Université catholique de Louvain
Faculté des Sciences Économiques, Sociales, Politiques et de Communication
Département des Sciences Économiques
Institut de Recherches Économiques et Sociales

Economic and Ethical Considerations about the Access to an Income

Juliana Mesén Vargas

Thèse présentée en vue de l'obtention du grade de docteur en sciences économiques et de gestion

Composition du Jury :

Prof. Bruno Van der Linden (Promoteur), UCLouvain

Prof. Yannick Vanderborght (Promoteur), U Saint-Louis & UCLouvain

Prof. Simon Birnbaum, Södertörn University

PhD. Marion Collewet, Vrije Universiteit of Amsterdam

Prof. Muriel Dejemeppe (Présidente), UCLouvain

Louvain-la-Neuve, Belgique, Janvier 2020

a Adolfo, por todo, para siempre.

Acknowledgments

This thesis is the outcome of several years of work in which I have benefited from many outstanding circumstances, among which, a welcoming country that became my second home. The person I am today is very different from the one I was 6.5 years ago when I first arrived to Belgium and I am most grateful for all what life has bring to me during these years. My journey benefited a lot from meeting many stimulating persons who, in one way or another, accompanied me throughout the way. I would like in the next lines to acknowledge them for their presence and support.

First of all, I want to thank Bruno. I still remember the dark morning of November, more than 4 years ago, when I asked if he could supervise my thesis. I was so scared, so insecure... and he was so calmed and kind, that I immediately felt better. Doing a PhD is an adventure with ups and downs, sometimes it was tough, I must confess... but I always felt secure having Bruno around. Thanks Bruno, for the dozens of hours we spent working together in our paper, for all your time, your kindness, for supporting me. Most of all, thanks for giving me the circumstances that allowed me to challenge myself, but to have trust, and to enjoy the most these years.

Since the beginning, I knew that I wanted one of the three papers of my thesis to be related to ethics. That is how Yannick became my co-supervisor! I did not know Yannick at all, but Philippe Van Parijs suggested me to work with him and since the first meeting, we got along very easily. Working with Yannick was great and smooth... we had many long talks in which we exchanged ideas and impressions. I was always motivated and enthusiastic after our conversations. Thanks, Yannick, for your encouragement,

your trust, your advice and support, and for guiding me into the jungle of a totally new research area for me.

I am very grateful with Muriel as well. Her help and support for Chapter 2 were substantial. Her comments were always very accurate and clear, and Chapter 2 benefited a lot from her advice. Thanks Muriel, for your time and kindness, for your careful reading and for your insightful comments. I only regret I never had the chance to be your student since I am sure you must be an excellent teacher as well :).

Marion spent a year in CORE, where I had the chance to meet her. We had two long and detailed meetings, one at the beginning of my work in Chapter 2 and another one towards the end. Her comments were very useful, she gave me concrete suggestions that were most helpful, and I profited a lot from having the occasion to discuss my work in detail with her. Thanks Marion, for your suggestions, for your time and availability, for the several email exchanges and for the serious interest you put in my work.

The last member of my Jury is Simon Birnbaum, whom I met personally only the day of the private defense. However, I knew his work since before; his book and articles were very inspiring and useful for my work in Chapter 3. I am very happy to have had the chance to have him in my Jury, and very grateful with him for having come all the way from Sweden to my private defense. His detailed and insightful comments for Chapter 3 were much appreciated, and I believe that were very useful to improve the piece.

I am also very grateful to all the professors of IRES, Chaire Hoover and CORE who were around all these years and who contributed, in one way or another, to my work as researcher or as teacher assistant. Special thanks go to Philippe Van Parijs, whose kindness and availability are deeply acknowledged. I had the chance to read one of his books, Qu'est-ce qu'une société juste ?, while being still a master student... this book deeply touched me and impacted my research interests. During all these years, I had the opportunity to talk with him several times, but I will always remember our stimulating and inspiring long meeting, a few months ago, during a grey afternoon in a café in Brussels. Thanks!

I am particularly grateful to all my professors of the research master, who strongly contributed to my formation and my motivation to do a PhD,

thanks especially to Bruno (again!), Luca, Fabio, Rigas, Julio, Eve Ramaekers and Sebastien Van Bellegem. And to Jean and Francois who, on top of being my teachers, were the supervisor and reader (respectively) of my master thesis and who sowed and watered the first seeds of my interest in research. I also had the good luck of being teacher assistant of Francois during all these 4.5 years, I learned a good deal from him, and I am very grateful for his trust, support and useful advices. Special thanks go also to Tanguy, Julio, Pierre, Marthe and Philippe van Kerm, with whom I also worked as teacher assistant in different moments throughout all these years.

I am especially grateful to Isabelle Cassiers and Michel De Vroey with whom I had the chance to talk in several occasions in different contexts, and who supported and encouraged me since the beginning and through all the years I spent in Belgium.

I am also very grateful to Marie, Anne, Severine, Claudine, Virginie, Therese, Isabelle and all the administrative staff for all their outstanding help and support.

All the way would have been much more difficult if I didn't have the chance of being surrounded by an extremely warm bunch of friends. I am especially thankful to those who became the closest ones and with whom I spent many unforgettable moments: Riccardo, Francois and Elisabetta < 3. Thanks guys for all what we lived together, thanks for always making me feel home, be it in IRES, Brussels, France, Italy or wherever. I will miss you so much!

Also to those who were about to finish their PhD when I started mine, and who encouraged me a lot when I needed it the most: Benoit, Vanessa, Michal, Andras and Guzmán.

To many friends who accompanied me through most of the journey during all these years: Sabina, Eric, Zainab, Louis (and Anne Marie), Charlotte, Fabio (and Marie), Adam, Annalisa (and Niccolo), Elisa, Daniele, Erika, Guille, Dalal, Hendrik (and Claire), Yannick, Leo, Alex, Arnaud, Sebastien, Huan, Boris, Keiti, Douglas, Francesco, Ehui, Christoph, Gautier, Mathieu and several more.

And to those who join the team in the last two years but who provided a lot of light and color to my days in IRES as well: Francoise, Arno, Esmeralda,

Nathan, Giulio, Pauline, Fabrizio, Coralie, Charles de Pierpont, Charles de Beauffort, Stefanjia, Elsa, Esther, Tiziano, Hasnae, Mathilde, Marcus, Luigi, and others.

Finally, I am also very grateful to my master friends with whom I shared so much (including tears, dinners, weddings, and uncountable many deep moments) and who remained around during all these years of my PhD: Riccardo (again!), Alex (and Emannuelle), Francesca, Marie, Luca C, Luca B, and David.

There has also been a team of people from the other side of the Atlantic who supported and accompanied me through all these years. I am most grateful, of course, to my family: Gracias mamá, papá, Mari, Pablo, Tita y Marieta por estar siempre allí y por darme tanto. Gracias, sobre todo a vos, mamá, por creer siempre en mí, por estimular mi curiosidad y mi meticulosidad, por enseñarme a mirar más lejos y más alto, por motivarme y acompañarme siempre... has estado siempre conmigo en cada paso.

I am also extremely grateful to Natalia, my Costa Rican friend who accompanied me here in Belgium most of the time: thanks Natalia for making me feel home, and for being there, so deeply, always < 3. To Flor, for the nice conversations and the (Costa Rican) coffees we shared, and to several friends who remained present throughout, specially Raquel and Daniel. To Carla, who always welcomed me so kindly whenever I went home: thanks for your deep and open mind and heart, which stimulates me and encourages me to undertake new adventures, like vegan-cooking ones :). Thanks to Franco, as well, for all the warm emails we exchanged throughout these years. Finalmente, gracias Coral, por acompañarme tanto y tan dulcemente durante estos últimos meses de mi aventura belga.

I want to finish by thanking the most important person in my life, the one who accompanied me during every single second of this journey. Adolfo, all this was possible because you made me believe it was! This adventure changed my life in uncountable ways, and you always knew it would. Ahora, sabemos los dos lo que significan las Ítacas... and it is time to start new adventures together. Because of your presence, your encouragement, your support and your infinite love, this thesis is dedicated to you.

Contents

List of Figures

List of Tables

General Introduction

I started this thesis more than four years ago, just after finishing a research master in economics. The master provided me with several technical tools, and I felt that doing a PhD was a great occasion to put them into practice and, by doing so, to deepen my understanding of economic phenomena.

I knew, since the beginning, that I wanted to go back to Costa Rica after the PhD, therefore for me it was important to work on a topic somehow linked to the pressing issues that we have back home. However, four years ago I was not so sure about which precise path to follow... the first chapter of my thesis opened the way for the rest. Thus, in a sense, this entire thesis stems from a common interest that Bruno (my co-supervisor and coauthor of the first chapter) and I share on unemployment and on the implications that cash transfers have for people living in poverty.

According to the standard job search model, providing cash to the unemployed increases their expected duration in unemployment. This is the case regardless of whether (1) the cash transfer takes the form of an unemployment benefit, and therefore is conditional on the fact of being unemployed, or (2) can be kept when the agent finds a job, and therefore is, in this sense, unconditional.

Yet, the stylized nature of the job search theory leaves aside a number of day-to-day problems encountered during joblessness. The first chapter of my thesis incorporates an intuitive extension into an otherwise standard job-search model. We take seriously into account the fact that people have subsistence constraints, thus we model this feature, and study the consequences that it has on the predictions of the job search model.

Notably, if people have subsistence constraints and the institutional assistance is not sufficiently high, then they must carry on some sort of "subsistence activities" to make ends meet. Yet, as put forward by Shah et al. (2012), Mullainathan and Shafir (2013), Mani et al. (2013), Shah et al. (2015), and Schilbach et al. (2016), cognitive capacity is limited. Therefore, performing these "subsistence activities" limits the cognitive resources available for job search, and thus has a negative impact on the probability of exiting unemployment.

In this more general setting, we find analytically that cash transfers to jobless workers can increase their chances of finding a job. An in-depth numerical analysis indicates that this property generally holds for low transfers. Thus, this first chapter of my thesis suggests that when people live in poverty (be it in developed or developing countries) receiving cash transfers is not detrimental to their labor outcomes, and could even be beneficial.

While working in the literature review of the first chapter, I was surprised to discover that there are not many articles evaluating the effects of unconditional cash transfers on labor outcomes for people living in poverty.

Many programs offer assistance to people living in poverty in the developing world; however, they typically impose some conditions on the recipients. In fact, most of them were inspired by PROGRESA, a groundbreaking program put in practice in Mexico in the 90's that provides cash to poor families conditional on kids in school age going to school (Fiszbein and Schady, 2009). Many of them have been rigorously evaluated, and it has been found that they do not have a negative effect on labor outcomes. Actually, several of them have been found to have a positive effect (Banerjee et al., 2017). Yet, I realized that it could be argued (and it has been argued, see for instance Parker and Todd, 2017 and Rubio-Codina, 2010) that the conditionality of the programs plays an important role in explaining the lack of negative effects. The conditionality of these transfers could induce a "cross substitution effect" on adults. That is, it could induce adults to work more to substitute for child's work.[1] But, then, does this mean that if transfers were unconditional we would no longer find that these programs are not detrimental to work?

[1] That is, adults might perform work that previously was carried on by kids who, induced by the program, now attend school instead of working.

I have a close friend, Saylin, a 8 years old girl who lives in a household composed by her mother, and her three siblings. They are beneficiaries of AVANCEMOS (a program exactly like PROGRESA but in Costa Rica). From my contact with this family, I know that the conditionality plays an important role (for deciding how to spend money inside the household, for example) but not for the labor supply decisions of the mother. Even if AVANCEMOS relieves their stress in important matters, provides strong incentives for maintaining kids in school and allows all of them to eat better, to dress better, to enjoy better health, etc... it would hardly change the labor supply decisions of the adults, I thought. This only case is, of course, not enough to draw any conclusions. Yet, it inspired it me for the second chapter of my thesis.

I got to know that the very high quality data of PROGRESA was publicly available online, thus I started working with it. Looking at the data, I realized that before the start of PROGRESA attendance to primary school was essentially universal; thus, school attendance was not a binding condition for these kids. Meaning that the conditionality could not change their behavior, neither the one of their parents.

Thus, in the second chapter of my thesis, I focus on adults living in households without kids in secondary school, for whom, for the reasons just explained, PROGRESA is essentially, an unconditional transfer. And I evaluate the impact that PROGRESA had on the labor outcomes of adults living in these households. I find that they did not work less. If anything, men increased their participation in paid employment.

Of course, the analysis of the second chapter was performed on a particular subsample, having particular characteristics. In general, my subsample (the one composed by adults living in households without kids in secondary school) is in many ways different from the total sample of PROGRESA.[2] However, the effects that PROGRESA had on the labor outcomes of my subsample are very similar to the ones it had on the total sample. This suggests that the conditionality of the program (which was a binding constraint for adults in households with kids in secondary school) did not induce important differences on these indicators.

[2] Its members are younger, more educated, live in smaller households, have fewer kids below 6 years old, more often live together as a couple and are marginally less poor than those in the whole sample of PROGRESA.

It is worth highlighting that despite the evident closeness of the first two chapters, they look at different things. The first chapter, builds on the standard job search model, and thus looks at the effects of conditional and unconditional cash transfers on the duration in unemployment. The second chapter, instead, looks at the effects of unconditional cash transfers on labor supply decisions and on the number of hours worked (given that PROGRESA does not have any data about job search). Moreover, in the first chapter we build a model based on the fact that cognitive capacity is limited, and explain our findings *through this mechanism*. In the second chapter, given data limitations, it was not possible to establish any link between the effects of cash transfers on labor outcomes and cognitive capacity. The second chapter just points out at the fact that cash transfers do not have negative effects on labor outcomes as the neoclassical model of labor supply would predict, and briefly discusses, based on existing literature, some mechanisms that could explain why this is the case (among those mechanisms, of course, the one put forward by the first chapter).

During the time I spent working on the first two chapters of my thesis, I often had the feeling that many things that I wanted to know were left outside the analysis. In fact, these two chapters are entirely focused on analyzing the effects of public policies on individual incentives. This is of course, very important. But, at least as important as tackling these issues, it seems to me, is to take a step back and to reflect upon the requirements of justice.

Saylin's mother stopped studying before finishing primary school because she lived in a situation of extreme poverty and had to start working. Today, for her it is extremely hard to find a job, and even harder to find a job which pays her a reasonable amount of money. Her lack of studies and her extreme need put her in a situation of vulnerability towards employers and certainly limits her opportunities to lead the life that she would like to live.

Is this *her* problem? She is absolutely willing to work, but she cannot find a job! Shouldn't we, as a society, make whatever is in our power to allow her to have access to a reasonable income? And by this I not only mean to put in practice public policies promoting employment, but something more radical, like *guaranteeing* a job to her? Which are our duties, as society, towards her? Which are her responsibilities towards society? What (if anything) entitles her, and citizens in general, to have access to an income?

Of course, I could intuitively provide an answer to these questions, but my economic background did not allow me to reflect systematically on them. In the ten years that I have been studying economics I followed courses about poverty, inequality measurement, public economics, labor economics, social choice and welfare, norms and public intervention, about unemployment and employment policies, etc... but I had never read anyone who reflected on these questions from an ethical perspective. I have never read Rawls, for instance, *the* great political philosopher of the twentieth century and I did not have access to any discussion or reading about what makes a society a *just* society. I felt that being aware of the debates of political philosophers regarding these issues was crucial for me to fruitfully interact with other social scientists and to develop the broader mind that public policy requires.

That is how I knew, since the beginning, that I wanted to spend some time during my PhD at developing some ethical culture. Personally, I consider this essential for the path that I want to follow through my professional life. Thus, I was eager to study, through the third chapter of my thesis, the ethical views of three leading liberal egalitarian political philosophers concerning these issues. I focus my analysis on John Rawls, Amartya Sen and Philippe Van Parijs. The three of them share a very similar conception of justice, however their views differ in interesting ways that lead them to have different practical conclusions.

The third chapter of this thesis presents a succinct but deep synthesis of their ethical views regarding citizens' access to an income. Towards the end, I also provide my own views pointing at what I perceive as limitations or difficulties of their approaches. This chapter intends to be self-contained, and should fit well to economists who, like me, want to be aware of the debates of political philosophy regarding these crucial matters.[3]

[3] A small clarification is in order. In the second chapter I use the word "unconditional" to refer to transfers for which the school attendance conditionality does not bind. However, this transfer is only provided to people living in poverty (even if people classified as eligible were certain to receive the transfers for at least 9 years). Instead, in the third chapter, when I talk about and unconditional basic income (UBI), I refer to something very different. An UBI is by definition paid by the government to each full member of society irrespective of being rich or poor.

Chapter 1

Why cash transfer programs can both stimulate and slow down job finding[1]

Abstract This chapter analyzes the behavioral effects of cash transfer programs when jobless people need to have access to a minimum consumption level. Our model reconciles recent evidence about negligible or favorable effects of cash transfers on job finding rates and the more standard view of negative effects. When unemployment compensation, if any, is low enough we argue that cash transfer programs can raise the hiring probability. Our framework is flexible enough to generate the standard conclusion as well. Looking specifically at unemployment compensation, its optimal level is generally higher than when a lower bound on consumption is ignored.

[1]This chapter is coauthored with Bruno Van der Linden, and is published in IZA Journal of Labor Economics (vol.8, n.1, 2019). We thank the editor (Pierre Cahuc) and two anonymous referees for their very helpful comments. We also thank Robin Boadway, Johannes Johnen, Andrey Launov, Alan Manning, François Maniquet, Rigas Oikonomou, Johannes Schmieder, Robert Shimer and Klaus Wälde for useful conversations, and the participants to the Search and Matching Workshop 2017 in Kent University, to the CESifo Area Conference 2018 "Employment and Social Protection" and to the EALE Conference 2018 for their comments. The usual disclaimer applies.

1.1 Introduction

Not much is known about the effects of cash transfers on joblessness duration in environments with little outside institutional assistance (see Section 2). In such environments dealing with subsistence is plausibly a pressing and urgent issue. This chapter puts forward an intuitive extension of the standard job-search model that takes seriously into account the presence and consequences of subsistence constraints. In this more general setting, we show analytically that cash transfers to jobless individuals *can* increase their chances of finding a job. An in-depth numerical analysis indicates that this property generally holds for low enough transfers. For higher levels we retrieve the standard property that increasing generosity reduces hiring rates. Throughout the chapter, we distinguish two types of cash transfer programs. The first one provides cash to eligible jobless people who continue receiving the transfer when they find a job (like in Franklin, 2018, Barrientos and Villa, 2015, Banerjee et al., 2017). The second type of transfer is conditional on joblessness and is an unemployment compensation scheme. In the latter case, we also look theoretically and numerically at the optimal level of the transfer. Compared to a framework where a minimum consumption requirement is ignored, the optimal replacement rate is generally higher.

The income of jobless people is not protected in a large number of countries (Vodopivec, 2013, Bosch and Esteban-Pretel, 2015) and, where it is, the coverage and the level of benefits are sometimes low. According to the World Social Security Report (International Labour Office, 2010, p.60), 80% of high income countries had a statutory program of unemployment protection, but only 39% of all the unemployed were covered. Coverage rates for other countries are substantially smaller. This raises the question of the subsistence of jobless people.

When public income protection against joblessness is low or absent, the unemployment risk is not covered by private insurers[2] and credit markets are imperfect or absent, part of jobless people struggle to make ends meet. They do this for example by looking for discounts in the supermarkets, fixing old clothes, selling home-made food, engaging in subsistence farming or begging in the streets. These "*subsistence activities*" introduce a margin of self-insurance against joblessness. However, they also require some

[2]For reasons provided by for instance Easley et al. (1985) and Hendren (2017).

effort that in a way or another is detrimental to the chances of finding a job. A first mechanism consists in seeing the latter effort and job-search effort as substitutable amounts of time. This interpretation can be seen as a particular case of our general framework. However, it is not the one we put forward, since the available evidence on the time spent on job search suggests that time is not the scarce resource for the population of interest (Krueger and Muller, 2010, Manning, 2011, p.986 , Aguiar et al., 2013). We are instead inclined to prefer the following alternative mechanism.

According to Shah et al. (2012) , Mullainathan and Shafir (2013), Mani et al. (2013), Shah et al. (2015), and Schilbach et al. (2016), who develop a number of experiments both in the United States and in developing countries, the cognitive capacity or "bandwidth" of agents is limited. "Bandwidth measures our computational capacity, our ability to pay attention, to make good decisions, to stick with our plans, and to resist temptations" (Mullainathan and Shafir, 2013, p.41). Finding a job as well as dealing with subsistence are processes that are absorbing cognitive resources. Performing the above-mentioned *subsistence activities* makes heavy demands on the cognitive capacity of the agent and automatically leaves less cognitive resources available for job search. Therefore, the effort devoted to *subsistence activities* has a negative impact on the probability of exiting unemployment. This is an intuitive, yet neglected, consideration, whose consequences are at the heart of our analysis.

The rest of the chapter is organized as follows: We start with a literature review. Section 1.3 presents two standard properties in the job-search literature. We introduce our baseline model and develop analytical results. Several extensions are also considered. In Section 1.4 we solve the baseline model and its extensions numerically. Section 5 concludes.

1.2 Literature Review

This section starts by summing up the empirical evidence that is related to our work. First, the effect of cash transfers (that can be kept when the agent finds a job) on labor outcomes seems to depend on the availability and generosity of other forms of institutional assistance, like unemployment benefits (UB), and more broadly to the amount of wealth people have. Second, even though it is standardly found that higher UB have negative effects on

job search, not much is known in setups in which the level of UB is low. We discuss the few papers we found that look at the effects of UB for low income populations. Next, this section turns to the theoretical literature. First, we look at some extensions of the basic job-search framework which are somehow linked to our approach. Finally, we mention some papers that look at the optimal design of unemployment insurance when agents have access to informal jobs.

According to Chetty (2008) for the US, Card et al. (2007) for Austria and Basten et al. (2014) for Norway, providing cash (in the form of a severance payment) increases the duration in unemployment. These analyses are performed in countries where agents, on top of the cash transfer, receive an unemployment compensation which ranges between 43% and 62% of the pre-unemployment wage.

On the other hand, there is recent evidence suggesting that when people are poor and have little or no public protection, providing money may help them to leave unemployment. Franklin (2018) develops an experiment in Ethiopia where he provides young jobless people with money (intended to cover transportation costs). He finds that four months after the start, people who received the subsidy were seven percentage points more likely to have a permanent work. The effect was stronger for relatively poor and cash constrained people. Using a regression discontinuity design Barrientos and Villa (2015) find that a conditional anti-poverty cash transfer in Colombia (conditional on maintaining kids in school) had positive effects on the level of employment of adult males. Banerjee et al. (2017) analyze the effects of seven different cash transfers programs on low income families in developing countries. When pooling the samples they do not find evidence of a negative effect on work outside the household. When treating each program separately, in some cases they find a positive effect. For a recent survey of articles showing that cash transfers could have non conventional effects on labor outcomes, see Baird et al. (2018a).

It is true that Barrientos and Villa (2015) and most of the programs analyzed by Banerjee et al. (2017) impose that the recipient's children attend school, and this could potentially affect their labor supply decisions. Nevertheless, as stated by Banerjee et al. (2017), "in general, it is important to note that there is considerable variation in how stringent conditions are enforced across countries, so that even in programs that are conditional 'on the books', beneficiaries may still receive the full stipend amount re-

gardless of whether they meet them". Mesén Vargas (2018) focuses on a subsample of the recipients of PROGRESA (a large cash transfer program in Mexico analyzed by Banerjee et al., 2017) that is not affected by the the conditionality of the program. She finds that the effects are overall similar to those for the total sample, that is, the transfers do not have negative effects on work outside the household.

Turning to the impact of unemployment compensation, it is typically found that people stay jobless longer when the generosity of UB increases (see e.g. Tatsiramos and van Ours, 2014 for a survey). However, to the best of our knowledge, none of the original studies this paper cites has focused on the effects of UB when they are low and there is little outside institutional assistance.

A limited amount of knowledge is nevertheless available for low-income populations. LaLumia (2013) estimates a hazard model for a sample of people eligible to the earned income tax credit (EITC) in the United States. 23% of the unemployment spells in her sample involve the receipt of UB. On average, individuals in her sample are eligible for about $150 weekly UB measured in 2007 real dollars. She finds that the effect of UB on women unemployment spells is not significant. For men, in some of her specifications the effect of UB on the hazard rate is positive and significant.

