefits, between 20–40 percent for unemployment benefits, and around 20 percent for housing benefits.[1] In a more recent study, Matsaganis, Paulus, and Sutherland (2008) compared evidence on benefit take-up rates within different European countries, including from southern Europe. They find that the take-up for the programs assessed in nearly all the countries oscillate between 33 percent and 88 percent. Furthermore, they find that the negative impact of non-take-up is more pronounced toward the bottom of the income distribution. Fuchs (2009), using detailed European microdata and tax/benefit microsimulation models, compares take-up of social assistance in Austria, Germany, and Finland for the years 2002–03 and finds that in all three countries, at least half of the households eligible for social assistance did not claim. In the United Kingdom, official estimates of non-take-up of social benefits are released on an annual basis. According to the last figures available, the non-take-up rate of income-related benefits range from 20–50 percent for 2014–15, the highest non-take-up rate being for the Jobseeker's Allowance (UK Department for Work and Pensions 2017). For the United States, Finn and Goodship (2014) report that estimates based on administrative data and microsimulation models show that in an average month in 2009, only 32.3 percent of families eligible for Temporary Assistance for Needy Families (TANF), 64.6 percent of households eligible for Supplemental Security Income (SSI), and 72 percent of adults eligible for the Supplemental Nutrition Assistance Program (SNAP) have enrolled and received benefits. (Those are the three most substantial means-tested cash and nutritional assistance programs.) They conclude that the evidence available from OECD countries indicates that non-take-up of minimum income means-tested benefits is a common problem, even in countries with comparatively generous welfare benefit levels, such as the Nordic countries. Furthermore, Currie (2004) points to the fact that low take-up is also a problem in many non-means-tested social insurance programs.

The review by Hernanz, Malherbet, and Pellizzari (2004) has underlined four classes of factors explaining (non-)take-up: pecuniary determinants (benefit level and duration); information costs (awareness of the program and costs of acquiring more information on eligibility and application); administrative costs (length and complexity of the claiming process); and social and psychological costs (attitudes toward state help, stigma). They have emphasized the importance of pecuniary determinants and transaction costs, particularly the program benefits' level and duration, for explaining take-up (see

[1] They considered studies from the early 1970s, though most were undertaken in the 1990s. Many of the studies concerned benefit take-up in the United Kingdom and United States, with a small number of studies concerning France, Germany, the Netherlands, Denmark, and Canada.

also Currie 2004). Daigneault, Jacob, and Tereraho (2012) reviewed and synthesized various types of evidence (scientific studies, evaluation reports, review studies, and interviews) to assess the support found in the literature for various factors affecting take-up. They find that the first and most important factor is the knowledge that a claimant has of a given program (knowledge of the existence of a program and of its eligibility rules and claiming procedures). The more knowledge an eligible individual has of the program, the more likely he or she is to file a claim. The second most important factor refers to the ease/difficulty of the claiming process. When it is easy to apply for a program, in terms of understanding its rules and having access to the relevant application information, take-up is more likely.

We believe that the relevance and magnitude of the non-take-up phenomenon constitutes a strong justification for the implementation of universal and unconditional BI policies in modern economies. Its simplicity contrasts with the overwhelming complexity of most modern transfer systems, which tend to generate significant costs in terms of both efficiency and fairness.

As we already mentioned in the previous section, a BI policy is likely to minimize the costs associated with benefit provision within a given transfer system, provided it replaces all other preexisting benefits. In that case, the tax system shall be responsible for implementing the desired net transfers through collecting the relevant information for taxes to be fairly and efficiently determined. Further, one would also like to maximize the efficiency of the transfer system in the sense that its benefits actually reach the individuals they target. Arguably, a BI policy would also minimize the costs stemming from non-take-up (and fraud) by potential beneficiaries. In this sense, a BI may well constitute part of what could be considered an optimal transfer system.