Kupets (2006) develops a duration analysis for Ukraine. The level of UB is low, around 25-28% of the official average wage. Only 4.6% of the sample reported UB as their main source of support. 13.9% of the sample states that casual activities or subsistence farming constitute their main source of subsistence. She finds that receiving UB does not decrease the reemployment probability. Moreover, she finds a negative effect of the presence of casual work on the job finding rate. In other fields than economics, in-depth interviews suggest that cuts in low levels of benefits are harmful to the job-search process (see e.g. Morris and Wilson, 2014).

This contrasting empirical evidence suggests that the effect of cash transfers on the probability of finding a job may vary with the wealth of people.

Even though the existence of daily subsistence constraints has been recognized in the economic literature,[3] to the best of our knowledge, these

[3] In the literature of development economics, see for instance Dercon (1998) and Zim-

constraints have not been explicitly included in the analysis.[4] This is especially true in the case of the job-search framework. Some extensions of the basic job-search framework are nevertheless linked to our approach.

The framework in which job search requires both money and effort (or time) has been introduced by Barron and Mellow (1979), Tannery (1983) and Schwartz (2015). The two first papers assume that search requires *time* and money but assume no complementarity between them. Schwartz (2015) assumes that looking for a job requires effort and an investment in search capital. He develops a theoretical analysis in a two-period setting and numerical experiments.

Ben-Horim and Zuckerman (1987), Decreuse (2002) and Mazur (2016) consider that job search requires *only* monetary expenditures. These papers, as ours, highlight the positive effect that UB *can* have on the duration in unemployment. Nevertheless, with their specification providing cash to the agents *always*[5] increases the probability of finding a job. This is at odds with empirical evidence which finds that cash transfers increase duration (Chetty, 2008, Card et al., 2007, Basten et al., 2014), and with empirical evidence that shows that richer agents experience longer unemployment spells (Algan et al., 2003, Lentz and Tranaes, 2005, Lentz, 2009 and Centeno and Novo, 2014).

Finally, some papers look at the design of unemployment insurance when hand-to-mouth jobless people can have access to informal jobs. Alvarez-Parra and Sanchez (2009) study the optimal time profile of UB when job-

merman and Carter (2003) about the role of subsistence constraints on assets accumulation for the poor and Bhalotra (2007) about the link between subsistence constraints and child work. In the literature on social insurance it has been mentioned by Chetty (2006) and Chetty and Looney (2006).

[4] As will soon be clear, this goes beyond the assumption that the marginal utility of consumption becomes huge when the level of consumption tends to zero. Pavoni (2007) analyzes the design of optimal unemployment insurance when the planner must respect a lower bound on the expected discounted utility of the agent. The unemployed agent decides whether to search, or not (binary decision) subject to the scheme proposed by the planner.

[5] The effect of providing cash to the agent, regardless of the employment status, is in principle ambiguous. Nevertheless, one can show that for a utility function that exhibits constant relative risk aversion (CRRA), providing cash to the agent increases job search effort and therefore decreases the expected duration in unemployment. If the utility function exhibits constant absolute risk aversion (CARA), providing cash to the agent has no effect on job search effort. These results are available from the authors upon request.

search effort and in-work effort in the hidden labor market are private information and perfect substitutes. A key result of their paper is that at the start of the spell the optimal level of UB should be generous enough to deter participation to the hidden economy. Gonzalez-Rozada and Ruffo (2016) extend Shimer and Werning (2007) to the case where all insured unemployed have an additional exogenous source of untaxed income. They also develop a sufficient statistics approach. Long and Polito (2017) look at the time profile of UB when the marginal cost of job search is higher if the unemployed works informally. Some other papers adopt a Mortensen-Pissarides framework in the presence of an informal sector and look at the impact of the introduction of UI on equilibrium unemployment and on the share of formal, informal wage employment and self-employment (see e.g. Margolis et al., 2014, Bosch and Esteban-Pretel, 2015 and Charlot et al., 2016).

1.3 Positive Analysis

This section first recalls two standard results of the literature obtained in a very stylized setting. Then, we move to our baseline model, which incorporates subsistence requirements and a subsistence activity. We provide conditions under which increasing the generosity of the cash transfer reduces the effort put in the subsistence activity. Finally, we briefly introduce three extensions to our baseline model and discuss an alternative framework that generate properties that are similar to those of our baseline model.

1.3.1 Standard Job Search Model [SM]

Before introducing our baseline model [BM] let us look at the "standard model" [SM], a simple theoretical setting leading to the standard properties summarized at the end of this subsection, which are questioned by our [BM]. The [SM] is a partial equilibrium job search model in a stationary discrete-time setting. Infinitely-lived, homogeneous and hand-to-mouth unemployed workers only have one decision variable: their search effort intensity, $s \in \mathbb{R}_+$. The instantaneous utility is separable in consumption

and search effort. $\lambda(s)$ denotes the cost of job search effort and it is assumed that $\lambda(0) = 0$, $\lambda_s > 0$, $\lambda_{ss} \geq 0$.[6] Unemployed workers are entitled to a flat unemployment benefit, if any, $b \geq 0$, with no time limit. Hence, there is no room for an "entitlement effect" (Mortensen, 1977). Moreover, agents are entitled to a cash transfer, if any, $A \geq 0$, which can be kept if the agent finds a job.[7] In each period the consumption of the unemployed agent, c^u, is equal to $b + A$. It is further assumed that the agent is risk averse, implying that her utility function $u(c)$, $c \in \mathbb{R}_+$, verifies: $u_c(c) > 0$, $u_{cc}(c) < 0$. In each period job offers arrive with probability $P(s)$ such that $P(0) = 0$, $P_s > 0$, $P_{ss} \leq 0$. The net wage and hence the consumption level, c^e, associated to a job offer is equal to $w + A - \tau$, where w is the gross wage, and τ is the level of taxes if the job is formal.[8] The disutility of in-work effort is normalized to zero. The employed agent loses her job with an exogenous probability ϕ. The agent discounts the future at a rate $\beta = \frac{1}{1+r}$ where r is the interest rate. The unemployed chooses s in the current period. If she receives an offer, she starts working in the *next* period.

In the [SM], the lifetime value V^U in unemployment (respectively V^E in employment) verifies the following Bellman equations:

$$[SM] = \begin{cases} V^U = \max\limits_{s} \quad u(b+A) - \lambda(s) + \beta[P(s)V^E + (1-P(s))V^U] \\ V^E = u(w+A-\tau) + \beta[\phi V^U + (1-\phi)V^E] \end{cases} \tag{1.1}$$

Subject to: $V^E - V^U \geq 0$, $s \geq 0$.

We recall two standard properties of an interior solution to the [SM]:

(1) Increasing b lengthens the expected unemployment duration $D = 1/P$.

(2) Increasing A lengthens the expected unemployment duration (Chetty, 2008).

[6] For any function $f(x,y)$, f_x designates the first-order partial derivative and f_{xy} the second-order one.

[7] Below we interpret A as a public transfer but it could also be interpreted as a transfer inside the family.

[8] As in Chetty (2008) or Hopenhayn and Nicolini (1997), we consider a degenerate distribution of wage offers. Furthermore, the net wage is high enough so that the probability of acceptance of an offer is 1. These assumptions are relaxed in Subsection 1.3.3.

1.3.2 Baseline Model [BM]

Our [BM] incorporates four differences into the [SM]. First, we assume a Stone-Geary utility of consumption $v(c - c_{min})$, defined for $c \geq c_{min}$ where $c_{min} \geq 0$ is the agent's subsistence requirement.[9] Second, we assume that the unemployed agent can carry out a subsistence activity by exerting some effort $a \in \mathbb{R}_+$. This activity is even needed if $b + A < c_{min}$. Third, we assume that effort a can (*but need not*) be costly, meaning that a is now a second argument of the cost $\lambda(\cdot)$ with $\lambda_a \geq 0$ and $\lambda_{aa} \geq 0$. Although it is quite natural to assume that the effort a induces some disutility like job-search effort does it, the properties mentioned in this section continue to hold if we assume that λ is not a function of a under the maintained assumption introduced below about the role of a on P. We also assume that the marginal cost of job-search effort cannot strictly decrease when more effort is devoted to guarantee subsistence: $\lambda_{sa} \geq 0$. Fourth, the job finding probability P is a function of s and a. Following the scarcity literature mentioned in the introduction we assume that cognitive capacity is limited. Dealing with subsistence, which is a pressing activity, taxes this cognitive capacity, meaning that less cognitive capacity is left for job search. Formally, the effort devoted to the subsistence activity has a negative effect on the job finding probability: for the same level of job search effort, the job finding probability is lower the higher the quantity of effort devoted to the subsistence activity, i.e, $P_a < 0$. Furthermore, the marginal effect of job-search on the exit probability cannot strictly increase when more effort is devoted to guarantee subsistence: $P_{as} \leq 0$.

We keep the short notation $u(c)$, where $u(c) = v(c - c_{min})$ and $u_c(c) > 0$, $u_{cc}(c) < 0$. The consumption level when unemployed becomes $c^u = b + A + g(a)$, where $g(a)$ is the subsistence activity, with: $g(0) = 0$, $g_a > 0$, $g_{aa} \leq 0$. We further assume that $g(a) = 0$ when the agent is employed, meaning that the agent does not carry out the subsistence activity when employed.[10]

All along the chapter, in accordance with Alvarez-Parra and Sanchez (2009) and contrary to Long and Polito (2017), we assume that a and s are not ob-

[9] Imposing a unique daily minimum consumption level is of course a simplification.

[10] Otherwise devoting effort to the subsistence activity would have negative effects on the productivity of the employed agent, and this should also be analyzed. In such a setup, the probability of losing the job, ϕ, would be a function of a. Given our focus on the problem of the unemployed, such an analysis is beyond the scope of this chapter.

servable by the UI agency. So, nor the activity a nor a too low level of s can be sanctioned.[11]

In the [BM], the Bellman equations in unemployment and in employment can be written as:

$$[BM] = \begin{cases} V^U = \max\limits_{s,a} \quad u(c^u) - \lambda(s,a) + \beta[P(s,a)V^E + (1-P(s,a))V^U] \\ V^E = u(c^e) + \beta[\phi V^U + (1-\phi)V^E] \end{cases} \tag{1.2}$$

where $u(c^u) = v(b + A + g(a) - c_{min})$, $u(c^e) = v(w + A - \tau - c_{min})$, $\lambda_a \geq 0$, $\lambda_{aa} \geq 0$, $\lambda_{as} \geq 0$, $\lambda_s > 0$, $\lambda_{ss} \geq 0$, $P_a < 0$, $P_{as} \leq 0$, $P_s > 0$, $P_{ss} \leq 0$, $P(0,a) = 0$.

Subject to: $b + g(a) \geq c_{min}$, $w - \tau \geq c_{min}$, $V^E - V^U \geq 0$, $a \geq 0$ and $s \geq 0$.

Comparative Statics in the Baseline Model The first order conditions of this maximization program, if the solution is interior, are:[12]

$$G_a = u_c(c^u)g_a - \lambda_a + \beta P_a[V^E - V^U] = 0 \tag{1.3}$$

$$G_s = -\lambda_s + \beta P_s[V^E - V^U] = 0 \tag{1.4}$$

where $V^E - V^U = \frac{u(c^e) - u(c^u) + \lambda(s,a)}{1 - \beta[1 - P(s,a) - \phi]}$.

Let ξ designate either b or A. In general in the [BM], an increment in ξ induces ambiguous effects on s and on a, which implies that the standard properties recalled in Section 1.3.1 are not *necessarily* met. We now discuss the conditions under which $\frac{da}{d\xi} < 0$, and we explain why $\frac{ds}{d\xi}$ is almost always negative. *This discussion opens the possibility of a hump-shaped relationship between the hiring rate and ξ.*

The marginal effect of b and A on effort devoted to the subsistence activity

Proposition 1. *The following inequality is a necessary condition to have $da/d\xi < 0$:*

$$-u_{cc}(c^u)g_a > \beta \frac{\partial(V^E - V^U)}{\partial \xi} P_a \tag{1.5}$$

[11] On the difficulty of observing job search effort without errors, see for instance Cockx et al. (2018).

[12] Corner solutions are discussed in Appendix 1.A.

while the following inequality is a sufficient condition to have $da/d\xi < 0$:[13]

$$-u_{cc}(c^u)g_a > \beta \frac{\partial(V^E - V^U)}{\partial \xi}\Big(P_a - P_s \cdot max\{\frac{\lambda_{as}}{\lambda_{ss}}, \frac{P_{as}}{P_{ss}}\}\Big) \tag{1.6}$$

Proof. See Appendix 1.A. ■

We are fully aware that conditions (1.5) and (1.6) typically depend on endogenous variables, so that it is not easily checked whether they are verified.

When ξ increases, two different forces affect a. Consider first the left hand side (LHS) of inequality (1.6): when ξ increases the marginal utility gain of effort devoted to the subsistence activity is smaller. This effect goes in the direction of reducing a. We call this an *income effect*.

Consider now the right hand side (RHS) of the inequality: $\beta \frac{\partial(V^E - V^U)}{\partial \xi} < 0$ implies that an increment in ξ distorts the relative value of being employed vs. being unemployed (and even more so if the tax rate is adjusted to balance the public budget). This affects a through two channels, a direct one, $P_a < 0$, and an indirect one through the effect of the change in ξ on s, $-P_s \cdot max\{\frac{\lambda_{as}}{\lambda_{ss}}, \frac{P_{as}}{P_{ss}}\} \leq 0$. The direct channel: since employment is less attractive, the negative effect that a has on P is marginally less detrimental for the utility of the agent. The indirect channel: An increase in ξ can have, and as discussed later on typically has, a negative direct impact on s. When the cross-derivatives λ_{as} and P_{as} are not both nil, this change in s in turn affects the level of a. Two channels are at work. On the one hand, given the reduction of s, the marginal cost of a becomes smaller ($\lambda_{as} \geq 0$). On the other hand, given the reduction in s, a is now marginally less detrimental to the hiring probability ($P_{as} \leq 0$). Both the direct and the indirect effects go in the direction of increasing a. We call this a *substitution effect*. As explained in Appendix 1.A, a sufficient condition can be expressed in terms of the strongest of these two channels. Hence the max operator in (1.6).

Example:

If the cost of effort λ *is a function of* s *but not of* a, *and* $P(a,s)$, $g(a)$ *and* $u(c^u)$ *have the functional forms assumed in Table 1.1 (and justified in Section 1.4),*

[13] If $\lambda_{ss} = 0$, or $P_{ss} = 0$, see Appendix 1.A.

Condition (1.6) *can be written as an upper-bound on a, namely:*

$$\frac{(1-\beta_1)\sigma\gamma}{\beta_2} \cdot \frac{G}{b - c_{min} + G} > a \tag{1.7}$$

Proof. See Appendix 1.A. The LHS of this condition makes sense if $b - c_{min} + G > 0$, where G is the scale parameter of $g(a)$ (see Table 1.1). The other parameters on the LHS of this condition are the (constant) relative risk aversion σ and all the parameters appearing in P and $g(a)$. As b increases, Condition (1.7) becomes more stringent.

The marginal effect of b and A on job-search effort

The sign of $\frac{ds}{d\xi}$ is given by the sign of expression (1.21) in Appendix 1.A. All forces in that equation but one push it to be negative. The positive effect comes through the interaction between a and s.

1.3.3 Extensions to the Baseline Model [BM] and Monetary Costs of Job Search

This subsection briefly introduces three extensions to [BM], which we use later on in the numerical analysis. These extensions introduce one by one some realistic features that are absent in the [BM]. In all the extensions time is finite and the agent lives for T periods. Appendix 1.A.2 develops the three theoretical frameworks. In the first extension we model a single unemployment spell during which the agent is entitled to the UB, if any, for $B < T$ periods. We call it the "model with finite entitlement" [FE]. In the second one, we allow for the presence of incomplete financial markets: the agent starts her life with an exogenous level of assets, she can save and get indebted up to a certain limit L, and she has to repay her debt at the end of her life. We call it the "model with incomplete financial markets" [FM]. In the third one, we assume a sequential search model when there is a distribution of wage offers and no recall (McCall, 1970). We call it the model with "stochastic wage offers" [SWO]. The following section simulates these models as well as framework [BM].

Moreover, another setup can generate similar comparative statics properties in the absence of a minimal consumption level c_{min}. Assume that

(1) Looking for a job requires both an amount of money m and some effort s.

(2) There is no subsistence requirement ($c_{min} = 0$) nor a subsistence activity $g(a)$. Therefore, $c_u = b + A - m$.

(3) The job finding probability P is a function of s and m; with $P_m > 0$ and $P_{sm} \geq 0$, and standard signs of derivatives with respect to s.

(4) The cost λ is a function of s but not of m.

Then, the lifetime value in unemployment now solves:

$$V^U = \max_{s,m} \quad u(b + A - m) - \lambda(s) + \beta[P(s,m)V^E + (1 - P(s,m))V^U] \qquad (1.8)$$

It can be checked that the effect of ξ (i.e. b or A) on m and s is analytically ambiguous and that this model can also generate a hump-shaped $b \mapsto P$ profile. See Mesén Vargas and Van der Linden, 2018, p.21 for the numerical properties of this model, which are similar to those of our [BM].

Notice that if c_{min} was taken into account, the difference between this setup and our [BM] would be relevant, because obviously $b + A - m \leq b + A$ and subsistence could not be guaranteed if $b + A < c_{min}$.

We do not question the idea that finding a job requires some expenses. However, we do not put forward the setup introduced here for the following reason. The implications of a monetary cost of job-search are arguably more substantial among the population that struggles with subsistence. However, if we remove Assumption (2) above and introduce c_{min}, we have just explained that this setup is unable to deal with the (to us most interesting) cases where b or $b + A$ is low.

1.4 Numerical Exercise

Since analytical results are ambiguous, we first take the [BM] and show that the relationship between the exit rate P and the benefit level b is hump-shaped. This property turns out to be robust since it holds for a wide range of parameter values and for the extensions introduced in Section 1.3.3. Second, we show that in our [BM] and in its extensions, provid-

ing cash to the agent (A) can increase the probability of finding a job when the level of b is low enough. Finally, we analyze the effect of $g(a)$ and c_{min} on the optimal level of b.

In this section, contrary to what was done in Section 1.3.2, we analyze budget-balanced changes of b. The benchmark parameterization adopts the specifications and parameters of Table 1.1. We choose a specification for $P(s,a)$ such that if the agent devotes no effort to the subsistence activity, i.e $a = 0$, P becomes an often-used function of s only. We later check whether the properties are robust to a change in this specification. We take the time unit to be a week. The values of ϕ and r are taken from Shimer and Werning (2007). We assume a constant relative risk aversion utility function where the value of σ (the RRA) is taken from Chetty (2008). Due to a lack of evidence, it is hard to pinpoint the values of the other parameters. Nevertheless, the chosen parameterization applied to the [BM] leads to an expected duration in unemployment of 18.1 weeks (if b is set to its optimal value verifying Equation (1.9)), which is reasonable.[14] A sensitivity analysis considering 43 other sets of parameter values is provided in Fig.1.2.

1.4.1 Impact of the unemployment compensation b on Unemployment Duration

Baseline Model [BM]

In the left panel of Fig. 1.1, when b is nil, the agent devotes a high effort a to the subsistence activity. When b increases, the *income effect* dominates the *substitution effect*, which implies that the agent devotes less effort to subsistence. In the central panel of Fig. 1.1 the quantity of job search effort s, as expected, monotonically decreases with b. Finally, in the right panel of Fig. 1.1, $P(s,a)$ is hump-shaped. When b is small enough, below 19 in this graph (i.e, a gross replacement of 19%), the agent devotes a high level of effort to the subsistence activity. This is a pressing activity which consumes attentional resources, and leaves less for elsewhere (Shah et al., 2012), in particular, for job search. Putting effort into the subsistence ac-

[14] Chetty (2008) calibrates his model for the US to have an average unemployment duration of 15.8 weeks.

	Description	Functional Form	
$u(c^u)$	Utility Function	$\frac{(c-c_{min})^{1-\sigma}}{1-\sigma}, \sigma > 0, \neq 1$	Chetty (2008)
$\lambda(s,a)$	Cost of Search effort	$e^{(\mu_1 s+\mu_2 a)} - 1, \mu_1, \mu_2 \geq 0$	Cockx et al. (2018)
$g(a)$	Subsistence Production	$G a^{\gamma}$, $G > 0$, $1 > \gamma > 0$	Our choice
$P(s,a)$	Prob. of finding a job	$E s^{\beta_1} e^{-\beta_2 a}$, $E > 0$	Our choice
		Parameters (benchmark)	
ϕ	Job Destruction rate	0.00443	Shimer and Werning (2007)
r	Interest rate	0.001	Shimer and Werning (2007)
β	Discount rate	0.999	$1/1+r$
E	Coefficient in front of $P(s,a)$	0.2	
β_1	Exponent of s in $P(s,a)$	0.5	
β_2	Exponent of a in $P(s,a)$	0.5	
w	Wage	100	
c_{min}	Subsistence level	20	
σ	RRA	1.75	Chetty (2008)
μ_1	Parameter of s in $\lambda(s,a)$	0.3	
μ_2	Parameter of a in $\lambda(s,a)$	0.3	
G	Scale parameter of $g(a)$	22	
γ	Exponent if $g(a)$ is isoelastic	0.8	

Table 1.1: Functional Forms and Parameters

tivity is the way through which the agent deals with scarcity, but by doing so, the cognitive capacity is taxed and some of her most fundamental capacities are inhibited (Mullainathan and Shafir, 2013 p.42). Higher levels of b allow the agent to devote less effort to the subsistence activity. This frees cognitive resources which allow the agent to be more mindful when looking for a job. This effect is strong enough to outweigh the negative effect of a rise b on job search effort.

For higher values of b, subsistence is no longer a pressing issue. Even if the quantity of effort devoted to subsistence keeps on decreasing, the positive effect that this decline has on the probability of finding a job is mild and thus, over weighted by the entailed reduction in job search.

The level of b maximizing $P(s,a)$ can be sensitive to the choice of parameter values. Nevertheless, the *qualitative shape* of Fig. 1.1 remains the same for a broad set of parameter values. Fig. 1.2 reports the results for 43 different sets of parameter values. Under heading "argmax P", the reader finds the level of b for which $P(s,a)$ reaches the maximum. For almost all parameter values of Fig. 1.2, the hump-shaped profile of $P(s,a)$ is preserved when

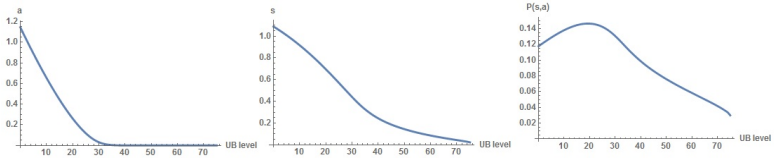

Figure 1.1: **Baseline Model [BM]**

The three graphs show the level of a, s and $P(s,a)$ respectively, in the [BM] for different values of b. The functions and parameters are those of Table 1.1.

$c_{min} > 0$. It is not the case when the effort devoted to the subsistence activity has a small enough marginal effect on the exit rate (namely $\beta_2 \leq 0.1$). Then, even if a always decreases with b (strictly for low values of b, weakly for high values of b) this effect is dominated by the drop in s. Nor is P hump-shaped when G, the scale parameter of $g(a)$, is high enough (≥ 70). Since self-insurance is relatively easy, devoting a small quantity of effort to the subsistence activity is enough to meet the subsistence requirements even when b is negligible. So, the negative effect of this effort on the job finding probability is very limited. Then, the decline of a when b rises has an impact on P which is always dominated by the one of the reduction in s. Fig. 1.2 confirms that the hump-shaped property of the exit rate P is a robust property when $\lambda_a \mapsto 0$, i.e. when parameter $\mu_2 \mapsto 0$.

Is the hump-shaped property robust to another specification of $P(s,a)$? We consider now two alternatives to the specification adopted in Table 1.1. These specifications are still such that if the agent devotes no effort to the subsistence activity, i.e $a = 0$, P becomes an often-used function of s only, namely of the form $s^{\beta_1}, 0 < \beta_1 < 1$. We consider the two following alternative functional forms:

(1) $P(s,a) = Es^{\beta_1}(1-a)^{\beta_2}$, with $a < 1$ and $0 < \beta_1 < 1$.

(2) $P(s,a) = Es^{\beta_1}\frac{1}{1+a^n}$, with $n \geq 1$.

Both of them, as well as the one we chose in Table 1.1, are such that $P_a < 0$, $P_s > 0$, $P_{as} \leq 0$, which are the theoretical requirements that we imposed in Section 1.3.2. Fig.1.3 shows that the hump-shaped property of $P(a,s)$ is preserved with both specifications.

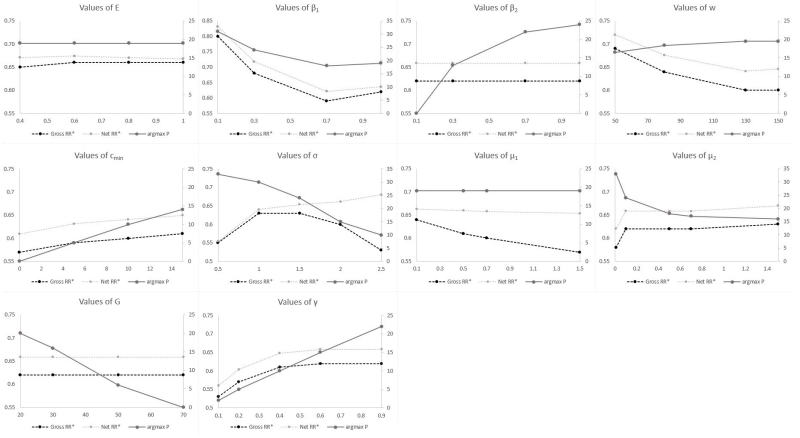

Figure 1.2: **Sensitivity Analysis for the Baseline Model [BM]**

These graphs report the results for 43 different specifications, all using the functions of Table 1.1. We take the parametrization of Table 1.1 and change one parameter at the time whose values are on the horizontal axis. "argmax P", is the level of b on the right vertical axis for which $P(s,a)$ reaches the maximum."Gross RR*" (respectively, "Net RR*") gives the corresponding optimal gross (resp., net) replacement rates on the left vertical axis: $\frac{b}{w}$ (resp., $\frac{b}{w-\tau}$).

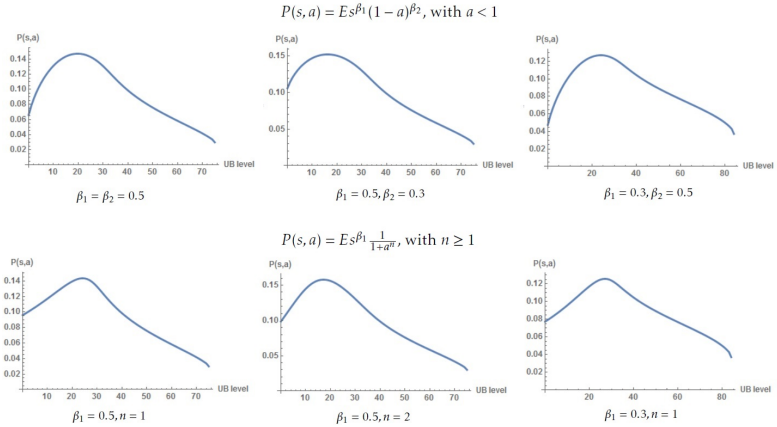

Figure 1.3: **Sensitivity analysis for the job finding probability** $P(s,a)$

These graphs show the shape of the job finding probability $P(s,a)$ for different values β_1, β_2 and β_1, n, respectively. The other functions and parameters are those of Table 1.1.

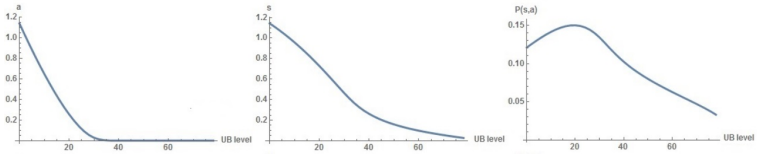

Figure 1.4: **Finite Entitlement [FE]**

The three graphs show the level of a_t, s_t and $P(s_t, a_t)$ respectively, at the start of the unemployment spell, in the model [FE] for different values of b. The functions and parameters are those of Table 1.1, except for ϕ which is now equal to zero. We set $T = 200$, the total quantity of time, and $B = 100$, the number of periods in which the agent is entitled to the flat benefit b.

Extensions

In this section we show that the hump-shaped profile of P also holds true for the various extensions presented in Section 1.3.3. Unless stated otherwise, we use the functions and parameter values specified in Table 1.1, with one exception: For simplicity (as Hopenhayn and Nicolini, 1997, Chetty, 2008, Shimer and Werning, 2008, Schmieder et al., 2012, Kolsrud et al., 2015, Kroft and Notowidigdo, 2016), we consider that employment is an absorbing state ($\phi = 0$). We set $T = 200$. In all cases, the graphs show the levels of a_t, s_t and the exit probability at the beginning of the unemployment spell.[15]

Finite Entitlement [FE]: The agent is entitled to a flat benefit b for a number of periods B strictly smaller than T. We set $B = 100$.[16] The choices of the agent are shown in Fig. 1.4.

Incomplete Financial Markets [FM]: We assume that the agent starts the unemployment spell with an exogenous level of assets $k_0 = 0$, and we

[15] The same qualitative profile holds later in the spell.

[16] Both B and b could be part of the optimal unemployment insurance design (see for instance Hopenhayn and Nicolini, 1997), nevertheless in this chapter we look at the level of b conditional on B, as Baily (1978), Chetty (2006) and Chetty (2008) do.

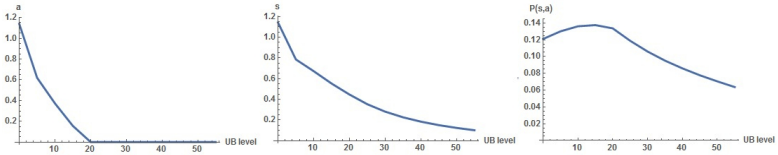

Figure 1.5: **Incomplete Financial Markets [FM]**

The three graphs show the level of a_t, s_t and $P(s_t, a_t)$ respectively, at the start of the unemployment spell, in the model [FM] for different values of b. The functions and parameters are those of Table 1.1, except for ϕ which is now equal to zero, moreover we allow the agent to get indebted up to 200 (two times the wage) and we assume that the agent has to repay her debt at the and of the $T = B = 200$ periods.

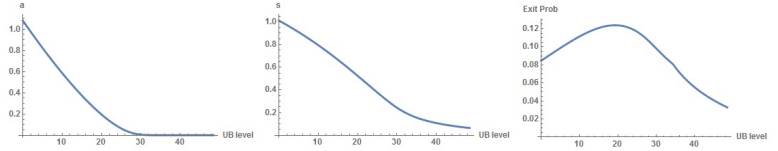

Figure 1.6: **Stochastic Wage Offers [SWO]**

The three graphs show the level of a_t, s_t and the exit probability respectively, at the start of the unemployment spell, in the model [SWO] for different values of b. The functions and parameters are those of Table 1.1, except for ϕ which is now equal to zero, and $\sigma = 2$. We set $T = B = 200$, the total quantity of time. We assume that wages are Pareto distributed with parameters $w_{min} = 66.66$ and $\alpha = 3$.

allow her to get indebted up to 200, that is, up to two times the gross wage. The choices of the agent are shown in In Fig. 1.5.

Stochastic Wage Offers [SWO]: We consider the case in which the distribution of offers is not degenerate. We assume that wage offers follow a Pareto distribution with minimum possible value $w_{min} = 66.66$ and shape parameter $\alpha = 3$, so that the average wage is equal to 100. We set the coefficient of relative risk aversion $\sigma = 2$ because an integer allows us to find a closed form expression for V_t^U, which simplifies the numerical analysis. The choices of the agent are shown in Fig. 1.6.

The robust hump-shaped exit probability that we find is compatible with the empirical results mentioned in Section 1.2 (for low levels of b: La-Lumia, 2013 and Kupets, 2006; for higher levels of b, with the empirical evidence surveyed by Tatsiramos and van Ours, 2014).

1.4.2 Impact of the cash transfer A on Unemployment Duration

As cash transfers of this type are in practice financed by various public means, changes in A are not budget-balanced. Moreover, recall that A can be kept if the agent finds a job. For these two reasons, ceteris paribus, A generates less disincentives to look for a job than b. Let us start by analyzing the effect of a cash transfer in the [BM]. Consider Fig. 1.7, where all the functions and the parameters are those of Table 1.1. It shows the effect of providing a cash transfer to the agent for each possible budget-balanced level of b. For that purpose, we compare two cases: (1) the only income of the agent is b (the continuous line) and (2) on top of b the agent receives a transfer $A = 10$, i.e. 10% of w (the dashed line). Both curves intersect when b is close to 15 (i.e., a gross replacement rate of 15%). Above this level, providing cash to the unemployed decreases her expected probability of finding a job. When b is zero or low enough (up to 15), providing cash to the agent *increases* her probability of finding a job. In this case, subsistence is only guaranteed by a relatively high level of effort a. Then providing cash reduces a to an extent that more than compensates the standard negative effect of the cash transfer on s. This is no more true when b is under but sufficiently close to the subsistence level. Then the effort a needed to reach the threshold c_{min} is mild and the impact of providing cash on a does no more outweigh its effect on s.

We now check whether the above numerical properties are robust in two senses. First, Fig. 1.7 has been derived for a cash transfer of 10. Its qualitative properties hold true as long as the transfer to wage ratio A/w is at most equal to 0.35. As A/w increases from zero, the range of b values for which rising A enhances exits becomes smaller. Second, we check whether Fig. 1.7 remains valid for extensions [FE], [FM] and [SWO]. The parameterization for each model is the one used in subsection 1.4.1. Fig. 1.8 shows the results. The intuition is the same as before.

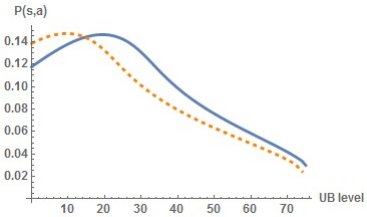

Figure 1.7: **Cash Transfer Effect [BM]**

This graph shows the job finding probablity $P(s,a)$ for different values of b. The continuous line is generated with the functions and parameters of Table 1.1. The dashed line uses the same functions and parameters, the only difference being that the agent receives a transfer of 10 regardless of her employment status.

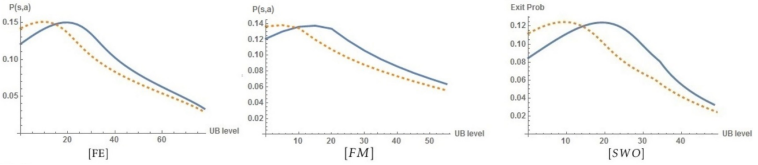

Figure 1.8: **Cash Transfer Effect**

These graphs show the job finding probability P for different values of b, for the extensions: [FE], [FM] and [SWO]. The continuous line is generated with the functions and parameters discussed in the previous section for each model, the dashed line is generated with the same parameters except for the fact that the agent receives a transfer of 10 regardless of her employment status.

Our findings are consistent with the empirical evidence surveyed in the introduction. When the level of b is zero (or low), providing cash increases the probability of finding a job (Franklin, 2018, Barrientos and Villa, 2015, Banerjee et al., 2017, Mesén Vargas, 2018). Instead, when the level of b is higher, providing cash increases expected duration in unemployment (Chetty, 2008, Card et al., 2007, Basten et al., 2014).

1.4.3 The Optimal level of b

This section characterizes and quantifies b^*, the optimal level of b. In particular we analyze the effects of c_{min} and $g(a)$ on b^*. Finally, we compare the value of b^* obtained in the [BM] with the one in the [SM]. Appendix 1.B shows that in setting [BM], b^* is characterized by the following Baily-Chetty formula:

$$\frac{u'(b^*+A+g(a)-c_{min})-u'(w+A-\tau-c_{min})}{u'(w+A-\tau-c_{min})} = \varepsilon_{D(a,s),b^*} \qquad (1.9)$$

$$\text{where} \quad \varepsilon_{D(a,s),b^*} = \frac{-b^*}{P(a,s)}\frac{dP(a,s)}{db}$$

Its interpretation is standard. The LHS of the equation is equal to the marginal *gain* of b through consumption smoothing. The RHS captures the moral hazard costs of benefit provision due to behavioral responses. Compared to the standard model [SM], our baseline model [BM] introduces two new components into this formula: c_{min} and $g(a)$. The effect of c_{min} on b^* turns out to be ambiguous. The presence of $g(a)$ introduces a margin of self-insurance which, everything else equal, lowers the level of b^*.[17]

Fig. 1.2 displays different indicators. "Gross RR*" is the optimal gross replacement rate b^*/w where in the simulations $w = 100$. "Net RR*" is the optimal net replacement rate $b^*/(w-\tau)$.

Fig. 1.2 indicates that the optimal gross replacement rate is, in most cases, between 0.55 and 0.72. Several other studies have computed the optimal value of b in different contexts. They tend to find replacement rates close to 0.50-0.60 (see for instance Pavoni, 2007 and Chetty, 2008).

[17] In a setup with home production Arslan et al. (2013) finds a similar result.

Higher levels of c_{min} increase the LHS of (1.9) as long as preferences exhibit decreasing absolute risk aversion (which is a common assumption, see for instance Mas-Colell et al. (1995) p.193; In particular, the constant RRA utility function used in the numerical exercise, satisfies this condition). The RHS of (1.9) can be written as: $\varepsilon_{D,b} = \frac{b}{P}\frac{dP}{ds}(\frac{-ds}{db})$. The effect of c_{min} on $\frac{-ds}{db}$ is ambiguous. Numerically, higher levels of c_{min} turn out to imply higher levels of b^* (see Fig. 1.2).

To discuss the link between self-insurance $g(a)$ and b^* consider the four parameters more directly linked to a: β_2, μ_2, G, and γ. The optimal level of b does not change with β_2, μ_2 or G. This is because $a \approx 0$ for levels of b above 60 in these specifications. Therefore, changing the parameters associated with a has no implications on b^*. Instead, when γ changes b^* varies, because, for low levels of γ, a is not negligible anymore even for high values of b. In that case, b^* increases when γ increases. This is intuitive because the value of $g(a)$ is smaller the higher γ (for a given $a < 1$, which turns out to be the case). For such values a higher value of γ reduces the self-insurance capacity of the agent.

Our numerical exercise shows that the optimal gross replacement rate in the [SM] is 0.57 under the assumptions in Table 1.1. In all cases but one, the optimal replacement rate is higher or equal in the [BM] as compared with the [SM] setting (see Fig. 1.2). The only exception is the case in which $\gamma = 0.1$. When $\gamma = 0.1$, low levels of a generate a high $g(a)$. As self-insurance is easily guaranteed, the optimal b^* is lower than in the [SM].

1.5 Conclusion

It is generally accepted that providing additional cash to jobless people lowers their chances of finding a job. This is the common wisdom whether the cash transfer is conditional on being unemployed or can be kept when a job is found. However, not much is known about the effects of cash transfers in environments with little institutional assistance. There is nevertheless some recent evidence suggesting that cash transfers in those contexts could have negligible or even positive effects on people's probabilities of finding a job. In this chapter, by extending the standard job search model, we formalize an intuitive mechanism that helps to rationalize why cash

transfers can both stimulate and slow down the recipients' probability of finding a job.

The stylized nature of job-search theory sets aside a number of day-to-day problems encountered during joblessness. This chapter has put forward the need to consume a minimal amount in an otherwise standard job-search problem. Under realistic assumptions such as the absence of private unemployment insurance and imperfect capital markets, a minimal consumption level cannot be guaranteed when benefits are very low or absent (a feature shared by many countries and relevant for various subpopulations in rich countries). Jobless people then depend upon a range of "subsistence activities" to make ends meet. However, performing those activities limits cognitive resources (or time) available for job-search. Providing cash can then relax the constraints imposed by those limits.

We have shown that a cash transfer program can raise the hiring probability. This is true whether the funds are transferred conditional on being unemployed (and take the form of an unemployment compensation) or whether the person keeps them once a job is found (unconditional transfer). This property is established numerically in a range of job-search settings. Qualitatively, it is verified when both the levels of unemployment compensation and the unconditional transfer are low enough (one of them being possibly nil). Common wisdom however holds above some threshold. Finally, in comparison with a standard job search model, our numerical exercise indicates that the optimal replacement ratio is typically higher in our setting.

Appendix Chapter 1

1.A Positive Analysis

1.A.1 The Baseline Model [BM]

Corner Solutions:

Let us analyze the possibility of having corner solutions:

- Note first that choosing $a = 0$ when $b < c_{min}$ is not possible. In that case, the agent needs to generate some subsistence consumption.
- If $b > c_{min}$ and if the agent chooses $a = 0$, then the problem becomes exactly equal to the [SM], and hence (1.4) is the unique FOC (the only difference with respect to the [SM] being the presence of c_{min}).
- We avoid having $s = 0$ by imposing $\lambda_s(0,a) < \beta P_s(0,a)[V^E - V^U]$ for all possible values of a. Except for the presence of a, this inequality is standardly assumed (explicitly or not) in the job search literature.

Proof of Proposition 1:

The first order conditions are already stated in the main text (1.3, 1.4). The second order partial derivatives are:

$$G_{ss} = -\lambda_{ss} + \beta P_{ss}(V^E - V^U) < 0 \tag{1.10}$$

$$G_{as} = -\lambda_{as} + \beta P_{sa}(V^E - V^U) \leq 0 \tag{1.11}$$

$$G_{aa} = u_{cc}(c^u)g_a^2 + u_c(c^u)g_{aa} - \lambda_{aa} + \beta P_{aa}(V^E - V^U) \gtrless 0 \tag{1.12}$$

$$G_{s\xi} = \beta P_s \frac{\partial(V^E - V^U)}{\partial \xi} < 0 \tag{1.13}$$

$$G_{a\xi} = u_{cc}(c^u)g_a + \beta P_a \frac{\partial(V^E - V^U)}{\partial \xi} \gtrless 0 \tag{1.14}$$

$$G_{sw} = \beta P_s \frac{\partial(V^E - V^U)}{\partial w} = \frac{\beta P_s}{1 - \beta[1 - P(a,s) - \phi]} u_c(c^e) > 0 \tag{1.15}$$

$$G_{aw} = \beta P_a \frac{\partial(V^E - V^U)}{\partial w} = \frac{\beta P_a}{1 - \beta[1 - P(a,s) - \phi]} u_c(c^e) < 0 \tag{1.16}$$

The following conditions are sufficient to guarantee that a solution, if any, to the system (1.3, 1.4) is a unique maximum: $G_{ss} < 0$, $G_{aa} < 0$ and $G_{ss}G_{aa} - G_{as}^2 > 0$. To guarantee that $G_{ss} < 0$, P_{ss} and λ_{ss} cannot both be equal to zero. If $P_{aa} \leq 0$, G_{aa} is negative. This is for instance the case if $P(s,a) = Es^{\beta_1}(1-a)^{\beta_2}$ (with $a < 1$ and $0 < \beta_1, \beta_2 < 1$). If $P_{aa} > 0$, it cannot be too large. For instance, when $P(s,a) = Es^{\beta_1}e^{-\beta_2 a}$ $(0 < \beta_1 < 1,\ \beta_2 > 0)$, $P_{aa} = (\beta_2)^2 P(s,a)$ cannot be too large. The last condition, $G_{ss}G_{aa} - G_{as}^2 > 0$, is then obviously met if $G_{as} = 0$. Otherwise, the interaction effects λ_{as} and P_{sa} (taken in absolute value) cannot be too large. Numerically, for all combinations of parameters in Fig. 2, it has been checked that the above sufficient conditions are verified at the solution verifying the first-order conditions.

Totally differentiating the FOC (1.3, 1.4) leads to:

$$\begin{cases} G_{ss}ds + G_{sa}da + G_{s\xi}d\xi = 0 \\ G_{as}ds + G_{aa}da + G_{a\xi}d\xi = 0 \end{cases} \tag{1.17}$$

Hence:

$$\frac{da}{d\xi} = \frac{-G_{ss}G_{a\xi} + G_{as}G_{s\xi}}{G_{ss}G_{aa} - G_{as}^2} \tag{1.18}$$

$$\frac{ds}{d\xi} = \frac{-G_{aa}G_{s\xi} + G_{sa}G_{a\xi}}{G_{ss}G_{aa} - G_{as}^2} \tag{1.19}$$

where the denominator of both expressions is positive by the second order conditions.

Since the denominator needs to be positive, let us concentrate on the numerator of $\frac{da}{d\xi}$:

$$-\underbrace{[-\lambda_{ss} + \beta P_{ss}(V^E - V^U)]}_{\text{Gss: (-)}}\underbrace{[u_{cc}(c^u)g_a + \beta P_a \frac{\partial(V^E - V^U)}{\partial \xi}]}_{\text{Ga}\xi}$$

$$+\underbrace{\beta P_s \frac{\partial(V^E - V^U)}{\partial \xi}}_{\text{Gs}\xi\text{: (-)}}\underbrace{[-\lambda_{as} + \beta P_{sa}(V^E - V^U)]}_{\text{Gas: (-)}}$$

Having $G_{a\xi} < 0$ is a necessary condition to have $\frac{da}{d\xi} < 0$. In what comes, we look for a sufficient condition for $\frac{da}{d\xi} < 0$. The previous expression can be re-written as:

$$\underbrace{\lambda_{ss} u_{cc}(c^u) g_a}_{1:\,(-)} + \underbrace{\beta \frac{\partial (V^E - V^U)}{\partial \xi} [P_a \lambda_{ss} - P_s \lambda_{as}]}_{2:\,(+)}$$
$$\underbrace{-\beta P_{ss} [V^E - V^U] u_{cc}(c^u) g_a}_{3:\,(-)} \underbrace{-\beta^2 \frac{\partial (V^E - V^U)}{\partial \xi} [V^E - V^U][P_a P_{ss} - P_s P_{as}]}_{4:\,(+)} \tag{1.20}$$

The expression above is negative if the terms $1 + 2 < 0$ and $3 + 4 < 0$.

First condition: $1 + 2 < 0$

$\lambda_{ss} u_{cc}(c^u) g_a + \beta \frac{\partial (V^E - V^U)}{\partial \xi} [P_a \lambda_{ss} - P_s \lambda_{as}] < 0$ iff

$-u_{cc}(c^u) g_a > \beta \frac{\partial (V^E - V^U)}{\partial \xi} [P_a - P_s \frac{\lambda_{as}}{\lambda_{ss}}]$

Second condition: $3 + 4 < 0$

$-\beta P_{ss} [V^E - V^U] u_{cc}(c^u) g_a - \beta^2 \frac{\partial (V^E - V^U)}{\partial \xi} [V^E - V^U][P_a P_{ss} - P_s P_{as}] < 0$ iff

$P_{ss} u_{cc}(c^u) g_a + \beta \frac{\partial (V^E - V^U)}{\partial \xi} [P_a P_{ss} - P_s P_{as}] > 0$ iff

$u_{cc}(c^u) g_a + \beta \frac{\partial (V^E - V^U)}{\partial \xi} [P_a - \frac{P_s P_{as}}{P_{ss}}] < 0$ iff

$-u_{cc}(c^u) g_a > \beta \frac{\partial (V^E - V^U)}{\partial \xi} [P_a - P_s \frac{P_{as}}{P_{ss}}]$

Therefore, in order to satisfy both conditions we need:

$$-u_{cc}(c^u) g_a > \beta \frac{\partial (V^E - V^U)}{\partial \xi} \Big(P_a - P_s \cdot max\{ \frac{\lambda_{as}}{\lambda_{ss}}, \frac{P_{as}}{P_{ss}} \} \Big)$$

which is (1.6) in the main text. ■

If $P_{ss} = 0$, that is, if the probability of finding a job is linear with respect to s, Term 3 of Expression (1.20) above disappears, and also a part of Term 4. After some simplifications we are left with:

$$-u_{cc}(c^u)g_a > \beta \frac{\partial(V^E - V^U)}{\partial \xi}[P_a - P_s \frac{\lambda_{as}}{\lambda_{ss}} + P_{as} \frac{\lambda_s}{\lambda_{ss}}]$$

If $\lambda_{ss} = 0$, that is, if the cost of effort is linear with respect to s, Term 1 of Expression (1.20) above disappears, and also a part of Term 2. After some simplifications we are left with:

$$-u_{cc}(c^u)g_a > \beta \frac{\partial(V^E - V^U)}{\partial \xi}[P_a - P_s(\frac{-\lambda_{as}P_s}{\lambda_s P_{ss}} + \frac{P_{as}}{P_{ss}})]$$

The sign of $\frac{ds}{d\xi}$:

Since the denominator needs to be positive, let us concentrate on the numerator of $\frac{ds}{d\xi}$.

$$\begin{aligned} &\underbrace{-\beta P_s \frac{\partial(V^E - V^U)}{\partial \xi}}_{\text{-Gs}\xi\text{: (+)}} \underbrace{[u_{cc}(c^u)g_a + u_c(c^u)g_{aa} + \beta P_{aa}(V^E - V^U)]}_{\text{Gaa: (-)}} \\ &+ \underbrace{[-\lambda_{as} + \beta P_{sa}(V^E - V^U)]}_{\text{Gsa: (-)}} \underbrace{[u_{cc}(c^u)g_a + \beta P_a \frac{\partial(V^E - V^U)}{\partial \xi}]}_{\text{Ga}\xi} \end{aligned} \tag{1.21}$$

Note that $ds/d\xi > 0$ *could* be possible only when $G_{a\xi}$ is negative, which is a necessary condition to have $da/d\xi < 0$. But, even in that case, there are several terms pushing in the direction of having $ds/d\xi < 0$.