2.3 *On Basic Income and Automation*

One major concern in developed economies is the extent to which advances in artificial intelligence, deep learning, and robotics threaten a significant and growing part of the jobs currently performed by the labor force. As machines match or even outpace human performance in a range of work activities, including the ones requiring cognitive capabilities, automation is expected to lead to profound changes in the economy and the workforce. A report by Ball State University attributes almost 88 percent of recent job losses in manufacturing in the United States to automation (Hicks and Devaraj 2015). According to a recent report by McKinsey, activities most susceptible to automation involve physical activities in highly structured and predictable environments, as well as the collection and processing of data (Manyika et al. 2017). In the United States, these activities make up 51 percent of activities in the economy, and are most prevalent in manufacturing, accommodation and food service, and retail trade. Their scenarios predict that half of today's work activities could be automated by 2055, and this could happen up to twenty years earlier or later depending on various technical, economic, and social factors. Likewise, the *UK Economic Outlook* of March 2017 (Berriman 2017) predicts that up to 30 percent of UK jobs could potentially be at high risk of automation by the early 2030s, lower than the United States (38 percent) or Germany (35 percent), but higher than Japan (21 percent). According to their analysis, the risks appear highest in sectors such as transportation and storage, manufacturing, and wholesale and retail, and lower in sectors like health and social work. Frey and Osborne (2017) estimate the probability of computerization for 702 detailed occupations and find that some jobs—telemarketers, tax preparers, and sports referees—are at more

risk than others, including recreational psychologists, dentists, and physicians.

In this context, several voices have appeared to claim that an unconditional BI could be at least part of the solution to the enormous challenge that automation represents. That is, given that a significant proportion of the labor force will find itself unemployed as a result of automation, BI constitutes a way to ensure that those individuals will benefit from a safety net allowing them to maintain a decent standard of living. The idea here is that automation will lead to an increase in the number of people whom the state shall protect by providing them with an income. Whether a BI is the right policy instrument to achieve this goal depends, we believe, on the nature of the argument. As we have argued before, if the objective is to minimize the costs of providing a benefit to those individuals left behind by automation, then a BI policy may be part of an optimal transfer system (whose calibration would then be made solely from the tax side). In that case, a BI policy essentially constitutes a simplifying tool. Alternatively, if the argument is that the total size of transfers will need to be increased as a result of automation and the massive technological unemployment that, supposedly, will follow, then a BI policy is one among many alternative instruments that might serve this purpose (i.e., yield the transfer system—hence the final income distribution—that is deemed optimal). That is, the question here is not so much whether we need a BI to compensate for the potential harmful consequences of automation, but rather whether we consider that a public benefit is desirable and justified for those workers who want to make the transition and be employable in the new economy, and those who, for whatever reason, cannot make this transition.

In this context, it is worth emphasizing that if happiness is our objective, simply providing a benefit to those left behind by automation may not constitute a solution. Accepting that some individuals will/can just not be useful in tomorrow's world shall lead to increased frustration and unhappiness, even if those individuals are secured a decent income by means of a BI policy. Indeed, the fact of being unemployed has been shown to be one of the main explanations for differences in happiness, and in particular, more so than income. As shown by Clark and Oswald (1994), Frey and Stutzer (1999), or Frijters, Haisken-Denew, and Shields (2004), working is not only about receiving money but also about leading a fulfilling and meaningful life, which explains why unemployment is more important than income in explaining subjective happiness survey answers. Consistently with those findings, and as shown in Oswald (1997), unemployment also contributes to suicide rates. Hence, if we aim at individuals achieving fulfilling lives, besides merely providing individuals with a (basic) income, we need to make sure that such income is facilitating their transition into employment in the future.

Yet, whether technological progress and automation will indeed lead to an increase in the number of needy individuals remains itself an open question that is currently being investigated and intensely debated. Previous technological revolutions have created new opportunities and new kinds of jobs, not foreseen at the time. Individuals have moved from the agricultural to the industrial sector and later from the industrial to the service sector. Recent evidence shows that technological change is leading to a polarization in the labor market: middle-paying jobs are disappearing, while high- and low-paid jobs are increasing. Goos, Manning, and Salomons (2014) report the employment shares of occupations and their percentage point changes between 1993–2010 after pooling employment for each occupation across sixteen European countries. They show that the highest-paying managerial, professional,

and associate professional occupations experienced the fastest increases in their employment shares. On the other hand, the employment shares of occupations that pay around the median occupational wage have declined. According to the authors, the phenomenon of job polarization is pervasive across advanced economies and driven by job polarization both within and between industries. A similar trend can be observed in the US economy, where job growth is increasingly concentrated at the tails of occupational skill distribution, in both high-education, high-wage occupations and low-education, low-wage occupations. Cumulatively, these two trends have substantially reduced the share of employment accounted for by middle-skill jobs (Autor 2010). Using US data from 1960–98, Autor, Levy, and Murnane (2003) find that within industries, occupations, and education groups, computerization is associated with reduced labor input of routine manual and cognitive tasks and increased labor input of nonroutine cognitive tasks.