Proof of the Example:

In this case, the sufficient condition to have $\frac{da}{d\xi}$ is:

$$-u_{cc}(c^u)g_a > \beta \frac{\partial(V^E - V^U)}{\partial \xi}\Big(P_a - P_s \cdot \frac{P_{as}}{P_{ss}}\Big) \tag{1.22}$$

If $\xi = b$ the condition can be written as:

$$-u_{cc}(c^u)g_a > \frac{-u_c(c^u)}{r + P + \phi} \cdot \frac{P}{P}\Big(P_a - P_s \cdot \frac{P_{as}}{P_{ss}}\Big)$$

A more stringent condition than this one, is:

$$-u_{cc}(c^u)g_a > u_c(c^u)\Big(-\frac{P_a}{P} + \frac{P_s}{P} \cdot \frac{P_{as}}{P_{ss}}\Big)$$

Given the functional form of $P(a,s)$ (see Table 1.1), this condition can be rewritten as:

$$\frac{-u_{cc}(c^u)}{u_c(c^u)} g_a > \frac{\beta_2}{1-\beta_1} \tag{1.23}$$

If $\xi = A$, then (1.22) becomes:

$$-u_{cc}(c^u) g_a > \frac{u_c(c^e) - u_c(c^u)}{r + P + \phi} \Big(P_a - P_s \cdot \frac{P_{as}}{P_{ss}} \Big)$$

A more stringent condition than this one, is:

$$-u_{cc}(c^u) g_a > u_c(c^e) - u_c(c^u) \cdot \frac{-\beta_2}{1-\beta_1}$$

Which can be rewritten as:

$$\frac{-u_{cc}(c^u)}{u_c(c^u)} g_a > \frac{u_c(c^u) - u_c(c^e)}{u_c(c^u)} \cdot \frac{\beta_2}{1-\beta_1}$$

And a more stringent condition than this one, is (1.23). Therefore (1.23) is sufficient condition for $\frac{da}{d\xi} < 0$.

If the $u(c^u)$ and $g(a)$ are those of Table 1.1, then (1.23) can be written as:

$$\frac{\sigma}{b + Ga^{\gamma} - c_{min}} \cdot \gamma G a^{\gamma - 1} > \frac{\beta_2}{1-\beta_1}$$

Which after some manipulations can be rewritten as:

$$\sigma \gamma > a^{1-\gamma} \frac{\beta_2}{(1-\beta_1)G} (b - c_{min}) + \frac{\beta_2}{1-\beta_1} a \tag{1.24}$$

If $a < 1$ then $a^{1-\gamma} > a$. Given this, a more stringent condition than (1.24) is

$$\Big[\frac{(1-\beta_1)\sigma\gamma}{\beta_2} \cdot \frac{G}{b - c_{min} + G} \Big]^{\frac{1}{1-\gamma}} > a$$

Given that $\gamma < 1$, a more stringent condition is (1.7) in the main text.

If $a > 1$ then $a^{1-\gamma} < a$. Given this, a more stringent condition than (1.24) is (1.7) in the main text. ■

1.A.2 Extensions to the Baseline Model [BM]

For simplicity, in the extensions below we set $A = 0$. If $A > 0$, w should be replaced by $w + A$ and b by $b + A$.

Model with Finite entitlement [FE]

The lifetime values in unemployment and in employment solve respectively the following Bellman equations:

$$[FE] = \begin{cases} V_t^U = \max\limits_{s_t, a_t} \quad u(c_t^u) - \lambda(s_t, a_t) + \beta[P(s_t, a_t)V_{t+1}^E + (1 - P(s_t, a_t))V_{t+1}^U] \\ V_t^E = u(c_t^e) + \beta[\phi V_{t+1}^U + (1 - \phi)V_{t+1}^E] \end{cases} \tag{1.25}$$

where $c_t^u = b + g(a_t)$ if $t \leq B - 1$ and $c_t^u = g(a_t)$ if $B - 1 < t < T$, $c_t^e = w - \tau$.

Subject to: $c_t^u \geq c_{min}$, $V_{t+1}^E - V_{t+1}^U \geq 0$, $a_t \geq 0$, $s_t \geq 0$ and $V_T^U = V_T^E = 0$

The First Order Conditions:

$$\begin{aligned} G_a &= u_c(c_t^u)g_a(a_t) - \lambda_a + \beta P_a[V_{t+1}^E - V_{t+1}^U] = 0 \\ G_s &= -\lambda_s + \beta P_s[V_{t+1}^E - V_{t+1}^U] = 0 \end{aligned}$$

Model with Incomplete Financial Markets [FM]

Denoting by k_t the level of assets in each period, the lifetime values in unemployment and in employment solve respectively the following Bellman equations:

$$[FM] = \begin{cases} V_t^U = \max\limits_{s_t, a_t, k_{t+1}} \quad u(c_t^u) - \lambda(s_t, a_t) + \beta[P(s_t, a_t)V_{t+1}^E + (1 - P(s_t, a_t))V_{t+1}^U] \\ V_t^E = \max\limits_{k_{t+1}} \quad u(c_t^e) + \beta V_{t+1}^E \end{cases} \tag{1.26}$$

where $c_t^u = b + g(a_t) + (1 + r)k_t - k_{t+1}$ and $c_t^e = w - \tau + (1 + r)k_t - k_{t+1}$.

Subject to: $c_t^u \geq c_{min}$, $V_{t+1}^E - V_{t+1}^U \geq 0$, $a_t \geq 0$, $s_t \geq 0$, $V_T^U = V_T^E = k_T = 0$ and $k_{t+1} \geq L$. This last condition can be interpreted as a capital market imperfection.[18]

Following the literature, let $\phi = 0$ the setup is deterministic when the agent is employed. The optimal consumption path satisfies the Euler equation:

$$u_c(c_t^e) = \beta(1+r)u_c(c_{t+1}^e)$$

With $\beta = \frac{1}{1+r}$, the agent entering in employment in period t keeps the same level of consumption until T.

In order to find c_t^e, let us consider the budget constraint of the employed agent hired in period t with an initial level of assets of k_t: $c_t^e = w - \tau + (1+r)k_t - k_{t+1}$. This expression can be rewritten as: $k_t = \frac{c_t^e - (w-\tau) + k_{t+1}}{1+r}$. By iterating forward (that is, by replacing $k_{t+1} = \frac{c_{t+1}^e - (w-\tau) + k_{t+2}}{1+r}$ on the previous expression, and then replacing k_{t+2}, etc...) and since $k_T = 0$, we have that:

$$k_t(1+r) = c_t^e - (w-\tau) + \frac{c_t^e - (w-\tau)}{1+r} + ... + \frac{c_t^e - (w-\tau)}{(1+r)^{(T-1)-t}} = [c_t^e - (w-\tau)] \sum_{j=0}^{(T-1)-t} \frac{1}{1+r}$$

which implies that, as long as r is different from zero:

$$c_t^e = k_t \left(\frac{r}{1 - (\frac{1}{1+r})^{(T-1)-t+1}} \right) + w - \tau$$

Now, c_t^e is a function of t because it depends on the moment in which the agent starts working. Moreover, since consumption is constant from the moment in which the agent is employed:

[18] As highlighted by Chetty (2008), it is easy to show that V_t^E is concave, because there is no uncertainty following reemployment; however, V_t^U *could be* convex. Nevertheless, this is not the case in our simulations -non concavity never arises in Chetty (2008) nor in Lentz and Tranaes (2005) either.

$$V_t^E = \sum_{j=0}^{(T-1)-t} \beta^j u(c_t^e) = u(c_t^e) \frac{1-\beta^{(T-1)-t+1}}{1-\beta}$$

In unemployment, the First Order Conditions can be written as:

$$\begin{aligned} G_{a_t} &= u_c(c_t^u) g_a(a_t) - \lambda_a + \beta P_a [V_{t+1}^E - V_{t+1}^U] = 0 \\ G_{s_t} &= -\lambda_s + \beta P_s [V_{t+1}^E - V_{t+1}^U] = 0 \\ G_{k_{t+1}} &= -u_c(c_t^u) + \beta \left(P(s_t, a_t) \frac{\partial V_{t+1}^E}{\partial k_{t+1}} + (1 - P(s_t, a_t)) \frac{\partial V_{t+1}^U}{\partial k_{t+1}} \right) = 0 \end{aligned}$$

where:

$$\frac{\partial V_{t+1}^E}{\partial k_{t+1}} = u_c(c_{t+1}^e) \frac{1-\beta^{(T-1)-t}}{1-\beta} \frac{\partial c_{t+1}^e}{\partial k_{t+1}} = \frac{u_c(c_{t+1}^e)}{\beta}$$

and:

$$\frac{\partial V_{t+1}^U}{\partial k_{t+1}} = u_c(c_{t+1}^u)(1+r) = \frac{u_c(c_{t+1}^u)}{\beta}$$

Which allows to re-write $G_{k_{t+1}}$ as:

$$G_{k_{t+1}} = -u_c(c_t^u) + P(s_t, a_t) u_c(c_{t+1}^e) + (1 - P(s_t, a_t)) u_c(c_{t+1}^u) = 0$$

Model with Stochastic Wage Offers [SWO]

Wage offers are now a random draw from a known distribution with support $[\underline{w}, \overline{w}]$ CDF $H(w)$ and density function $h(w)$. The agent follows a stopping rule: if the wage offer is higher than the reservation wage, x_t, she accepts the offer, otherwise, she rejects it. The exit probability out of unemployment is $P(s_t, a_t) * (1 - H(x_t))$. The lifetime values in unemployment and in employment solve respectively the following Bellman equations:

$$[SWO] = \begin{cases} V_t^U = \max\limits_{s_t,a_t,x_t} \quad u(c_t^u) - \lambda(s_t,a_t) + \beta[P(s_t,a_t)V_{t+1}^\theta + (1-P(s_t,a_t))V_{t+1}^U] \\ V_t^E = u(c_t^e) + \beta V_{t+1}^E \end{cases} \tag{1.27}$$

where $V_{t+1}^\theta = E_w max\{V_{t+1}^E(w), V_{t+1}^U\} = \int_0^{x_t} V_{t+1}^U dH(w) + \int_{x_t}^{\bar{w}} V_{t+1}^E(w) dH(w)$

Subject to: $c_t^u \geq c_{min}$, $a_t \geq 0$, $s_t \geq 0$, $V_T^U = V_T^E = 0$.

V_t^U can be rewritten as:

$$V_t^U = \max_{s_t,a_t,x_t} \quad u(c_t^u) - \lambda(s_t,a_t) + \beta\left[P(s_t,a_t)\int_{x_t}^{\bar{w}} (V_{t+1}^E(w) - V_{t+1}^U) dH(w) + V_{t+1}^U\right]$$

The First Order Conditions can be written as:

$$G_{a_t} = u_c(c_t^u) g_a(a_t) - \lambda_a + \beta P_a \int_{x_t}^{\bar{w}} (V_{t+1}^E(w) - V_{t+1}^U) dH(w) = 0 \tag{1.28}$$

$$G_{s_t} = -\lambda_s + \beta P_s \int_{x_t}^{\bar{w}} (V_{t+1}^E(w) - V_{t+1}^U) dH(w) = 0 \tag{1.29}$$

$$G_{x_t} = \beta P(s_t,a_t)\left(V_{t+1}^E(x) - V_{t+1}^U\right) h(x_t) = 0 \tag{1.30}$$

1.B Optimal Unemployment Insurance

In this Appendix we characterize b^* in the [BM] setting. b^* maximizes the lifetime utility of the unemployed subject to a budget-balanced condition.

To construct the budget-balanced condition we transpose the approach of Shimer and Werning (2007) to a discrete time setup. Let C^U be the net actualized cost of the UB scheme for a job seeker, and C^E be the net actualized cost of a wage earner written in a recursive way. C^U and C^E solve the following Bellman equations:

$$C^U = b + \beta[P C^E + (1-P) C^U] \tag{1.31}$$

$$C^E = -\tau + \beta[\phi C^U + (1-\phi) C^E] \tag{1.32}$$

The net actualized cost of the job seeker should be zero. Then, by (1.32), $C^E = \frac{-\tau}{1-\beta(1-\phi)}$. Plugging this expression and $C^U = 0$ in (1.31) yields:

$$\frac{b}{\beta P} = \frac{\tau}{1-\beta(1-\phi)} \quad \Leftrightarrow \quad \tau = \frac{1-\beta(1-\phi)}{\beta} b\, D, \tag{1.33}$$

We are now ready to compute b^*, i.e, the level of b that maximizes V^U subject to (1.33).

$$\max_b V^U = \quad u(c^u) - \lambda(s,a) + \beta[PV^E + (1-P)V^U] \tag{1.34}$$

The problem is stationary, therefore, V^U can be written as:

$$V^U = \frac{1-\beta(1-\phi)}{(1-\beta)(1-\beta+\beta\phi+\beta P)} \left(u(c^u) + \frac{\beta P}{1-\beta(1-\phi)} u(c^e) - \lambda(s,a) \right)$$

We need to look only at the direct impact of a change of b, because the envelope conditions eliminate the first-order effects of the behavioral responses (Chetty, 2006). Differentiating the previous expression with respect to b gives:

$$\frac{dV^U}{db} = \quad \frac{1-\beta(1-\phi)}{(1-\beta)(1-\beta+\beta\phi+\beta P)} \left(u'(c^u) - \frac{\beta P}{1-\beta(1-\phi)} u'(c^e) \frac{d\tau}{db} \right) \tag{1.35}$$

Take $\frac{dV^U}{db} = 0$, and note from (1.33) that $\frac{d\tau}{db} = \frac{1-\beta(1-\phi)}{\beta} \left(\frac{-1}{P^2} \frac{dP}{db} b + \frac{1}{P} \right)$. Plugging this in (1.35) yields the following implicit equation:

$$\frac{u'(c^u) - u'(c^e)}{u'(c^e)} = \varepsilon_{D,b}, \quad \text{where} \quad \varepsilon_{D,b} = \frac{-b}{P} \frac{dP}{db}. \tag{1.36}$$

Chapter 2

Income Effect on Labor Outcomes for People Living in Poverty: the case of PROGRESA[1]

Abstract This chapter studies the income effect of cash transfers on adult labor outcomes. I use data of PROGRESA, a large cash transfer program in Mexico that provides money to households subject to the condition that school aged kids go to school. I focus on a subsample of the eligibles for whom the conditionality is not a constraint. This allows me to shut-down the substitution effect that the conditionality of the transfer may induce. In practice, it is *as if* PROGRESA was an *un*conditional cash transfer for this subpopulation. Contrary to standard beliefs, I find that the income effect on labor outcomes is not negative.

[1]I would like to thank Bruno Van der Linden, Muriel Dejemeppe, William Parienté, Marion Collewet and Patrick Arni for their comments and suggestions, and the participants of the Economic School of Louvain 2018 Doctoral Workshop, the 2018 Belgian Day for Labor Economists, the Coloquio de Investigación of the School of Economics of the Universidad de Costa Rica (August 2018) and the 2019 ISI Delhi Conference on Economic Growth and Development for their comments. The usual disclaimer applies.

2.1 Introduction

According to standard job-search theory, providing unconditional cash to people has detrimental effects on the probability of finding a job (Chetty, 2008). In the neo-classical theory of labor supply it is standard to assume that leisure is a normal good (see, among many others Becker, 1965, Gahvari, 1994, Cahuc et al., 2014). This implies that if agents receive unearned income, part of the money will be used to buy leisure. In both theories there is a negative "income effect" on labor outcomes. For developed countries there is empirical evidence that supports these theoretical predictions (Cesarini et al., 2017, Picchio et al., 2018, Chetty, 2008, Card et al., 2007, Basten et al., 2014, Schirle, 2015, Gonzalez, 2013). All this reinforces the belief of economists, policy makers, and the public at large, that unconditional cash transfers (UCT) generate incentives to work less (for data about beliefs in different countries, see for instance Banerjee et al., 2017).

Nevertheless, poor people in developing countries face difficulties to meet basic needs. Cash transfers in those contexts could possibly be used by the recipients to cope with these difficulties. Therefore, they could allow them to be more willing or capable to work. In fact, there is some recent empirical evidence showing that UCT targeted to poor households in developing countries do not have detrimental effects on labor outcomes of prime-age adults and could even have positive effects (Ardington et al., 2009, Haushofer and Shapiro, 2016, Salehi-Isfahani and Mostafavi-Dehzooei, 2018, Franklin, 2018). This evidence questions the standard properties of canonical job-search and neo-classical models of labor supply (Baird et al., 2018b, Bosch and Manacorda, 2012). And it is useful because it suggests that the background conditions (in particular, the level of income and the degree to which basic needs are covered) are crucial to understand whether receiving cash unconditionally is or not detrimental to work.

The purpose of this chapter is to contribute to this literature using data of PROGRESA, a randomized control trial (RCT) providing a large (equivalent to 20% of the average wage of the household head) and long-lasting cash transfer to households in rural Mexico, conditional on kids going to school. This rich data set has already been used to analyze the effect of PROGRESA on adult labor outcomes. And it has been found that it did not affect labor outcomes negatively (Skoufias et al., 2001, Skoufias and di Maro, 2008, Rubio-Codina, 2010, Alzua et al., 2013, Banerjee et al.,

2017). However, as just said, PROGRESA is a *conditional* program. Thus, it is normal to expect the conditionality to play some role in preventing negative effects on labor outcomes of the adult recipients. In fact, a program offering cash subject to the condition that school age kids go to school, induces a "cross-substitution effect" on adults (Rubio-Codina, 2010, Parker and Todd, 2017). That is, as a response to the program, adults might work more to substitute for child's work. Thus, it has been argued, "for adults, the program has ambiguous effects on leisure and time spent in work activities because the income effect and the cross-substitution effect of school subsidies work in different directions" (Parker and Todd, 2017) and because of that reason "the effects of a conditional transfer are likely to differ compared with an unconditional cash transfer" (ibid).

But then, would PROGRESA still be non detrimental to adult work if the analysis was restricted to a subsample not affected by the conditionality of the program? For such a subsample the "cross-substitution effect" would no longer be present. Thus, PROGRESA would induce (only) an income effect. This chapter intends to answer that question by restricting the dataset of PROGRESA to a subsample (exogenously defined) of adults for whom, I claim, the conditionality was not binding. Thus, in practice, for this subsample, it is as if PROGRESA was an *un*conditional cash transfer.

I focus on the subsample of adults living in households without kids between 12-17 years old. Since school attendance for kids below 12 years was almost universal (see Fig.2.1), the school conditionality of PROGRESA was not binding for them. That is, it did not induce them (nor their parents) to change their behavior. Throughout the chapter I focus on this subsample and look at the impact of PROGRESA on three different indicators: (1) labor force participation in all types of work, (2) labor force participation in day agricultural and nonagricultural employment (DANAE), a measure that excludes those who are self-employed or who work without receiving any payment and (3) the number of hours worked per week. I find, using a difference-in-differences (DiD) empirical strategy, that PROGRESA did not induce this subsample of adults to work less. If anything, the results on DANAE (which is closer to salaried work) are positive.

The remainder of the chapter is organized as follows: It starts with a literature review. Section 2.3 briefly describes the main features of PROGRESA, its design, and the data from the available surveys. Section 2.4 defines and characterizes the sample with which I work throughout the chapter. Sec-

tion 2.5 is the main section, where I present the econometric specification and the impact of PROGRESA on work, DANAE, and the number of hours worked per week. Section 2.6 discusses (and tries to rule out) threats to the identification. Finally, Section 2.7 concludes.

2.2 Literature Review

This section starts by presenting empirical evidence about the effect of UCT in developed countries in contexts in which the recipients do not live in poverty. Further, it discusses additional mechanisms that could be in place in a context of poverty. Finally, it sums up empirical evidence of the effects of cash transfers in contexts of scarcity. As stated previously, the aim of the current work is to contribute to the latter literature.

As remarked by Schirle (2015) few articles analyze the effect of demogrants (grants awarded on purely demographic principals, and thus in practice, unconditional) on labor supply, since many of the existing cash transfer programs have conditions or requirements that affect labor supply incentives, and therefore are substantially different from unconditional transfers. The findings of the articles that have successfully analyzed the effect of unconditional transfers in developed countries, for households that do not live in poverty, tend to find results that are consistent with the predictions of the standard job-search model or the canonical model of labor supply. That is, they find that people receiving unconditional money tend to work less, even if the magnitude of the reduction is not necessarily big.

Some papers have looked at this by using data of lottery winners. For instance, Cesarini et al. (2017) look at Swedish data and Picchio et al. (2018) at Dutch data. Both papers find that winning the lottery reduces pre-tax earnings by a small magnitude during several years. Yet, as highlighted by Gonzalez (2013), their results may not be typical responses to increases in other forms of unearned income. Moreover, these studies might not be representative of the overall population.

Other studies have looked at the effect of providing cash to people by analyzing data of severance payments (which are received on top of the unemployment compensations). Chetty (2008) does it for the US, Card et al. (2007) for Austria and Basten et al. (2014) for Norway. These studies find

that the recipients of the transfers increased their duration in unemployment. Again, one should keep in mind that the sample of laid off people can be highly selective.

Still other set of articles has looked at the effects of family allowances. In fact, family allowances (which are in place in most developed countries) could act as a sort of unconditional transfers for families, at least in so far as the transfers do not induce the couple to have (more) kids. That is, in practical terms, the benefit is exogenous to the households given the presence of children (Kooreman, 2000).

For example, Schirle (2015) looks at the effect of the universal child care benefit (UCCB) introduced in 2006 by the Government of Canada. This program gives benefits of $100 (Canadian dollars) to families per each kid below the age of 6. With a DiD estimation, and data from 2003-2009, she finds a small but negative effect of the UCCB on both parents labor supply (1.3 percentage points reduction in the extensive margin for married women and 0.4 percentage points for men). Similarly, Gonzalez (2013), using a regression discontinuity design, looks at the effect of a one-time cash transfer of 2500€ in Spain that was paid to women having a baby from July 2007 onward. She finds that women who received the benefit were 4 percentage points less likely to be working when the baby had 12 months as compared to those who did not receive the transfer.

Moreover, a recent article studies the effects of a sustained unconditional cash transfer in Alaska. Since 1982 Alaskan residents (of any age) have been entitled to a yearly cash dividend from the Alaska Permanent fund which in recent years is of around $2000 per person. Using a synthetic control method (which mixes DiD estimators and elements of matching), Jones and Marinescu (2018) do not find any significant effect on employment (i.e, on the extensive margin), but the find an increase of 1.8 percentage points in the share of Alaskans who work in par-time jobs.

However, the effect that UCT have on labor outcomes might be substantially different for people living in poverty. In such a context one could expect them to have positive effects that, overall, might outweigh the typical negative effect emphasized by the neo-classical labor supply model. One reason for this to happen is the one put forward, many years ago, by Leibenstein (1957): "the amount of work that the representative laborer can be expected to perform depends on his energy level, his health, and

his vitality, which in turn depend on his consumption level and most directly on the nutritive value of his food intake". This might be particularly true in a developing rural economy in which work requires a high-energy expenditure, as emphasized by Strauss, 1986. Another possible reason is that the money could be used to lessen liquidity constraints in contexts of incomplete financial markets where the access to credit is nearly impossible (Alderman and Yemtsov, 2013, Banerjee et al., 2019). Still, another mechanism that could be in place for people living in poverty is the one analyzed by Shah et al. (2012), Mullainathan and Shafir (2013), Mani et al. (2013), Shah et al. (2015), and Schilbach et al. (2016). According to them, living in a context of scarcity taxes cognitive resources and this might be detrimental for other aspects of life. Therefore it could be argued that cash transfers, provided to people living in poverty, might lessen the cognitive capacity constraints and thus have a positive effect on labor outcomes (Mesén Vargas and Van der Linden, 2019).

In fact, there is some recent empirical evidence showing that providing unconditional cash to agents in poverty is not detrimental to their labor outcomes. Ardington et al. (2009) analyze the effect of social (means-tested) old-age pension on the labor supply of the prime age members of the household in South Africa. Their results suggest that the pension plays a role in lessening both credit and childcare constraints, allowing prime-aged adults to migrate for work. Haushofer and Shapiro (2016) study the impact of an UCT on poor people in Kenya, using a RCT. The transfer was relatively high (at least twice the average monthly household consumption in the area) and paid over a short period. They look at the effects of these transfers on a large number of outcomes. Regarding labor supply, they find that the transfers did not reduce the probability of having a casual job or a salaried job. Moreover, they find a positive effect on the number of income-generating activities reported by the household. Franklin (2018) develops an experiment in Ethiopia where he provides young jobless people with money (intended to cover transportation costs). He finds that four months after the start people who received the subsidy were seven percentage points more likely to have a permanent work. The effect was stronger for relatively poor and cash constrained people. Salehi-Isfahani and Mostafavi-Dehzooei (2018) use a DiD strategy to analyze the effect of an UCT that replaces energy subsidies in Iran starting in 2011. The transfers boosted the incomes of poor households. Since the previous subsidy was regressive, poor households were more than compensated with the

new policy. Transfers amounted to 29% of the median household income. The authors look at the average effects and at the effects on the bottom 40% of the income distribution. They find no evidence that cash transfers reduced labor outcomes. To the contrary, they find positive effects on the labor supply of women.

The current chapter intends to contribute to this literature by exploiting high quality RCT data and looking at the effects on adults' labor outcomes of a long-lasting, generous and periodical transfer provided to thousands of recipients living in poverty.

2.3 The PROGRESA Experiment

2.3.1 Brief Description

PROGRESA is a Spanish acronym for "Program of Education, Health and Nutrition". It started in 1997 in rural villages in Mexico and changed its name to "Oportunidades" in 2000.[2] It targeted benefits directly to people living in extreme poverty in rural areas of Mexico. As its name suggests, the program had a multiplicity of objectives. Its aim was to improve the education, health, and nutrition status of poor families.

Eligibility to the program was determined in two main stages. First, 506 localities were selected using a means index based on census data. Second, within the selected localities, households were chosen using survey data collected at the household level. In this second step, the income of the household was considered first to perform a preliminary classification. Then, a discriminant analysis was performed to incorporate other household characteristics. The underlying motive was to use a multi-dimensional approach to poverty. Households classified as "poor" were eligible to receive the benefits. Skoufias et al. (1999) provide a detailed description of the selection procedure and an evaluation of the methods.[3]

[2] Since I use data from 1997 to 1999, I refer to the program as PROGRESA, the name it had during that period.

[3] The original classification scheme classified around 52% of the households of the selected localities as poor. I use this original classification. By July 1999 PROGRESA added new households to the list of beneficiaries since it was felt that some households were unduly excluded. As a result of this process (called "densification") 78% of the

Cash transfers were given every two months to the female head of the household (typically the mother of the kids in school age, if any). They had two main components. First, the nutritional grant was received by all beneficiary households conditional on attending medical check-ups, which were free.[4] Second, an educational grant was provided to mothers of kids younger than 18 years old conditional on attending school a minimum of 85% of the time and on not repeating a grade more than twice.[5] The educational grant varies according to the grade, and for kids in secondary school according to gender as well. On top of that, kids received an annual stipend to pay for school materials. Table 2.1 shows the transfer structure in nominal pesos in three different moments. To prevent individual migration into the household only kids who were living in the household at the time of the initial household survey were eligible for the school transfers (Gertler et al., 2012).

sample was classified as poor (Skoufias, 2005).

[4]According to Skoufias (2005), people aged 17 or older are required to have one annual check-up; kids between 5 and 16 two check-ups a year; kids between 2 and 4 three check-ups a year; kids between 4 months and 24 months eight check-ups. Finally, babies from 0 to 4 months are required to have three check-ups.

[5]Kids were required to maintain an attendance record of 85% or better. Parents were supposed to receive a form (E1), the form was taken to the teacher who signed for the register of the child, and parents were supposed to return the signed E1 forms to the PROGRESA officials. Nevertheless, de Brauw and Hoddinott (2011) report that some households did not receive the E1 form but, according to administrative records, received the educational grant.

Table 2.1: Monthly Amount of Transfers in Real Pesos of Oct 1998

	Oct 1998	May 1999	Nov 1999
Education Grant in Primary School per Kid			
Third Grade	70	68	69
Fourth Grade	80	81	82
Fifth Grade	100	104	108
Sixth Grade	135	135	142
Education Grant Secondary School per Kid			
Girls			
Seventh	210	212	216
Eight	235	234	242
Ninth	255	257	263
Boys			
Seventh	200	198	207
Eight	210	212	216
Ninth	220	221	229
School Materials per Kid (once a year)			
Primary (September)			181
Primary (January)		41	
Secondary (September)	170		177
Nutritional Grant (per Household)	100	104	108
Maximum Grant (per Household)	625	626	647

Note: The data to construct this table is taken from Skoufias (2005). Amounts are in real pesos of Oct 1998 per kid. According to the Bank of Mexico, the Consumer Price Index in October 1998 was 50.4, in May 1999 it was 55.94, and in November 1999 it was 58.43.

2.3.2 Design and Data Collection

Due to budgetary constraints the Government did not enroll all eligible families at the same time. The full sample used in the evaluation of PROGRESA consists of a panel data of 24000 households in 506 localities in seven states. From the 506 localities 320 were randomly assigned to treatment and 186 to control (Behrman and Todd, 2000 analyzed the quality of the randomization and concluded that treatment and control samples were, all in all, very well balanced). Eligible households (the ones classified as poor) in treatment localities started to receive the benefits in July 1998, whereas the eligible households in control localities started to receive the benefits by December 1999 (Skoufias, 2005). Households in control villages were not informed that they would receive the benefits until two months before the start. Attanasio et al. (2011) explicitly test for anticipation effects and find no evidence. Todd and Wolpin (2006) report that they find no evidence of anticipation either.

Skoufias (2005), using administrative data, reports that out of the 7837 households classified as poor in treatment localities, 478 households did not receive any transfers. So the take-up rate was 93.90%.

Once enrolled, households received the benefits for three years, conditional on meeting the program requirements stated above. As explained by Gertler et al. (2012), after the three years, they were "recertified", that is, their living conditions were reassessed; if they were recertified as eligible, then they continued receiving the benefits for three more years, until the next recertification. If not, they were granted the benefits for six more years before being phased off the program. This means that eligible households in treated villages could expect to receive the benefits for at least nine years. This was explicitly designed to minimize disincentives to work, as stated by Schultz (2004), but also to minimize administrative costs and difficulties related with ascertaining precise income levels in data-poor environments (Banerjee et al., 2017).

Five household surveys were collected, ENCASEH[6] in October 1997 (S1), ENCEL[7] in March 1998 (S2), in October 1998 (S3), in May 1999 (S4) and in November 1999 (S5). The first two were collected at baseline, before

[6] Encuesta de Características Socioeconómicas de los Hogares.
[7] Encuesta de Evaluación de los Hogares Rurales.

the start of PROGRESA, and the last three after the start of the program. However, the second survey does not include any data related to labor outcomes. Therefore, like Parker and Skoufias (2000) and Skoufias and di Maro (2008) I do not use that survey in my analysis. Throughout the chapter t refers to time, where $t \in \{1, 3, 4, 5\}$ corresponds to the timing of each of the relevant surveys. All households, eligible and non-eligible, were surveyed. For most of the analysis, I will only use data of eligible (poor) households in treated and non-treated localities; I will only use data of non-eligible people for falsification checks.

Regarding attrition, there is information for just 4.94% of people before the start of the program (in S1) but not after. The percentage among the treated is 4.99%, among the non-treated 4.84%, the difference of 0.15% is not significant. Moreover, a joint F-test (for eleven baseline characteristics)[8] shows that attriters are not significantly different depending on whether they are treated or not. Instead, 30.95% of people cannot be followed throughout the four surveys. The percentage among the treated is 31.30%, among the non-treated 30.36%, the difference of 0.94% is not significant. Given that the percentage is big and that a joint F-test (for the same eleven characteristics) rejects equality between those who can be followed through the four surveys and those who cannot, I proceed like Schultz (2004) does and report all the results both for the "panel" (agents that can be observed four times) and the "pooled" (all observations without missing data) samples.[9]

[8] Sex, whether the agent works, has health insurance, is or not is a household head, marital status, education, type of work, number of people living in the household, hours worked per week, age, and means index.

[9] Attriters, as compared with people that can be followed throughout the four samples, are different in many characteristics at baseline: they are more often men, more educated, work more, more of them have a DANAE, are younger, more often do not live together as a couple, fewer of them are household heads, live in bigger households and are marginally less poor.

2.4 Data

2.4.1 Sample Selection Criteria

In October 1997, before the start of PROGRESA, 97.6% of kids between 7 and 11 years were already attending school. At the age of 12, the attendance rate sharply decreases. Fig.2.1 shows the school attendance rate by age before the start of PROGRESA for eligible (poor) kids living in treatment and control localities. Kids start attending elementary or primary school at the age of 5-6 years (most of them at the age of 6), therefore the age of 12 coincides for most kids with the transition from primary school (grades 1 to 6) to junior secondary school (grades 7 to 9).

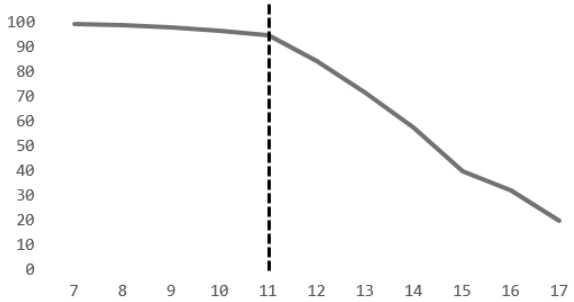

Figure 2.1: **School Assistance by age**

The graph shows the attendance rate by age, from 7 to 17 years old, for poor people in treatment and control localities. I use information from ENCASEH 1997 survey and include only observations without missing school attendance data.

School attendance was almost universal before the start of the program for kids below 12 years, which means that in practice the conditionality imposed by PROGRESA was not a binding constraint for them: most of these kids did not change their behavior to meet the imposed conditions. This has been acknowledged by several authors. For instance, Todd and Wolpin (2006) write "Because attendance, in the absence of any subsidy, is almost universal through the elementary school ages, subsidizing attendance at

the lower grade levels, as under the existent program, is essentially an income transfer". Attanasio et al. (2011) write "... the grant hardly changes their behaviour in the first place because almost all children go to school below grade 6, making it an unconditional transfer for that age group". Attanasio and Lechene (2014) write "In practice, nearly all children go to primary school. (...) for households with children who have finished primary school, the conditions might be binding". Finally, de Brauw and Hoddinott (2011) write "For children continuing primary school (having completed grades 3, 4 or 5), there is no evidence that conditionality has a significant effect on school enrollment. We may not find an effect of conditionality at these grade levels in part because almost all children were already completing these grades."[10]

I claim that in households *without* kids aged between 12 and 17 years, the effect of PROGRESA on adults' labor outcomes is essentially an income effect. In a vast majority of these households school-aged children were already going to school before the start of the program. That is, the conditionality of PROGRESA did not induce them to modify their behavior. Therefore adults were not induced themselves to modify their time allocation through a cross-substitution effect.

In order to define my sample, I create a variable called "$sec_{i,t}$" (sec means secondary school).

Definition: I define $sec_{i,t} = 0$ if agent i lives at time t in a household in which:

1. There has been no kid between 12 and 17 years since Oct 1997 ($t = 1$) and up to t, **and**
2. There has been no kid who meets the requisites to be in secondary school since Oct 1997 ($t = 1$) and up to t.[11]

[10] Schultz (2004) finds that the impact of PROGRESA in the school attendance rate of kids in primary school is positive but small. The magnitude of this effect is smaller than one percentage point for his panel sample (kids that can be observed throughout all the surveys) and slightly higher than one percentage point for his pooled sample (sample of all valid child observations).

[11] To determine whether a kid meets the requisites to be in secondary school, I use information about completed grades and attendance at baseline, $t = 1$, and I move it forward assuming no repetition and no dropout.

If I do not observe any member in t in a household, I assume that in t they had a kid of ages 12-17.

If any of the two conditions is not satisfied, then $sec_{i,t} = 1$. The variable "$sec_{i,t}$" is exogenous, i.e, it is not affected by PROGRESA, because it depends only on the age of the members of the household and on information collected at baseline (before the start of the program).

Having $sec_{i,t} = 0$ means that the agent lives in a household which never, up to t, received an educational transfer for a kid aged 12 and above or who is in secondary school. That is, the conditionality of PROGRESA did not affect the behavior of the person in t nor in previous periods. One could fear that *future* conditionality may affect the present decisions of the adults of the household.[12] In order to address this concern, in a robustness check presented in Appendix 2.B, I restrict the definition of $sec_{i,t} = 0$: I change the age range of the definition so that it reads: "there has been no kid of ages between **11** and 17 since Oct 1997 ($t = 1$) and up to t". Arguably, future conditionality is less problematic if it is far away in time. As reported in Appendix 2.B, all the results hold qualitatively when I replicate the estimations for this restricted subsample.

Fig.2.2 shows graphically the design of PROGRESA and the groups that I use to identify its effects. Previous studies analyzed the effect of PROGRESA by comparing the outcomes of poor people living in treated localities with the ones of poor people living in control localities. The novelty of my analysis is to focus on a sample that, I claim, is affected by PROGRESA only through an income effect. That is, I focus on observations for which $sec_{i,t} = 0$ (highlighted in Fig.2.2).

In my sample, I exclude all people who were younger than 18 at $t = 1$. I also exclude all women older than 68 and men older than 72 (according to the OECD, 2017 these are the effective ages of retirement in Mexico). I drop all observations with missing relevant data, and call the remaining ones "valid observations".

As stated previously, I report the results for two different samples: (1) the pooled sample: composed by all valid observations (37666 observations) with $sec_{i,t} = 0$ and (2) the panel sample: composed by valid observations of people with $sec_{i,t} = 0$ throughout the four surveys (26164 observations).

[12] This would be the case, for example, if the father of an 11-year-old kid was planning to drop the kid out of school next year, but thanks to PROGRESA he changed his mind. Knowing that the kid will attend secondary school next year (instead of, say, work with him in the family business) may have implications on his labor outcomes *today*.

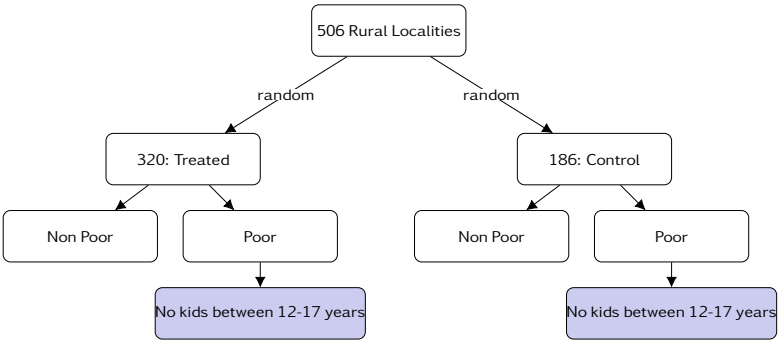

Figure 2.2: **Design of PROGRESA**

Out of the 506 chosen rural localities, 320 were assigned to treatment and 186 to control. Only eligible (poor) people in treated localities received the transfers during the analyzed periods of 1998-1999. In the core of this chapter, I analyze the effect of PROGRESA on the labor outcomes of eligible (poor) adults for which $sec_{i,t} = 0$, that is for which (1) there have been no kid between 12 and 17 years since Oct 1997 ($t = 1$) and up to t, **and** (2) there have been no kids who meet the requisites to be in secondary school since Oct 1997 ($t = 1$) and up to t. Groups with $sec_{i,t} = 0$ are highlighted in the diagram.

2.4.2 Outcome Variables

In this subsection I describe the three outcome variables that will be used in the empirical estimations of Section 2.5.

Labor force participation ($Work_{i,t}$) is a dummy variable equal to 1 if agent i reports in t that she/he worked during the last week and it is equal to 0 otherwise. The four surveys include a question that asks the person whether, during last week, she/he (1) worked, (2) had a job but did not work, (3) worked in a family business without receiving any payment, (4) did not work. If agent i in t answered yes to (1), (2) or (3), then $work_{i,t} = 1$. If the agent reported that she/he did not work in the previous question, then a verification question asks whether she/he was involved in selling products, helping in some business, built products for sale, helped to work in agricultural activities, or ironed/washed clothes for a pay. If agent i performs any of these activities in t, then $work_{i,t} = 1$.

Labor force participation in DANAE ($DANAE_{i,t}$) is a dummy variable equal to 1 if agent i reports in t to have day agricultural employment or to be a non-agricultural employee, and is equal to 0 otherwise (i.e, if the person reports that she/he does not work or has another kind of work). The four surveys include a question about the main occupation at work for those for whom $work_{i,t} = 1$. This question contains eight alternatives: (1) agricultural worker (2) nonagricultural employee (3) self-employed (4) business owner (5) worker in a family business (without receiving any payment) (6) worker without payment (non including family businesses) (7) member of a cooperative (8) ejidatarios.[13] If agent i answered (1) or (2) to this question in t, then $DANAE_{i,t} = 1$. $DANAE_{i,t} = 0$ if agent i reports in t that she/he performs activities (3) to (8) or if she reports that she/he does not work.[14]

The number of hours worked per week ($Hours_{i,t}$) is a continuous outcome variable. The question about the number of hours worked per week was asked differently before and after the start of PROGRESA. In $S1$ it was

[13] In Mexico an ejido is an area of communal land used for agriculture, on which community members individually farm designated parcels and collectively maintain communal holdings.

[14] What I call DANAE is what Skoufias et al. (2001) and Skoufias and di Maro (2008) call "salaried work". Nevertheless, the term "salaried work" is used in the surveys with a different meaning. Therefore, to avoid confusion, I prefer to use the term DANAE instead.

asked to everyone who declared to work. However, in $S3$ and $S5$ it was only asked to those who declared to have a *salaried* job (in $S4$ the question was not asked). No question in $S1$ asked explicitly whether the person had a salaried job. Because of this, the empirical strategy that I follow to estimate the effect of PROGRESA on the number of hours worked per week is different to the one used for the other two outcome variables. The empirical strategy that I follow is explained in Subsection 2.5.2.

2.4.3 Descriptive Statistics

In Table 2.9 of Appendix 2.A, I divide the "total sample" of PROGRESA into observations with $sec_{i,t} = 0$ (in which I focus throughout the chapter) and the remainder, i.e, those with $sec_{i,t} = 1$. As can be observed, my sample differs in several characteristics from the sample with $sec_{i,t} = 1$. In general, members of my sample are younger, more educated, live in smaller households, have fewer kids but more kids below 6 years old, more often live together as a couple and according to the means index are marginally less poor.

Table 2.2 provides information of my samples (those with $sec_{i,t} = 0$) at baseline: a high percentage of people live together as a couple, they have on average between three and four years of education, the average age is 34 (36) years for men and 30 (32) for women in the pooled (panel) sample. Most men are household heads. Labor characteristics differ substantially among men and women. While 94% (94%) of men report to work in the pooled (panel) sample, only 12% (10%) of women do. 71% (72%) of men in the pooled sample have a DANAE, but just 4% (4%) of women do. On average, the number of adults working per household is 1.2, and the number of kids (people below 12) per household is a bit higher than 2.

As reported in Tables 2.10 and 2.11 in Appendix 2.A, which look at data in $t = 1$ (before the start of PROGRESA), women who work more often are household heads, less often live in a couple, tend to have less kids below 6 years old, and are older and less educated than women who do not work. Men who work more often are household heads than men who do not work, but contrary to women, working men often have more kids below 6 years old, more often live in a couple, and are younger and more educated than men who do not work. The same patterns are true when

one compares women and men who have a DANAE vs. those who do not (see Tables 2.12 and 2.13). These descriptive statistics are compatible with a very traditional division of labor between genders, and they suggest that women work (outside the household) mostly when they *have to*, i.e, when they are household heads.[15]

Table 2.2: Individual and Household Characteristics at Baseline (S1)

	MEN		WOMEN	
Individual characteristics	**Pooled**	**Panel**	**Pooled**	**Panel**
Living as a couple	0.85	0.87	0.83	0.85
Years of education	3.59	3.70	3.33	3.50
Age	34.23	35.44	31.85	30.74
Household head	0.84	0.86	0.05	0.05
Work	0.94	0.94	0.12	0.10
DANAE	0.71	0.72	0.04	0.04
N. Obs	18360	12692	19306	13472

Household (hh) characteristics	**Pooled**	**Panel**
# people working per hh	1.21	1.15
# of people in the hh	4.69	4.42
# of kids per hh	2.35	2.13
# of hh	5784	2999

Note: These tables report the demographic characteristics of individuals and households in the panel and pooled sample at baseline (S1). Work is the fraction of people that reported to work. DANAE is an acronym for: day agricultural or nonagricultural employment. I report the fraction of people (*among the total*) that reported to have this type of work.

In Table 2.14 of Appendix 2.A I report data about the amount of money

[15] In fact, whereas 44% (38%) of women who are household heads report to work in the pooled (panel) sample, only 12% (9%) of women who are not household heads do. The patterns for DANAE are similar, 23% (21%) of women who are household heads report to have a DANAE, instead only 4% (3%) of women who are not household heads do. Moreover, 89% (87%) of women who report to be household heads do not live in a couple, i.e, apparently women report to be household heads mostly when they do not have a partner.

that people in my sample spend on food, transportation, and clothes. I also report information about the ownership of animals, which is relevant because animals can increase home consumption. Unfortunately this information was not collected at baseline. Table 2.14 shows information of households in control villages in Survey 3. Since people living in treated and control villages are quite comparable (see table 2.33 in Appendix 2.F) this can give an idea of the expenditures and ownership of animals of all the households (treated or not) at baseline. According to this information, the typical household has a weekly expenditure on food of around 125-130 real pesos of Oct 1998.[16] Transportation and clothing seem to be minor expenditures.

Moreover, according to a question asked at baseline (S1), more than 98% of the people report that either they own the house in which they live (which is totally paid), or someone lends it to them. This suggests that rent is not an important expenditure for them.

For those who work, the average weekly wage at baseline (in real pesos of Oct 1998) is 177 (164) pesos for men and 125 (115) pesos for women in the pooled (panel) sample. On average, both men and women of the pooled (panel) sample report to work 5.3 (5.2) days a week.

All this information facilitates the comprehension of the magnitude (and relevance) of the transfer granted by PROGRESA to the households in my sample. For instance, just the nutritional grant amounts to around 18% of the monthly expenditures in food (which is the largest expenditure of these households). These transfers are very generous, compared with other CCT in developing countries (see for instance Alzua et al., 2013 and Banerjee et al., 2017).