At the beginning of the nineteenth century, industrialization led to the need for mass education, that is, free access to education for all children. At first, the Industrial Revolution provided agricultural techniques that freed workers from the field, which led to a large increase in the population living in cities and working in factories. These movements led to a reduction in wages and the worsening of living conditions for many. Thus, the Industrial Revolution exacerbated the problems of a society "divided into those with land or capital or profession and those with no wealth, no possessions and no privileges" (Benn and Chitty 1996, p. 2). Acknowledgment of those changes and the democratization of these societies were the driving forces leading to the agreement about the need to provide education for all. However, such mass education system was designed to respond to the challenges posed by industrialization, and many of the skills it promotes are no longer relevant in today's world. To succeed in adapting to the ongoing technological revolution, we need to make sure that individuals in our societies can do what artificial intelligence and robots cannot, and for this, we need a new approach to education in a broad sense. We need to enhance our capacity to adapt, learn throughout life, and contribute in what machines cannot: adapting to change, inventing and creating, working in teams, and communicating or empathizing, among others. In the words of Autor (2015, p. 27), "the issue is not that middle-class workers are doomed by automation and technology, but instead that human capital investment must be at the heart of any long-term strategy for producing skills that are complemented by rather than substituted for by technological change."

In 2015, the United Nations Educational, Scientific, and Cultural Organization (UNESCO) report *Rethinking Educatio*n and the OECD report *Innovative Learning Environments: Implementation and Change* advised countries to rethink the goals of our education systems. The world is changing and education must change accordingly. We need to encourage the development of those skills for which machines cannot substitute. Memorizing and replicating facts is becoming more irrelevant then it ever was before. Children need to be taught to continuously learn about a changing world that shall pose many new challenges that human beings will be called to solve and that future generations must be ready to deal with. Similarly, education should be viewed as a lifelong process that should facilitate adapting our skills as the world changes continuously throughout our lives.

A common theme in the discussion on education policies in recent years is the importance of incorporating the development of noncognitive skills as a fundamental pillar. Noncognitive skills refer to a set

of attitudes and behaviors that underpin success later in life, such as perseverance, critical thinking, capacity to adapt to changing environments, among others—see, for example, Heckman, Stixrud, and Urzua (2006) or Gutman and Schoon (2013) for a literature review. García (2015) reports large gaps in noncognitive skills among children coming from the top and bottom quintiles of the socioeconomic distribution, such as their levels of self-control, their approaches to learning, how they socially interact, their capacity to focus, or their eagerness to learn and ability to cope with frustration, to name a few. Standardized tests such as the Progam for International Student Assessment (PISA) are used to inform policy on education. However, if we want education agents to target noncognitive skills, the new challenge consists of providing ways for schools to appropriately measure them. For the first time, PISA 2015 incorporates the measurement of a noncognitive trait, namely the capacity to work in teams. The challenge is thus to clearly define and measure these new objectives of the education system, and to define the best way of achieving them. Disposing of reliable measures for the specific abilities to be strengthened seems crucial, as otherwise classical standardized tests will prevent this change from occurring in the education system at large.

3. *Conclusion*

BI supporters have a tendency to mix two different kinds of arguments that we believe are worth considering separately. First, in today's and future economies the fraction of individuals receiving benefits and the size of those benefits shall be increased so that the resulting income distribution in society approaches the one that is considered desirable. Second, if the desired income distribution is such that the transfer system requires a large fraction of the population to receive benefits, it may be optimal to rely on a BI policy for the provision of those benefits, while calibrating the net transfers through the tax system. Importantly, a universal and unconditional BI also addresses the issue of non-take-up, which is currently of great concern in most modern welfare systems. Finally, we argue that providing a minimum income to the growing number of individuals who—according to some claims—will be left behind by automation shall not constitute the unique solution to the problem. Rather, we need to rethink education and ensure that investments in human capital are well suited for the modern economy.

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