2.5 Econometric Specification and Results

This section presents the econometric specification and the impact of PROGRESA on: (1) labor force participation in all kinds of work, (2) labor force participation in DANAE and (3) the number of hours worked per week.

[16] In Appendix 2.D, Table 2.23 , I provide information of the prices of some consumption goods in treated and control localities.

Since I do not know who actually received the transfers and who did not, in all the cases I report estimates of the "intention to treat" effect (Angrist et al., 1996). Nevertheless, given that the take-up of PROGRESA among eligible people in treated villages is very high (93.9% of eligible households in treated villages received the transfers), and given that no one in control villages was entitled to receive the transfers, the estimates should be close to the "treatment effect on the treated". For the first part of the section, treatment is defined as a dummy variable: a person is treated if she/he lives in a treated locality and not treated otherwise.

As I mentioned before, it is women who are entitled to receive the transfers of PROGRESA. This means that my estimates of the effect of PROGRESA on the labor outcomes of men implicitly assume that there is income pooling in the household. This is a caveat (see for instance Duflo, 2003 and Attanasio and Lechene, 2014). But, to the best of my knowledge, this has always been assumed when estimating the effect of PROGRESA on labor outcomes (see for instance: Skoufias et al., 2001, Skoufias and di Maro, 2008, Rubio-Codina, 2010, Alzua et al., 2013, Banerjee et al., 2017). Moreover, Haushofer and Shapiro (2016) recently report they that do not find evidence against income pooling in their experiment in Kenya.

In the coming subsections I present the econometric specification and results for the three indicators mentioned before. First I analyze the effect of PROGRESA on the labor force participation and then focus on the impact of PROGRESA on the number of hours worked per week. I split the analysis because, given the design of the surveys, the empirical strategy that I follow is different. At the end of the section I change the definition of treatment to a continuous variable equal to the amount of the transfer per adult equivalent. This allows to see the effect on labor outcomes of a marginal change in the amount of the transfers.

2.5.1 Labor Force Participation

Specification

To identify the effect of PROGRESA on the labor force participation of adults I use a DiD specification, which allows me to exploit the panel structure of the data. This specification eliminates all pre-program differences

between treatment and control groups under the assumption that unobserved heterogeneity between these two groups is fixed over time.

The **Baseline** specification is the following:

$$Y_{i,t} = \alpha + \beta_1 T_i + \beta_T T_i * Expost_t + \lambda_3 S3 + \lambda_4 S4 + \lambda_5 S5 + \sum_{j=1}^{J} \gamma_j X_{ji} + u_{i,t} \quad (2.1)$$

where:

$Y_{i,t}$ is the dummy outcome variable for individual i in time $t \in 1, 3, 4, 5$. I do the estimation for (1) $Work_{i,t}$ and (2) $DANAE_{i,t}$ (see Subsection 2.4.2 for the definition of the outcome variables).

T_i is the treatment, in this case a dummy variable. It is equal to 1 if person i lives in a treated locality and it is equal to 0 otherwise.

$Expost_t$ is also a dummy variable. It is equal to 1 if the time of the survey is 3, 4 or 5 (that is, after the start of the program) and it is equal to 0 if the time of the survey is 1 (before the start of the program).

$S3, S4, S5$ are time dummies, equal to 1 if the time of the survey is, respectively, 3, 4 or 5, and zero otherwise.

Finally, X_{ij} is a set of j characteristics for individual i measured at $t = 1$. These are control variables that are included to increase precision of the estimates (Duflo et al., 2007). I include the following controls: age, age squared, locality of residence (among the 506 possible ones), whether the person lives together as a couple, number of people in the household, whether the person is the household head, and number of years of education.[17]

The coefficient of interest is β_T, it provides the difference in the dependent variable across the treated and control individuals relative to their baseline values, conditional on the control variables.

I run the regression using OLS (about the good performance of OLS with limited dependent variables, see for instance Angrist and Pischke, 2009, Ch.3). Nevertheless, qualitative results do not change if I run a Probit regression instead (results are available upon request). Because of the exper-

[17] I include the same controls as Banerjee et al. (2017) plus the locality of residence and whether the person is the household head.

imental design, localities rather than individuals, were assigned to treatment. Therefore I cluster the errors at the locality level (Abadie et al., 2017, Bertrand et al., 2004). Clustering allows any kind of autocorrelation of the errors within the cluster, in this case the localities (Cameron and Miller, 2015). I estimate this regression separately for men and women.

I also estimate a specification with **Dynamic Effects**. This allows to estimate the effect of PROGRESA, separately, at each survey time: S3, S4, S5. To do that I estimate:

$$Y_{i,t} = \alpha + \beta_1 T_i + \beta_{T3} T_i * S3 + \beta_{T4} T_i * S4 + \beta_{T5} T_i * S5 + \lambda_3 S3 + \lambda_4 S4 + \lambda_5 S5 + \sum_{j=1}^{J} \gamma_j X_{ji} + u_{i,t} \quad (2.2)$$

where everything is the same as before, except for the fact that now I disentangle the effect of the treatment for each survey time. The coefficients of interest are: β_{T3}, β_{T4} and β_{T5}. Each of these coefficients provide the effect of PROGRESA on $Y_{i,t}$ from $t = 1$ up to $t \in 3, 4, 5$, respectively.

My final specification explores the presence of **Heterogeneous Effects**. I want to know whether the effect of PROGRESA on people who were intended to receive *only* the nutritional grant (fully unconditional, except for the annual medical check-ups) is different from the effect of PROGRESA on the rest of the people, i.e, those who were intended to receive the nutritional grant but also, in some t, the educational grant coming from a kid in primary school.

In order to do this, I created a variable called "GA_i".

Definition: I define GA_i=0 for an agent i if $sec_{i,t} = 0$ for all t in which i appears, and moreover the person lives in a household in which:

(1) There has been no kid between 8 and 11 years through all the surveys in which the household appears, **and**

(2) There has been no kid who meets the requisites to be in grades 3 to 6 of primary school through all the surveys in which the household appears.[18]

[18] Again, to determine whether a kid meets the requisites to be in grades 3 to 6, I use information about completed grades and attendance at baseline, $t = 1$, and I move it forward assuming no repetition and no drop out.

GA_i=1 for the rest of the sample, i.e, for those who live in a household which in some t was intended to receive an educational transfer for a kid in primary school. I estimate:

$$Y_{i,t} = \alpha + \beta_1 GA_i + \beta_2 T_i + \beta_3 T_i * GA_i + \beta_4 GA_i * Expost_t + \beta_T T_i * Expost_t + \beta_{TG} T_i * GA_i * Expost_t + \lambda_3 S3 + \lambda_4 S4 + \lambda_5 S5 + \sum_{j=1}^{J} \gamma_j X_{ji} + u_{i,t} \quad (2.3)$$

where GA_i is the dummy variable defined above and the rest is the same as before. The coefficients of interest are β_T for the group with $GA_i = 0$ and $\beta_T + \beta_{TG}$ for the group with $GA_i = 1$.

For all the estimations (2.1), (2.2), and (2.3) of the panel sample, I also report the results using individual fixed effects (IFE). IFE are useful if one fears that individual unobserved factors are correlated in some way with the treatment (Wooldridge, 2016, Ch 13). It does not seem to be the case here, since treatment only depends on the locality of residence, and localities were randomly assigned into treatment. Nevertheless, I report the results using IFE as a robustness check.

Appendix 2.C reports the results of the estimations (2.1), (2.2), and (2.3) for the whole sample (i.e whatever value of $sec_{i,t}$ and not only for observations with $sec_{i,t} = 0$). These results are consistent with what has been found in previous studies: the effect of PROGRESA on labor outcomes is in general small and not significantly different from zero.

Results

Table 2.3 reports the results of regressions (2.1) baseline, (2.2) dynamic effects, and (2.3) heterogeneous effects, where the dependent variable is "work". The first column of 2.3 reports the results for the pooled sample of men, the second for the panel sample of men, and the third for the panel also, but with individual fixed effects. Columns four to six report the same results for women. Recall from the definition of work that people who work (work=1) do not necessarily receive an income in exchange. Table 2.4 replicates Table 2.3 for the outcome DANAE. DANAE=1 implies that the person works in a day agricultural or nonagricultural work and gets paid in exchange. Thus, DANAE is closer to the idea of remunerated employment.

In the coming paragraphs I comment first the results for men, and then for women.

For men, when work is the outcome variable, coefficients are overall negative, but none of them is significant at conventional levels. Moreover, the magnitude of the coefficients is relatively small. In the baseline estimation, for instance, no effect is bigger than 1.4 percentage points in absolute value. Instead, when DANAE is the outcome variable, coefficients are mostly positive. PROGRESA seems to have a positive effect of 3.9 percentage points (pooled sample) when one looks at the three ex-post surveys altogether. The effect in Oct 98 ($t = 3$) was large, of 5.7 percentage points, and significant at 10%.

Appendix 2.E explores, using a specification similar to (2.3), whether the effects are heterogeneous according to some relevant characteristics at baseline. Tables 2.29-2.30 look at whether the effect of PROGRESA is different among those who are poor as compared to those who are less poor (I used the means index at $t = 1$ to split the sample in two). For men, we find that the differences between the two groups are small and non significantly different from zero. Tables 2.31-2.32, in turn, look at whether the effect of PROGRESA differs for those who were household heads at baseline as compared to those who were not. The differences are not statistically different, however, they are sizeable. For instance, for both groups PROGRESA has a negative effect on work, but the effect is more negative among those who are not household heads. Instead, the effect on DANAE even if positive for both groups, is mostly driven by men who are household heads.

Overall, one could say that for men PROGRESA had negative but small effects on work and positive, bigger, effects on DANAE, even if these effects are not always significant. This suggests that PROGRESA made some men move from less formal activities (comprised in "work") into some other activities for which they received a fixed payment, that is, DANAE. Moreover, the positive effect on DANAE is much stronger among men who were household heads at baseline. With time, the positive effects on DANAE remain positive and larger in absolute value than the negative effects on work, however, they seem to lose strength. If anything, one could say that PROGRESA had a positive effect on DANAE for men.

As highlighted by Banerjee et al. (2017), the expected effect of cash transfers on women in a context like the present one is not obvious at all. The

additional income might allow a woman who previously had a job to stay home with the children if she prefers, but at the same time, additional income might allow her to afford childcare and actually, to be able to work.

In Table 2.3 we observe a considerable reduction (even if not significantly different from zero) of work performed by women when the expost surveys are considered altogether. However, it seems that this reduction was mostly present at the beginning of the program (at $t = 3$), and did not last much, since by November 1999 ($t = 5$) the negative effect of PROGRESA on work for women decreased substantially. The effects of PROGRESA on DANAE, for women, are very small in absolute terms and statistically insignificant.

Recall that only a minority of women (no bigger than 12% at baseline for any of the samples) performed *any* kind of work outside the household at baseline, and that the biggest share of those who did, were household heads. In fact, looking at Tables 2.31-2.32 in Appendix 2.E one can see that the reduction of work for women seems to be mostly driven by women who were household heads. Even if the difference in the effect on women who were household heads as compared with those who were not is not statistically significant, the negative effect for household heads is substantial and more negative than the one for those who were not household heads. The effects on DANAE, instead, are almost equal to zero in absolute terms for both subgroups.[19]

Tables 2.29-2.30, which analyze the heterogeneity of effects among poorer and less poor, show that the effect on work is significantly different (at 10%) among poorer and less poor women. The negative effect is almost totally driven by women who were less poor, since the effect on the poorest women is virtually equal to zero in absolute terms. Instead, the level of poverty does not significantly change the effect of PROGRESA on DANAE for women, which again seems to be close to zero in absolute terms both for the poorer and for the less poor women.

Overall, for women we observe a reduction of work which is considerable in size, even if not statistically different from zero. This negative

[19]However, given the very low pre-program level, these small absolute effects become much more sizeable in relative terms (for instance, the relative effect of PROGRESA on DANAE for women who are household heads in the pooled sample is equal to 0.008/0.045=18%).

effect is not accompanied by an increase in their participation in paid employment, as it was the case for men (in fact, the effect of PROGRESA on DANAE seems to be pretty close to zero in absolute terms for women in every considered specification). Possibly cultural norms might help explain that women did not perform more paid employment outside the household, since, for instance, as reported by Adato et al. (2000) before the start of PROGRESA more than 90% of women reported that they needed their husband's permission to visit relatives or neighbors. Strong social norms together with the fact that the activities comprised in "work" (mostly self-employment and unpaid family work) are probably badly remunerated, might help to explain that women, at the beginning, were more likely to stop performing these activities and possibly to substitute them by more activities at home. However, as remarked before, the negative effect on work for women was almost equal to zero by the time of the last survey. Therefore, one could conclude that PROGRESA had a (non-significant) negative but non long-lasting effect on women's work that was mostly driven by those who were less poor (among the poor) and household heads, and a negligible (absolute) effect on paid employment (DANAE).

Tables 2.3-2.4 also report the effect of PROGRESA for two different groups of people, those who never received an educational grant coming from a kid in primary school (those with $GA_i = 0$) and those who, in some point, received an educational grant coming from a kid in primary school (those with $GA_i = 1$). As explained before, since those with $GA_i = 0$ only received the nutritional transfer, which is fully unconditional (except for the free annual medical check-ups), the effect of PROGRESA on this subsample is a pure income effect by definition. The effects for this group, however, are similar (and the difference, i.e, β_{TG}, non-statistically different) from the effects that we observe for those with $GA_i = 1$ for which, I have claimed throughout the chapter, the transfers (even if they contain an educational component) are also, in practice, unconditional.

Let me just recall at this stage that, as reported in Appendix 2.B, these results are robust to a slight change in the definition of "$sec_{i,t}$" (see Section 2.4.1) according to which the sample is (further) restricted to adults living in households in which never, up to t, lived kids aged **11** and above. In fact, the results are qualitatively the same and very similar in magnitude.

Finally, it is worth to highlight that despite the existing differences between my sample (i.e, those with $\text{sec}_{i,t} = 0$) and the rest of the sample of

PROGRESA (i.e, those with $\text{sec}_{i,t} = 0$), the effects of the program when one considers only those with $\text{sec}_{i,t} = 0$ are quite similar to the effects observed when the whole sample of PROGRESA is analyzed.[20] In the latter case, for men one observes negative (but not significant) effects on work (a bit smaller in absolute value when compared to the ones of my sample), and positive and significant effects on DANAE, which lose strength through time but remain positive. For women one observes negative (but not significant) effects on work and an effect on DANAE very close to zero in absolute terms. All this suggests that the effects of PROGRESA on adult labor outcomes are robust, and in particular that the conditionality of the program (which was a binding constraint for adults in households with kids in secondary school) did not induce important differences on these indicators.

2.5.2 Hours Worked per Week

Previous subsections looked at the effect of PROGRESA on the extensive margin (whether people work or not). This one, instead, looks at its effect on the intensive margin (the number of hours worked).

Skoufias et al. (2001) and Skoufias and di Maro (2008) do not include an estimation of the effect of PROGRESA on the number of hours worked. Alzua et al. (2013) and Banerjee et al. (2017) do, using a DiD empirical strategy, but to the best of my knowledge, they do not acknowledge that the question was asked to a different set of people before and after the start of PROGRESA (see Subsection 2.4.2).

To avoid this problem one could rely on randomization for the identification by using only the ex-post surveys. One could use $S3$ and $S5$ data, keep all the observations (assigning zero hours worked to those who do not have a salaried job) and estimate the effect of PROGRESA on the number of hours worked in a "salaried" job. The problem of doing so is that the results would be difficult to interpret, since the estimation would mix the effect of PROGRESA on the intensive and extensive margins (Rothstein

[20] As stated before, the differences between the two groups could be seen in Table 2.9 in Appendix 2.A and the results of the estimations for the whole sample are reported in Appendix 2.C.

Table 2.3: Impact of PROGRESA on the Probability of Working

	MEN			WOMEN		
	Pooled	**Panel**	**Panel (FE)**	**Pooled**	**Panel**	**Panel (FE)**
Baseline						
β_T	-0.014	-0.006	-0.006	-0.019	-0.016	-0.016
	(.009)	(.011)	(.011)	(.018)	(.017)	(.017)
Dynamic Effects						
β_{T3} (in $t = 3$)	-0.009	-0.001	-0.001	-0.020	-0.023	-0.023
	(.011)	(.022)	(.013)	(.020)	(.021)	(.021)
β_{T4} (in $t = 4$)	-0.019	-0.013	-0.013	-0.027	-0.021	-0.021
	(.011)	(.013)	(.013)	(.019)	(.018)	(.018)
β_{T5} (in $t = 5$)	-0.015	-0.004	-0.004	-0.009	-0.005	-0.005
	(.009)	(.012)	(.013)	(.022)	(.021)	(.021)
Heterogeneous Effects						
β_T (for GA_i=0)	-0.020	-0.013	-0.014	-0.025	-0.021	-0.021
	(.016)	(.017)	(.017)	(.020)	(.018)	(.018)
$\beta_T + \beta_{TG}$ (for GA_i=1)	-0.013	0.001	0.002	-0.017	-0.012	-0.012
	(.009)	(.009)	(.009)	(.021)	(.022)	(.022)
Pre-Program Level	0.937	0.942	0.942	0.118	0.104	0.104
N. Obs	18360	12692	12692	19306	13472	13472

Note: This table reports the effect of PROGRESA on the probability of working. Treated individuals are those who live in treated localities. In the first column I report the results of an OLS regression for a sample that includes all valid observations of men for which $sec_{i,t} = 0$. In the second column the results of an OLS regression for all valid observations of men who have $sec_{i,t} = 0$ in all the surveys. In the third one, I use the same sample as before but I include individual fixed effects. In columns four to six I report the results of the same estimations for women. Errors are clustered at the locality level and reported in parenthesis. See the main text for the definition of GA_i. *** significant at 1% level; ** significant at 5% level; * significant at 10% level

Table 2.4: Impact of PROGRESA on the probability of having a DANAE

	MEN			WOMEN		
	Pooled	**Panel**	**Panel (FE)**	**Pooled**	**Panel**	**Panel (FE)**
Baseline						
β_T	0.039*	0.030	0.031	0.001	-0.001	-0.001
	(.022)	(.025)	(.025)	(.007)	(.007)	(.007)
Dynamic Effects						
β_{T3} (in $t = 3$)	0.057*	0.033	0.034	0.000	-0.005	-0.006
	(.029)	(.030)	(.030)	(.008)	(.009)	(.009)
β_{T4} (in $t = 4$)	0.027	0.028	0.029	-0.001	0.001	0.001
	(.025)	(.028)	(.028)	(.009)	(.010)	(.010)
β_{T5} (in $t = 5$)	0.025	0.030	0.030	0.004	0.002	0.003
	(.028)	(.032)	(.032)	(.009)	(.008)	(.008)
Heterogeneous Effects						
β_T (for GA_i=0)	0.044	0.028	0.029	0.004	0.004	0.004
	(.028)	(.032)	(.032)	(.010)	(.010)	(.010)
$\beta_T + \beta_{TG}$ (for GA_i=1)	0.035	0.033	0.033	-0.002	-0.005	-0.005
	(.025)	(.029)	(.029)	(.009)	(.010)	(.010)
Pre-Program Level	0.714	0.723	0.723	0.045	0.038	0.038
N. Obs	18323	12671	12671	19231	13410	13411

Note: This table replicates Table 2.3, with day agricultural or nonagricultural employment (DANAE) as dependent variable. See Table 2.3 for details.

and von Watcher, 2017). To avoid this problem, and to be able to focus on the intensive margin, I proceed in a different way.

I look only at men who declared to have a DANAE in $S1$ and still declare to have a DANAE in $S3$ and $S5$, respectively.[21] Among these people, the effect of PROGRESA on the number of hours worked, if any, is on the intensive margin. Two problems arise: First, in $S3$ and $S5$ I do not have data of the number of hours worked for all the people who declared to have a DANAE (since the question was only asked to those who declared to have a "salaried" job). I have data for 92.43% of them (92.44% of the control and 92.43% of the treated; the difference is not statistically significant), therefore I look at those.

Second, one could fear that this is a selected sample, i.e. that the probability of being part of the sample is affected by PROGRESA (Lee, 2009). Because of this, I first look at whether the probability of having a DANAE in $S3$ (respectively, $S5$) for those who had a DANAE in $S1$ is different for treated and control observations. To do that, I run a regressions like (2.1) and (2.2) but only among men who had a DANAE in $S1$. As reported in Table 2.5, I find that PROGRESA did not have any significant effect at any conventional level on this group. This suggests that the sample is not selected.

Given this, I use the following DiD specification for the sample of men having a DANAE in $S1$ and $S3$ or in $S1$ and $S5$, respectively:

$$Hours_{i,t} = \alpha + \beta_1 T_i + \beta_{TX} T_i * SX + \lambda_X SX + \sum_{j=1}^{J} \gamma_j X_{ji} + u_{i,t} \tag{2.4}$$

where $X \in \{3, 5\}$. I run the regressions separately for $S3$ and $S5$. $Hours_{i,t}$ is the number of hours worked per week. T_i and control variables are the same as before.

β_{TX} is the coefficient of interest. It provides the effect of PROGRESA on the number of hours worked per week for men who report to have a DANAE in $S1$ and $S3$ (or $S5$, respectively).

[21] I focus, for this part of the analysis, on men because as stated before, the percentage of women who had a DANAE at baseline is very small, smaller than 5%.

Table 2.5: Effect of PROGRESA on DANAE for those with a DANAE at Baseline

	Pooled	**Panel**	**Panel (FE)**
Baseline	-0.010	-0.021	-0.021
β_T	(.015)	(.014)	(.014)
Dynamic Effects			
β_{T3} (in $t = 3$)	0.003	-0.019	-0.018
	(.022)	(.022)	(.022)
β_{T5} (in $t = 5$)	-0.029	-0.024	-0.024
	(.017)	(.018)	(.018)
N. Obs	10266	6864	6864

Note: This table reports the effect of PROGRESA on the probability of having a day agricultural or a nonagricultural employment (DANAE) in S3/S5 for those who had a DANAE in S1 (no data about the number of hours worked is reported in S4). Treated individuals are those who live in treated localities. In the first column I report the results of an OLS regression for a sample that includes all valid observations of men for which $sec_{i,t} = 0$ and who had a DANAE in S1. The second column shows the results of an OLS regression for all valid observations of men who have $sec_{i,t} = 0$ in all the surveys and who had a DANAE in S1. In the third column I use the same sample as before, but I include individual fixed effects. Errors are clustered at the locality level and reported in parenthesis. *** significant at 1% level; ** significant at 5% level; * significant at 10% level.

Table 2.6: Effect of PROGRESA on the Number of Hours Worked per Week

	Pooled	**Panel**	**Panel (FE)**
β_{T3} (in $t = 3$)	0.376	0.680	0.689
	(.952)	(1.091)	(1.08)
Pre-Program Level	43.43	43.17	43.17
N. Obs	5535	3454	3454
β_{T5} (in $t = 5$)	-0.543	-0.465	-0.449
	(.968)	(1.07)	(1.06)
Pre-Program Level	43.69	43.49	43.49
N. Obs	4967	3838	3838

Note: This table reports the effect of PROGRESA on the number of hours worked per week for men who had a day agricultural or nonagricultural employment (DANAE) in S1 and who also had it in S3/S5, respectively. Treated individuals are those who live in treated localities. In the first column I report the results of an OLS regression for a sample that includes all valid observations of men for which $sec_{i,t} = 0$ and who had a DANAE in S1 and also have it in S3/S5, respectively. In the second column the results of an OLS regression for all valid observations of men who have $sec_{i,t} = 0$ in all the surveys and who had a DANAE in S1 and who also have it in S3/S5, respectively. In the third column I use the same sample as before but I include individual fixed effects. Errors are clustered at the locality level and reported in parenthesis. *** significant at 1% level; ** significant at 5% level; * significant at 10% level.

As reported in Table 2.6, PROGRESA did not have any significant effect on the intensive margin for this sample. Coefficients for $t = 3$ are positive, and coefficients in $t = 5$ are negative. However they are small, all of them smaller than one hour per week in absolute value. These effects are compatible with a zero income effect on the intensive margin.

2.5.3 Extension: Intensity of the Treatment

Specification

In this subsection I analyze the effect of the level of the transfer on the labor supply. Given that the number of people in the households is very variable (ranging from 1 to 14 members), the proportion of the transfer available for each person varies substantially from one household to another, even for households receiving the same total amount. For this reason, I prefer to measure the treatment as the "transfer per adult equivalent".

To compute the total transfer of each household, as Bianchi and Bobba (2013), I use the information of enrollment and education level of kids reported at baseline plus the information of Table 2.1 and I assume that all kids progressed by one grade in each year. To compute the adult equivalent, I use the OECD definition (Haughton and Khandker, 2009): AE= 1+0.7*(number of adults-1)+0.5*(number of kids), and the number of kids and adults at baseline. Given that I am using only pre-program information and the rules of PROGRESA, this definition of treatment is exogenous.

On average (for periods different from $t = 1$), the total transfer per household in treated localities is of 150 (145) pesos, the adult equivalent is equal to 3.5 (3.4) and the transfer per adult equivalent is of 45.2 (44.1) pesos for the pooled (panel) sample.

Since the amount of the transfer depends on the household composition (determined by personal decisions), it is reasonable to think that treatment is, to some extent, correlated with unobserved individual factors. To take this into account I introduce IFE in all these estimations. Given this, the **Baseline** specification, in this case, becomes:

$$Y_{i,t} = a_i + \beta_T T_{i,t} + \lambda_3 S3 + \lambda_4 S4 + \lambda_5 S5 + u_{i,t} \tag{2.5}$$

where now $T_{i,t}$ is the transfer per adult equivalent of agent i in time t. At time $t = 1$ it is equal to zero for all agents. For the other time periods, i.e $t \in \{3, 4, 5\}$, $T_{i,t}$ is bigger than zero for agents living in treated localities and equal to zero for agents living in control localities.

a_i summarizes the unobserved individual factors, that are assumed to be constant through time. Given that all controls are at baseline, they are not

included in this specification as they would disappear when one computes the fixed effects estimations.

$S3, S4$ and $S5$ are time dummies, equal to 1 if the time of the survey is, respectively, 3, 4 or 5. The coefficient of interest, the DiD estimator, is β_T.

As before, I also estimate a specification with **Dynamic Effects**:

$$Y_{i,t} = a_i + \beta_{T3} T_{i,t} * S3 + \beta_{T4} T_{i,t} * S4 + \beta_{T5} T_{i,t} * S5 + \lambda_3 S3 + \lambda_4 S4 + \lambda_5 S5 + u_{i,t} \tag{2.6}$$

where the coefficients of interest are β_{T3}, β_{T4} and β_{T5}.

Finally, the specification for the **Heterogeneous Effects**, in this case, is the following:

$$\begin{aligned} Y_{i,t} = a_i + \beta_1 GA_i * Expost + \beta_N T_{i,t}^{\textcircled{N}} + \beta_{NG} T_{i,t}^{\textcircled{N}} * GA_i + \beta_E T_{i,t}^{\textcircled{E}} \\ + \lambda_3 S3 + \lambda_4 S4 + \lambda_5 S5 + u_{i,t} \end{aligned} \tag{2.7}$$

Where I split the total transfer in its two components: $T_{i,t}^{\textcircled{N}}$ is the nutritional transfer per adult equivalent in time t and $T_{i,t}^{\textcircled{E}}$ is the educational transfer per adult equivalent in time t. Notice that $T_{i,t}^{\textcircled{E}}$ is only different from zero for people with GA_i=1, i.e, those who live in a household that in some t received the educational grant. β_N provides the effect of increasing the transfer for people living in households which never received the educational grant (i.e, those with $GA_i = 0$). People living in households which *in some* t received the educational grant (i.e, those with $GA_i = 1$) can be further split in two groups: those who in t did not receive the educational grant; for those the total effect of increasing the transfer would be given by $\beta_N + \beta_{NG}$. And those who in t received the nutritional and the educational grant, for those the total effect of increasing the transfer (any of them, since money is fungible) is given by $\beta_N + \beta_{NG} + \beta_E$.

Results

Table 2.7 reports the results of regressions (2.5) baseline, (2.6) dynamic effects, and (2.7) heterogeneous effects, where the dependent variable is "work". The first column of 2.3 reports the results for the pooled sample

of men and the second column for the panel sample of men, in both cases I report the results of the OLS estimations with individual fixed effects. The third and fourth columns report the same results for women. Table 2.8 replicates Table 2.7 for the outcome DANAE.

For the sake of exposition, I rescale the treatment, so that it is the transfer *in tens* per adult equivalent. This means that, β_T in (2.5) for example, provides the average effect of increasing the transfer by 10 pesos per adult equivalent (on average, this implies an increase of around 35 pesos in the total transfer of the household).

Patterns are similar to those seen in Subsection 2.5.1. For men coefficients are overall negative when work is the dependent variable. The biggest negative effect shows up in $t = 4$, this effect is significant at 10% level, it tells us that an increase of 10 pesos in the transfer per adult equivalent decreases work in 0.34 percentage points. The effects on DANAE instead, are positive and significant, and the biggest effect, significant at 5% level, is at the beginning of the program, i.e, at $t = 3$, which is equal to 0.98 percentage points.

When looking at the heterogeneous effects for men, we see that the effect on work of increasing the transfer for those who only received the nutritional grant throughout the analysis (i.e, those with $GA_i = 0$) is negative and significant at 5% level, equal to -0.71 percentage points. For those which in some moment (different from t) received the nutritional transfer, the effect is equal to -0.43 percentage points. The difference among these two groups is not statistically significant (i.e, β_{NG} is not statistically different from 0). The effect for those who in t received the nutritional and the educational grant is still negative but much smaller, equal to -0.05 percentage points.[22] Instead, the effects on DANAE are positive for the three sets of men. The biggest effect is for those with $GA_i = 1$ who in t received the educational grant, for those, the effect is equal to 1.4 percentage points, and is significant at 10% level.

For women as well the patterns are similar to those observed and com-

[22] The average transfer per adult equivalent for people with $GA_i = 0$ in the pooled (panel) sample living in treated villages is 38 (38) pesos. For those with $GA_i = 1$ but who did not receive the educational grant in t, it is equal to 30 (30) pesos. The difference between these two groups is due to the fact that on average, households of the second group tend to have more members. Finally, for those with $GA_i = 1$ who in t received also the educational grant, it is equal to 59 (59) pesos.

mented in Subsection 2.5.1. All the effects are statistically insignificant, the effects on work are however, negative, but tend to phase out with time. The effects on DANAE, if anything, are positive, but typically small.

When looking at the heterogeneous effects for women, we see that the effects on work of increasing the transfers are similar for the three groups, i.e, those with $GA_i = 0$, those with $GA_i = 1$ without educational grant in t, and those with $GA_i = 1$ with an educational grant in t; in the three cases the effects are negative and non-significantly different from zero. On DANAE, however, the effects even if non significant, go in opposite directions: for those with $GA_i = 0$ the effect of increasing the transfer per adult equivalent by 10 units has a positive effect of 0.25 percentage points, instead, for the group of women with $GA_i = 0$ the effect has the same magnitude but the opposite sign (however, the difference among the two, i.e β_{NG} is not significantly different from zero), finally the effect for those which currently receive an educational transfer from a kid in primary school is exactly equal to 0.

Table 2.7: Impact of PROGRESA on the Probability of Working [treatment= transfer (in tens) per adult equivalent]

	MEN		WOMEN	
	Pooled	**Panel**	**Pooled**	**Panel**
Baseline				
β_T	-0.0015	-0.0004	-0.0015	-0.0030
	(.0014)	(.0018)	(.0029)	(.0029)
Dynamic Effects				
β_{T3} (in $t = 3$)	-0.0016	-0.0003	-0.0016	-0.0041
	(.0019)	(.0025)	(.0035)	(.0039)
β_{T4} (in $t = 4$)	-0.0034*	-0.0025	-0.0031	-0.0047
	(.0020)	(.0025)	(.0031)	(.0033)
β_{T5} (in $t = 5$)	-0.0003	0.0004	-0.0006	-0.0019
	(.0015)	(.0017)	(.0030)	(.0029)
Heterogeneous Effects				
$GA_i = 0$				
β_N *(only received the nutritional grant at every t)*	-0.0071**	-0.0060*	-0.0027	-0.0049
	(.0030)	(.0034)	(.0047)	(.0047)
$GA_i = 1$				
$\beta_N + \beta_{NG}$ *(in t only received the nutritional grant)*	-0.0043	-0.0025	-0.0014	-0.0043
	(.0034)	(.0036)	(.0068)	(.0073)
$\beta_N + \beta_{NG} + \beta_E$ *(in t received also the educational grant)*	-0.0005	.00383	-0.0022	-0.0049
	(.0032)	(.0035)	(.0069)	(.0069)
Pre-Program Level	0.9386	0.9423	0.1128	0.1041
N Obs	16995	12692	17751	13472

Note: This table reports the effect of PROGRESA on the probability of working. Treatment is defined as the transfer *in tens* per adult equivalent. I compute the transfer using information at baseline and the program rules. In the first column I report the results of an OLS regression, with individual fixed effects, for a sample that includes all valid observations of men who have $sec_{i,t} = 0$ for at least two different time periods. In the second column the results of an OLS regression, with individual fixed effects, for all valid observations of men who have $sec_{i,t} = 0$ in all the surveys. In the third and fourth columns I report the results of the same estimations for women. Errors are clustered at the locality level and reported in parenthesis. See the main text for the definition of GA_i.

*** significant at 1% level; ** significant at 5% level; * significant at 10% level.

Table 2.8: Impact of PROGRESA on the probability of having a DANAE [Treatment= Transfer (in tens) per Adult Equivalent]

	MEN		WOMEN	
	Pooled	**Panel**	**Pooled**	**Panel**
Baseline				
β_T	0.0071**	0.0062	0.0008	-0.0006
	(.0034)	(.0040)	(.0012)	(.0014)
Dynamic Effects				
β_{T3} (in $t = 3$)	0.0098**	0.0071	0.0011	-0.0013
	(.0045)	(.0055)	(.0015)	(.0019)
β_{T4} (in $t = 4$)	0.0056	0.0076	-0.0010	-0.0022
	(.0039)	(.0046)	(.0018)	(.0022)
β_{T5} (in $t = 5$)	0.0054	0.0054	0.0014	0.0002
	(.0042)	(.0045)	(.0014)	(.0015)
Heterogeneous Effects				
$GA_i = 0$				
β_N *(only received the nutritional grant at every t)*	0.0059	0.0051	0.0025	0.0012
	(.0061)	(.0072)	(.0026)	(.0031)
$GA_i = 1$				
$\beta_N + \beta_{NG}$ *(in t only received the nutritional grant)*	0.0050	0.0030	-0.0025	-0.0033
	(.0089)	(.0101)	(.0036)	(.0039)
$\beta_N + \beta_{NG} + \beta_E$ *(in t received also the educational grant)*	0.0145*	0.0118	0.0000	-0.0029
	(.0078)	(.0091)	(.0040)	(.0034)
Pre-Program Level	0.7154	0.7229	0.0413	0.0375
N Obs	16961	12671	17676	13410

Note: This table replicates Table 2.7, with day agricultural or nonagricultural employment (DANAE) as dependent variable. See Table 2.7 for details.

2.6 Falsification Tests

In this section I discuss some threats for identification and also perform falsification tests to try to rule out these threats; all the tables of this section are reported in Appendix 2.D.

One may fear that the absence of negative effects on labor outcomes is driven by general equilibrium effects unleashed by PROGRESA. This might be the case since the proportion of households who received the transfers in treated villages is substantial.[23] A common concern is that PROGRESA caused prices (of goods and land) in treated localities to increase or wages to decrease and therefore people maintained their previous labor choices (even in the presence of the subsidy) to cope with this.

The surveys at the locality level ($S3$, $S4$ and $S5$) collected information about prices. I report an extract of this information in Table 2.23. Out of fifteen consumption goods just one good has a price that is significantly different (although the difference is very small) among treated and control localities. The rest of the prices are very similar.

I have no information about the price of rents in the different localities. Nevertheless, as reported in Table 2.24, more than 98% of people report that they do not pay any rent: either because they own their house, or because it is lent to them by someone. Therefore this does not seem to be a source of concern.

The surveys at the locality level also contain information about average wages. I report this information in Table 2.25. According to this information, wages are not significantly different in treated and control localities. Using my data I further verify this by estimating the effect on wages using the same methodology to the one used to estimate the effect of PROGRESA on the number of hours worked per week. I report these results in Table 2.26. I find no significant effect at 5% level, and the point estimates are small but positive.

Finally, I try to rule out the presence of general equilibrium effects by testing whether other time varying factors in the locality characteristics

[23] As mentioned before, the original classification scheme classified around 52% of the households of the selected localities as poor, and the take-up rate among eligibles in treated localities was of 93.90% (Skoufias, 2005).

affected labor outcomes. I do this by using the data on non-eligibles:[24] people living in control and treated localities who were not classified as "poor", and therefore did not receive any transfer. In Appendix 2.D I replicate the baseline estimations for non-eligibles with $sec_{i,t} = 0$ and I find no significant effects at 5% level; this is consistent with previous findings of Skoufias and di Maro (2008) and Alzua et al. (2013). I obtain the same if I focus on the poorest half of the non-eligibles with $sec_{i,t} = 0$.

2.7 Conclusion

In the context of PROGRESA, adults living in households without kids in secondary school should only be affected by the income effect (and not by the cross-substitution effect induced by the conditionality) of the cash transfer. This implies that for this exogenously selected subsample, PROGRESA acts essentially as an UCT. I find that, contrary to the predictions of the neo-classical theory of labor supply, these adults did not use the additional money to "buy leisure". To the contrary, if anything, PROGRESA had a positive effect on remunerated employment.

The studies cited in the literature review could shed some light on the reasons of why this is the case. For example, as explained by Alderman and Yemtsov (2013), the cash transfer might have been used to lessen liquidity constraints. In fact, less than 1% of the analyzed sample reported to have savings, and after the start of the program only 4% of households living in control localities reported to have a loan, the majority coming from an informal source (friends or family). Thus, the lack of savings and the limited possibilities to get indebted, together with the extreme poverty, may explain that people prefer to use the money provided by PROGRESA to face urgent expenditures or to make investments instead of working less. This is consistent with the findings of Gertler et al. (2012) who show that PROGRESA beneficiaries invested part of the transfers in productive assets, which allowed them to increase agricultural income by almost 10% after 18 months. Further, Hoddinott and Skoufias (2004) show that eligible households in treated localities increased their caloric acquisition by 6.4%, and that this higher intake is mostly driven by calories coming from

[24] I stick to the original criteria of eligibility. I do not consider the "densified" as non-eligible (nor as eligible). Like Angelucci and de Giorgi (2009), I drop these observations.

vegetables and animal products. The better food intake can translate in better health outcomes (Gertler, 2000) which in turn may increase productivity and availability to work (Leibenstein, 1957).

It could be further argued that the absence of negative effect on labor outcomes of adults is explained by the fact that even if the transfers are generous, they are not high enough to induce exits from employment.[25] This could be true, however, what is also true is that these substantial transfers do have an immediate effect on the reduction of extreme poverty which is valuable by itself (Fiszbein and Schady, 2009), and as emphasized by Alderman and Yemtsov (2013) allow to better distribute among *all* the gains of growth.

I agree with Fiszbein and Schady, 2009 on the fact that the conditionality of CCT programs (which, after PROGRESA, became widely extended in developing countries) might play an important role.[26] However, as the current work pretends to contribute to show, this does not imply that it is necessarily the conditionality of the programs that prevents long-term dependency or an irresponsible attitude of the recipients. In fact, people living in poverty have many good reasons to use the money (even if unconditionally provided) in a responsible way, consistent with their present and future well-being. Thus, the role that the conditionality of this kind of programs play in preventing negative effects on adult labor outcomes, in my opinion, should not be overemphasized. Because doing so shadows other important mechanisms that might be at play and that should be explored to better understand the needs and requirements of people living in poverty.

[25] Even if the transfer is not high enough to persuade the primary earner (household head) of the household to leave his/her remunerated employment, one could have possibly expected other members of the household to withdraw from DANAE. However recall that, as shown in Table 2.30 in Appendix 2.E, this was not the case.

[26] Two reasons are: First, it might facilitate the implementation of these kind of programs, since voters are more willing to "help" the "deserving" poor. Second, it could be useful to emphasize and strength the importance of education, and could help to reduce its private costs, which is desirable given the high social benefits that it provides.

Appendix Chapter 2

2.A Descriptive Statistics

This Appendix presents several tables. The first table, Table 2.9, shows the characteristics of agents with $sec_{i,t} = 0$ vs. those with $sec_{i,t} = 1$ (see Section 2.4 for the definition of $sec_{i,t}$). Table 2.10, shows the characteristics for men who worked at baseline vs. those who did not and Table 2.12 shows the characteristics of men who had a DANAE at baseline vs. those who did not. Respectively, Tables 2.10 and 2.11 show the same information for women. Finally, Table 2.14 summarizes the expenditures of the households that belong to my samples (agents with $sec_{i,t} = 0$). It also includes the percentage of households who own domestic animals.

Table 2.9: Characteristics of observations with "$sec_{i,t} = 0$" vs. "$sec_{i,t} = 1$"

Characteristics at $t = 1$	$sec_{i,t}$**=0**	$sec_{i,t}$**=1**	**ND**	**P-value**
Sex (men)	0.49	0.50	-0.02	0.001***
Work	0.52	0.54	-0.03	0.003***
Health insurance at work	0.02	0.01	0.01	0.422
Household head	0.43	0.38	0.11	0.000***
Living in a couple	0.83	0.74	0.21	0.000***
DANAE=1	0.37	0.36	0.03	0.003***
Years of education	3.37	2.94	0.15	0.000***
Num. of people in the hh	5.01	7.66	-1.21	0.000***
Num of kids (below 18)	2.40	4.51	-1.20	0.000***
Num of small kids (below 6)	1.46	1.11	0.32	0.000***
Hours worked per week	22.32	23.33	-0.04	0.000***
Age	33.59	37.17	-0.28	0.000***
Means Index	647.30	635.26	0.15	0.000***
N. Obs	12773	16714		

Note: This table splits the observations in S1 (at baseline) among those with $sec_{i,t} = 0$ and those with $sec_{i,t} = 1$, and reports the differences among the two. DANAE: day agricultural or nonagricultural employment. ND: normalized difference: $\frac{\mu_1 - \mu_2}{\sqrt{(\sigma_1^2 + \sigma_2^2)/2}}$.

*** significant at 1% level; ** significant at 5% level; * significant at 10% level.

Table 2.10: Characteristics of Men who Work and who did not Work at Baseline

	Pooled				Panel			
	work=1	**work=0**	**ND**	**P-value**	**work=1**	**work=0**	**ND**	**P-value**
# of kids under 6 years	1.46	0.98	-0.46	0.000***	1.52	0.79	-0.74	0.000***
Living in a couple	0.86	0.57	-0.70	0.000***	0.89	0.60	-0.70	0.000***
# of people in the hh	4.94	4.99	0.02	0.697	4.60	4.48	-0.08	0.375
Hh head	0.84	0.54	-0.70	0.000***	0.87	0.60	-0.64	0.000***
Education	3.55	2.99	-0.18	0.002***	3.74	3.16	-0.19	0.014**
Age	34.26	41.18	0.45	0.000***	33.18	39.55	0.44	0.000***
N. Observations	5830	407			2990	183		

Note: This table splits the observations of men in S1 (at baseline) among those who work and those who did not work, and reports the differences among the two. Hh: Household, ND: normalized difference: $\frac{\mu_1-\mu_2}{\sqrt{(\sigma_1^2+\sigma_2^2)/2}}$.
*** significant at 1% level; ** significant at 5% level; * significant at 10% level.

Table 2.11: Characteristics of Women who Work and who did not Work at Baseline

	Pooled				Panel			
	work=1	**work=0**	**ND**	**P-value**	**work=1**	**work=0**	**ND**	**P-value**
# of kids under 6 years	1.35	1.50	0.14	0.001***	1.34	1.55	0.20	0.000***
Living in a couple	0.62	0.85	0.54	0.000***	0.68	0.87	0.48	0.000***
# of people in the hh	5.03	5.08	0.03	0.626	4.47	4.74	0.17	0.013**
Hh head	0.18	0.03	-0.47	0.000***	0.17	0.03	-0.46	0.000***
Education	2.68	3.33	0.23	0.000***	2.81	3.59	0.26	0.000***
Age	34.32	32.25	-0.15	0.000***	33.26	30.44	-0.22	0.001***
N. Observations	863	5673			353	3015		

Note: This table splits the observations of women in S1 (at baseline) among those who work and those who did not work, and reports the differences among the two. Hh: Household, ND: normalized difference: $\frac{\mu_1-\mu_2}{\sqrt{(\sigma_1^2+\sigma_2^2)/2}}$.
*** significant at 1% level; ** significant at 5% level; * significant at 10% level.

Table 2.12: Characteristics of Men with DANAE=1 vs. DANAE=0 at Baseline

	Pooled				Panel			
	DANAE=1	**DANAE=0**	**ND**	**P-value**	**DANAE=1**	**DANAE=0**	**ND**	**P-value**
# of kids under 6 years	1.46	1.35	-0.11	0.002***	1.52	1.37	-0.15	0.004***
Living in a couple	0.87	0.78	-0.25	0.000***	0.84	0.82	-0.04	0.000***
# of people in the hh	4.87	5.13	0.13	0.000***	4.56	4.70	0.09	0.101
Hh head	0.86	0.75	-0.27	0.000***	0.88	0.80	-0.23	0.000***
Education	3.65	3.17	-0.17	0.000***	3.83	3.38	-0.16	0.002***
Age	33.58	37.47	0.29	0.000***	32.61	36.01	0.27	0.000***
N. Observations	4415	1812			2291	878		

Note: This table splits the observations of men in S1 (at baseline) among those who had a DANAE and those who did not have a DANAE, and reports the differences among the two. DANAE: day agricultural and non agricultural employment, Hh: Household, ND: normalized difference: $\frac{\mu_1-\mu_2}{\sqrt{(\sigma_1^2+\sigma_2^2)/2}}$.
*** significant at 1% level; ** significant at 5% level; * significant at 10% level.

Table 2.13: Characteristics of Women with DANAE=1 vs. DANAE=0 at Baseline

	Pooled				Panel			
	DANAE=1	**DANAE=0**	**ND**	**P-value**	**DANAE=1**	**DANAE=0**	**ND**	**P-value**
# of kids under 6 years	1.24	1.50	0.23	0.001***	1.27	1.54	0.26	0.004***
Living in a couple	0.43	0.84	0.93	0.000***	0.38	0.82	-0.04	0.000***
# of people in the hh	5.05	5.08	0.01	0.876	4.41	4.73	0.19	0.109
Hh head	0.23	0.04	-0.57	0.000***	0.26	0.04	-0.66	0.000***
Education	2.97	3.26	0.09	0.192	3.06	3.53	0.16	0.118
Age	33.64	32.47	-0.09	0.147	33.37	30.64	-0.22	0.022**
N. Observations	340	6184			126	3234		

Note: This table splits the observations of women in S1 (at baseline) among those who had a DANAE and those who did not have a DANAE, and reports the differences among the two. DANAE: day agricultural and non agricultural employment, Hh: Household, ND: normalized difference: $\frac{\mu_1-\mu_2}{\sqrt{(\sigma_1^2+\sigma_2^2)/2}}$.
*** significant at 1% level; ** significant at 5% level; * significant at 10% level.

Table 2.14: Expenditures of Households in Control Localities (S3)

	Pooled	Panel
Weekly Food Expenditure		
Fruits	20.6	19.3
Grains	54.6	53.7
Animal origin	24.2	24.1
Industrialized	28.8	28.0
Weekly Transportation Expenditure		
To school	0.6	0.7
Other transportation	6.8	5.8
Expenditure on clothes (6 months)	142.8	124.7
Do you have at home?		
Goats	0.4	0.4
Cows	0.4	0.3
Hens	3.6	3.6
Rabbits	0.0	0.4
Horses	0.1	0.1
Donkeys	0.2	0.2
Oxen	0.0	0.2
N. Households	1720	1141

Note: This table reports data about expenditure and animal ownership for households in the pooled and panel samples in control localities in Oct 1998 (S3). Amounts are in real pesos of Oct 1998.

2.B Results with "$sec_{i,t} = 0$" restricted

This Appendix includes the results for a robustness check, where I restrict the definition of $sec_{i,t}$ (see Subsection 2.4.1 for details). Table 2.15 shows the effect on work, Table 2.16 on DANAE and Tables 2.17 & 2.18 the effect on the number of hours worked per week in a DANAE. Results are qualitatively equal to those obtained in the main text for the original definition

of $sec_{i,t}$.
There is, nevertheless, a difficulty with the measurement of the effect of PROGRESA on the number of hours worked per week in a DANAE (see Subsection 2.5.2 for the empirical strategy). Table 2.17 shows the impact of PROGRESA on DANAE for those who had a DANAE in $S1$ (as Table 2.5 does for the original definition of $sec_{i,t} = 0$ in the main text). The effect of PROGRESA on the probability to have a DANAE in $S3$ for those who had a DANAE in $S1$ is small and non significant. Nevertheless, the effect is significantly negative in $S5$, that is, PROGRESA had a negative effect (of 3.2-3.7 percentage points) on the probability of having a DANAE in $S5$ for those who had a DANAE in $S1$. This implies that the sample used to estimate the effect of PROGRESA on the number of hours worked in $S5$ (second set of lines of Table 2.18) is selected: the probability to belong to the sample is higher for people from control localities than from treated localities, and therefore the estimates for $S5$ may be biased.

Table 2.15: Impact of PROGRESA on the Probability of Working [$sec_{i,t} = 0$ restricted]

	MEN			WOMEN		
	Pooled	**Panel**	**Panel (FE)**	**Pooled**	**Panel**	**Panel (FE)**
Baseline						
β_T	-0.014	-0.007	-0.007	-0.022	-0.018	-0.018
	(.010)	(.012)	(.012)	(.019)	(.015)	(.015)
Dynamic Effects						
β_{T3} (in $t = 3$)	-0.009	-0.002	-0.002	-0.027	-0.023	-0.023
	(.012)	(.014)	(.014)	(.022)	(.018)	(.018)
β_{T4} (in $t = 4$)	-0.020	-0.014	-0.014	-0.026	-0.024	-0.024
	(.012)	(.014)	(.014)	(.019)	(.017)	(.017)
β_{T5} (in $t = 5$)	-0.013	-0.006	-0.006	-0.010	-0.007	-0.007
	(.010)	(.013)	(.013)	(.023)	(.019)	(.019)
Heterogeneous Effects						
β_T (for GA_i=0)	-0.020	-0.013	-0.014	-0.025	-0.021	-0.021
	(.016)	(.017)	(.017)	(.020)	(.018)	(.018)
$\beta_T + \beta_{TG}$ (for GA_i=1)	-0.012	0.000	0.001	-0.021	-0.015	-0.015
	(.010)	(.011)	(.011)	(.023)	(.020)	(.020)
Pre-Program Level	0.936	0.940	0.940	0.116	0.102	0.102
N. Obs	16545	11336	11336	17337	12024	12024

Note: This table reports the effect of PROGRESA on the probability of working. Treated individuals are those who live in treated localities. I modify the definition of $sec_{i,t} = 0$, I change the first point of the definition so that it reads: "there have been no kids of ages between **11** to 17 since Oct 1997 ($t = 1$) and up to t". In the first column I report the results of an OLS regression for a sample that includes all valid observations of men for which $sec_{i,t} = 0$. In the second column the results of an OLS regression for all valid observations of men who have $sec_{i,t} = 0$ in all the surveys. In the third one, I use the same sample as before but I include individual fixed effects. In the fourth-sixth columns I report the results of the same estimations for women. Errors are clustered at the locality level and reported in parenthesis. See the main text for the definition of GA_i.

*** significant at 1% level; ** significant at 5% level; * significant at 10% level.

Table 2.16: Impact of PROGRESA on the probability of having a DANAE [$sec_{i,t} = 0$ restricted]

	MEN			WOMEN		
	Pooled	**Panel**	**Panel (FE)**	**Pooled**	**Panel**	**Panel (FE)**
Baseline						
β_T	0.035	0.016	0.016	-0.002	-0.004	-0.004
	(.0230)	(.027)	(.027)	(.007)	(.007)	(.007)
Dynamic Effects						
β_{T3} (in $t = 3$)	0.052*	0.020	0.021	-0.004	-0.007	-0.008
	(.029)	(.032)	(.032)	(.008)	(.009)	(.009)
β_{T4} (in $t = 4$)	0.027	0.016	0.017	-0.002	-0.004	-0.004
	(.025)	(.029)	(.029)	(.009)	(.010)	(.010)
β_{T5} (in $t = 5$)	0.020	0.011	0.012	0.001	-0.002	-0.001
	(.028)	(.033)	(.033)	(.009)	(.009)	(.009)
Heterogeneous Effects						
β_T (for GA_i=0)	0.044	0.028	0.029	0.004	0.004	0.004
	(.028)	(.032)	(.032)	(.010)	(.010)	(.010)
$\beta_T + \beta_{TG}$ (for GA_i=1)	0.027	0.001	0.001	-0.007	-0.014	-0.014
	(.026)	(.033)	(.033)	(.009)	(.010)	(.010)
Pre-Program Level	0.674	0.466	0.466	0.059	0.049	0.049
N. Obs	16510	11317	11317	17219	11973	11973

Note: This table replicates Table 2.15, with day agricultural or nonagricultural employment (DANAE) as dependent variable. See Table 2.15 for details.

Table 2.17: Effect of PROGRESA on DANAE for those with a DANAE at baseline [$sec_{i,t} = 0$ restricted]

	Pooled	**Panel**	**Panel(FE)**
Baseline	-0.014	-0.025	-0.025
β_T	(.015)	(.015)	(.015)
Dynamic effects			
β_{T3} (in $t = 3$)	0.002	-0.018	-0.017
	(.022)	(.024)	(.023)
β_{T5} (in $t = 5$)	-0.037**	-0.033*	-0.032*
	(.018)	(.019)	(.019)
N. Obs	9256	6091	6091

Note: This table reports the effect of PROGRESA on the probability of having a day agricultural or a nonagricultural employment (DANAE) in S3/S5 for those who had a DANAE in S1 (no data about the number of hours worked is reported in S4). Treated individuals are those who live in treated localities. I modify the definition of $sec_{i,t} = 0$, I change the first point of the definition so that it reads: "there have been no kids of ages between **11** to 17 since Oct 1997 ($t = 1$) and up to t". In the first column I report the results of an OLS regression for a sample that includes all valid observations of men for which $sec_{i,t} = 0$ and who had a DANAE in S1. In the second column the results of an OLS regression for all valid observations of men who have $sec_{i,t} = 0$ in all the surveys and who had a DANAE in S1. In the third column, I use the same sample as before but I include individual fixed effects. Errors are clustered at the locality level and reported in parenthesis.

*** significant at 1% level; ** significant at 5% level; * significant at 10% level.

Table 2.18: Effect of PROGRESA on the number of hours worked [$sec_{i,t} = 0$ restricted]

	Pooled	**Panel**	**Panel (FE)**
β_{T3} (in $t = 3$)	0.262	0.604	0.613
	(.964)	(1.132)	(1.130)
Pre-Program Level	43.48	43.25	43.25
N. Obs	5037	3066	3066
β_{T5} (in $t = 5$)	-0.607	-0.482	-0.470
	(1.001)	(1.100)	(1.098)
Pre-Program Level	43.78	43.61	43.61
N. Obs	4465	3404	3404

Note: This table reports the effect of PROGRESA on the number of hours worked per week for men who had a day agricultural or nonagricultural employment (DANAE) in S1 and who also had it in S3/S5, respectively. Treated individuals are those who live in treated localities. I modify the definition of $sec_{i,t} = 0$, I change the first point of the definition so that it reads: "there have been no kids of ages between **11** to 17 since Oct 1997 ($t = 1$) and up to t". In the first column I report the results of an OLS regression for a sample that includes all valid observations of men for which $sec_{i,t} = 0$ and who had a DANAE in S1 and also have it in S3/S5, respectively. In the second column the results of an OLS regression for all valid observations of men who have $sec_{i,t} = 0$ in all the surveys and who had a DANAE in S1 and who also have it in S3/S5 respectively. In the third column, I use the same sample as before but I include individual fixed effects. Errors are clustered at the locality level and reported in parenthesis. *** significant at 1% level; ** significant at 5% level; * significant at 10% level.

2.C Results for the Entire Sample

This Appendix replicates Tables 2.3, 2.4, 2.5 and 2.6 of the main text for the *whole* sample of PROGRESA. That is, for all adult agents regardless of their value of $sec_{i,t}$ (see Section 2.4 for the definition of $sec_{i,t}$). Results of Tables 2.19 and 2.20 are similar to what was previously found by Skoufias et al. (2001) and Skoufias and di Maro (2008). They are, all in all, coherent with no negative effect on the extensive margin. If something, PROGRESA had a positive effect on DANAE for men, however this effect seems to be important at the beginning (S3) and to decrease afterwards (S4 and S5).

There is, nevertheless, a difficulty with the measurement of the effect of PROGRESA on the number of hours worked per week in a DANAE (see Subsection 2.5.2 for the empirical strategy). Table 2.21 shows the impact of PROGRESA on DANAE for those who had a DANAE in $S1$ (as Table 2.5 does for people with $sec_{i,t} = 0$ in the main text). The effect of PROGRESA on the probability to have a DANAE in $S3$ for those who had a DANAE in $S1$ is small and non significant. Nevertheless, the effect is significantly negative (at 10% level) in $S5$ for the pooled sample. PROGRESA had a negative effect of 3 percentage points on the probability of having a DANAE in $S5$ for people in the pooled sample who had a DANAE in $S1$. This implies that the pooled sample used to estimate the effect of PROGRESA on the number of hours worked in $S5$ (second set of lines of Table 2.22) is selected: the probability to belong to the sample is higher for people from control localities than from treated localities, and therefore the estimates for $S5$ may be biased.

Table 2.21 shows the impact of PROGRESA on DANAE for those who had a DANAE in $S1$. The effect of PROGRESA on the probability to have a DANAE in $S3$ for those who had a DANAE in $S1$ is small and non significant. But, the effect is significantly negative in $S5$ for the pooled sample. PROGRESA had a negative effect of 3 percentage points on the probability of having a DANAE in $S5$ for those who had a DANAE in $S1$, this effect is significant at 10% level. This implies that the sample used to estimate the effect of PROGRESA on the number of hours worked in $S5$ (second set of lines of Table 2.22) could be slightly selected: the probability to belong to the sample is higher for people from control localities than from trated localities, and therefore the estimates for $S5$ may be biased.

Table 2.19: Impact of PROGRESA on the Probability of Working [full sample]

	MEN			WOMEN		
	Pooled	**Panel**	**Panel (FE)**	**Pooled**	**Panel**	**Panel (FE)**
Baseline						
β_T	-0.003	0.003	0.003	-0.013	-0.014	-0.014
	(.007)	(.007)	(.007)	(.015)	(.014)	(.014)
Dynamic Effects						
β_{T3} (in $t = 3$)	0.003	0.008	0.008	-0.014	-0.017	-0.017
	(.008)	(.008)	(.008)	(.016)	(.016)	(.016)
β_{T4} (in $t = 4$)	-0.011	-0.005	-0.004	-0.013	-0.011	-0.011
	(.008)	(.009)	(.009)	(.015)	(.015)	(.015)
β_{T5} (in $t = 5$)	-0.001	0.006	0.006	-0.013	-0.013	-0.013
	(.008)	(.008)	(.008)	(.018)	(.017)	(.017)
Pre-program Level	0.927	0.936	0.936	0.143	0.130	0.130
N. Obs	51158	39784	39784	52871	41652	41652

Note: This table reports the effect of PROGRESA on the probability of working. Treated individuals are those who live in treated localities. In the first column I report the results of an OLS regression for a sample that includes all valid observations of men (not only those with $sec_{i,t} = 0$) . In the second column the results of an OLS regression for all valid observations of men who can be observed throughout the four surveys. In the third column, I use the same sample as before but I include individual fixed effects. In the fourth-sixth columns I report the results of the same estimations for women. Errors are clustered at the locality level and reported in parenthesis.

*** significant at 1% level; ** significant at 5% level; * significant at 10% level.

Table 2.20: Impact of PROGRESA on the probability of having a DANAE [full sample]

	MEN			WOMEN		
	Pooled	**Panel**	**Panel (FE)**	**Pooled**	**Panel**	**Panel (FE)**
Baseline						
β_T	0.045**	0.037	0.038	0.005	0.005	0.005
	(.021)	(.023)	(.023)	(.006)	(.005)	(.005)
Dynamic Effects						
β_{T3} (in $t = 3$)	0.066**	0.056**	0.056**	0.008	0.006	0.006
	(.027)	(.028)	(.028)	(.007)	(.006)	(.006)
β_{T4} (in $t = 4$)	0.037	0.030	0.031	0.003	0.004	0.004
	(.024)	(.025)	(.025)	(.007)	(.006)	(.006)
β_{T5} (in $t = 5$)	0.028	0.026	0.026	0.005	0.005	0.005
	(.026)	(.028)	(.028)	(.007)	(.007)	(.007)
Pre-program Level	0.674	0.466	0.466	0.059	0.049	0.049
N. Obs	51015	39688	39688	52676	41491	41491

Note: This table replicates Table 2.19, with day agricultural or nonagricultural employment (DANAE) as dependent variable. See Table 2.19 for details.

Table 2.21: Effect of PROGRESA on DANAE for those with a DANAE at Baseline [full sample]

	Pooled	**Panel**	**Panel(FE)**
Baseline	-0.008	-0.013	-0.013
β_T	(.015)	(.015)	(.015)
Dynamic effects			
β_{T3} (in $t = 3$)	0.011	-0.002	-0.002
	(.023)	(.022)	(.022)
β_{T5} (in $t = 5$)	-0.030*	-0.024	-0.024
	(.016)	(.017)	(.017)
N. Obs	26394	20220	20220

Note: This table reports the effect of PROGRESA on the probability of having a day agricultural or a nonagricultural employment (DANAE) in S3/S5 for those who had a DANAE in S1 (no data about the number of hours worked is reported in S4). Treated individuals are those who live in treated localities. In the first column I report the results of an OLS regression for a sample that includes all valid observations of men (not only those with $sec_{i,t} = 0$) who had a DANAE in S1. In the second column the results of an OLS regression for all valid observations of men who can be observed throughout the four surveys and who had a DANAE in S1. In the third column, I use the same sample as before but I include individual fixed effects. Errors are clustered at the locality level and reported in parenthesis.

*** significant at 1% level; ** significant at 5% level; * significant at 10% level.

Table 2.22: Effect of PROGRESA on the Number of Hours Worked per Week [full sample]

	Pooled	**Panel**	**Panel (FE)**
β_{T3} (in $t = 3$)	0.149	0.521	0.520
	(.808)	(.852)	(.851)
Pre-Program Level	43.60	43.37	43.37
N. Obs	12670	9750	9750
β_{T5} (in $t = 5$)	0.405	0.418	0.428
	(.770)	(.779)	(.779)
Pre-Program Level	43.86	43.65	43.65
N. Obs	12492	10736	10736

Note: This table reports the effect of PROGRESA on the number of hours worked per week for men who had a day agricultural or nonagricultural employment (DANAE) in S1 and who also had it in S3/S5, respectively. Treated individuals are those who live in treated localities. In the first column I report the results of an OLS regression for a sample that includes all valid observations of men (not only those with $sec_{i,t} = 0$) who had a DANAE in S1 and also have it in S3/S5, respectively. In the second column the results of an OLS regression for all valid observations of men who can be observed throughout the four surveys, had a DANAE in S1 and who also have it in S3/S5 respectively. In the third column, I use the same sample as before but I include individual fixed effects. Errors are clustered at the locality level and reported in parenthesis.

*** significant at 1% level; ** significant at 5% level; * significant at 10% level.

2.D Threats to Identification and Falsification Tests

In this Appendix I try to rule out some threats to identification (see Section 2.6 for details).

Table 2.23: Prices of Consumption Goods

	Obs.	Villages	Control	Treat	t-stat	P-value
Kg tomatoe	757	413	6.7	6.9	1.11	0.269
Kg onion	751	406	5.1	5.6	1.56	0.120
Kg potatoe	668	382	6.0	6.6	2.45	0.015**
Kg carrot	229	191	4.0	4.2	0.62	0.538
Kg orange	383	276	3.2	3.0	-0.82	0.415
Kg banana	542	350	3.6	3.7	0.93	0.352
Kg apple	322	250	9.3	9.8	1.52	0.130
Kg tortillas	239	198	3.6	3.6	-0.42	0.678
Kg rice	1065	473	6.5	6.5	0.03	0.975
Kg meat of chicken	376	278	18.6	19.4	1.37	0.171
Kg meat of cow	208	185	26.8	26.3	-0.36	0.719
Kg beans	938	459	9.6	9.7	0.38	0.703
Kg eggs	968	463	9.1	9.1	0.05	0.960
L of milk	682	398	5.9	6.0	0.45	0.653
Kg sugar	1092	479	5.6	5.6	0.39	0.698

Note: Errors are clustered at the locality level. All prices are expressed in Oct 1998 (S3) real pesos. Information is taken from the ENCEL surveys: Cuestionario de la localidad.
*** significant at 1% level; ** significant at 5% level; * significant at 10% level.

Table 2.24: Ownership Status of the House

	Pooled	**Panel**
Own house (fully paid)	90.71	90.69
Own house (paying)	0.28	0.38
Rented	0.5	0.41
Lent	8.23	8.35
Received in exchange of something	0.16	0.09
Others	0.09	0.06
Does not know/No answer	0.03	0.02
Total	12773	6541

Note: Data taken from $S1$ for observations with "$sec_{i,t} = 0$".

Table 2.25: Wages Reported at the Locality Level

	Obs.	**Localities**	**Control**	**Treat**	**t-statistic**
Legal minimum daily agricultural w.	1497	505	30.8	30.6	-0.17
Real daily agricultural w (men)	1449	504	29.4	29.2	-0.17
Real daily agricultural w (women)	619	349	26.5	26.9	0.29

Note: w: wage. Errors are clustered at the locality level. Data on wages is available for S3, S4 and S5. All prices are expressed in Oct 1998 (S3) pesos. This information is taken from the ENCEL surveys: Cuestionario de la localidad.

Table 2.26: Effect of PROGRESA on Wages per Hour

	Pooled	**Panel**	**Panel (FE)**
S3	0.206	0.234	0.261*
	(.131)	(.154)	(.154)
Pre-Program Level	4.39	4.07	4.07
N. Obs	4927	3010	3010
S5	0.180	0.224	0.216
	(.142)	(.148)	(.149)
Pre-Program Level	4.31	4.11	4.11
N. Obs	4363	3348	3348

Note: This table reports the effect of PROGRESA on the wage per hour for men who had a DANAE in S1 and also have it in S3/S5, respectively. I restrict the analysis for men within the 99% of hourly wage range, that is, for all who had a real hourly wage smaller than 26 pesos per hour. All figures are in real pesos of Oct. 1998. To compute the wages I divide the earnings per week by the total number of hours worked per week.

*** significant at 1% level; ** significant at 5% level; * significant at 10% level.

Table 2.27: Effect of PROGRESA on Non-Eligibles

	MEN			WOMEN		
Baseline	**Pooled**	**Panel**	**Panel (FE)**	**Pooled**	**Panel**	**Panel (FE)**
Work	0.000	0.009	0.009	-0.030*	-0.001	-0.002
	(.009)	(.012)	(.012)	(.017)	(.026)	(.026)
Pre-Program Level	0.939	0.948	0.948	0.249	0.269	0.269
N. Obs	17804	7436	7436	16841	6996	6996
DANAE	0.018	0.008	0.008	-0.009	-0.001	0.003
	(.023)	(.032)	(.032)	(.010)	(.017)	(.010)
Pre-Program Level	0.575	0.520	0.520	0.103	0.099	0.099
N. Obs	17754	7418	7418	16762	6969	6969

Note: This table reports the effect of PROGRESA on the probability of working and on the probability of having a day agricultural or a nonagricultural employment (DANAE). I restrict the analysis to people who were classified as non poor, and therefore who were not eligible to receive the cash transfers of PROGRESA. Treated individuals are those who live in treated localities. In the first column I report the results of an OLS regression for a sample that includes all valid observations of men for which $sec_{i,t} = 0$. In the second column the results of an OLS regression for all valid observations of men who have $sec_{i,t} = 0$ in all the surveys. In the third column, I use the same sample as before but I include individual fixed effects. In the fourth-sixth columns I report the results of the same estimations for women. Errors are clustered at the locality level and reported in parenthesis.

*** significant at 1% level; ** significant at 5% level; * significant at 10% level.

Table 2.28: Effect of PROGRESA on the Poorest Half of Non-Eligibles

	MEN			WOMEN		
Baseline	**Pooled**	**Panel**	**Panel (FE)**	**Pooled**	**Panel**	**Panel (FE)**
Work	0.002	0.005	0.007	-0.034	-0.023	-0.023
	(.012)	(.018)	(.018)	(.020)	(.035)	(.035)
Pre-Program Level	0.937	0.944	0.944	0.230	0.258	0.258
N. Obs	8773	3116	3116	8407	2940	2940
DANAE	0.019	0.022	0.025	-0.017	0.002	0.002
	(.027)	(.041)	(.040)	(.014)	(.029)	(.029)
Pre-Program Level	0.625	0.580	0.580	0.097	0.090	0.090
N. Obs	8753	3112	3112	8369	2932	2932

Note: This table replicates Table 2.27, but here I restrict the analysis to the poorest half (using the means index) of people who were classified as non poor, and therefore who were not eligible to receive the cash transfers of PROGRESA. See Table 2.27 for details.

2.E Heterogeneity

In this Appendix I report two sets of results, to see whether the effects of PROGRESA are different for different subgroups of the sample. For this purpose, I use specification (2.3).

In the first two tables I use the means index to split the sample in two: the poorest and the less poor. In the second set of tables I I explore whether the effect of PROGRESA is different among persons who were household heads at baseline and those who were not. See Subsection 2.5.1 for comments about these four tables.

Table 2.29: Effect of PROGRESA on the probability of working; Heterogeneity with respect to the Means Index

	MEN			WOMEN		
	Pooled	**Panel**	**Panel (FE)**	**Pooled**	**Panel**	**Panel (FE)**
Less Poor	-0.012	-0.001	-0.001	-0.038*	-0.029	-0.029
	(.011)	(.012)	(.012)	(.021)	(.021)	(.021)
Poorest	-0.019	-0.012	-0.012	0.003	0.000	0.000
	(.013)	(.017)	(.017)	(.023)	(.020)	(.020)
Pre-Program level	0.937	0.942	0.942	0.118	0.104	0.104
N. Obs	18360	12692	12692	19306	13472	13472

Note: This table reports the effect of PROGRESA on the probability of working for the poorest and for the less poor, separately. I run a regression similar to (2.3), but in this case I exploit the Means Index to see whether PROGRESA has a different effect on the poorest and the less poor . Both the poorest and the less poor were classified as "poor" and therefore are eligible to receive the benefits. Treated individuals are those who live in treated localities. In the first column I report the results of an OLS regression for a sample that includes all valid observations of men for which $sec_{i,t} = 0$. In the second column the results of an OLS regression for all valid observations of men who have $sec_{i,t} = 0$ in all the surveys. In the third column, I use the same sample as before but I include individual fixed effects. In the fourth-sixth columns I report the results of the same estimations for women. Errors are clustered at the locality level and reported in parenthesis.
*** significant at 1% level; ** significant at 5% level; * significant at 10% level.

Table 2.30: Effect of PROGRESA on the probability of having a DANAE; Heterogeneity with respect to the Means Index

	MEN			WOMEN		
	Pooled	**Panel**	**Panel (FE)**	**Pooled**	**Panel**	**Panel (FE)**
Less Poor	0.039	0.039	0.040	-0.002	-0.003	-0.003
	(.024)	(.030)	(.030)	(.009)	(.010)	(.010)
Poorest	0.041	0.019	0.019	0.004	0.002	0.002
	(.031)	(.035)	(.035)	(.009)	(.009)	(.009)
Pre-Program level	0.714	0.723	0.723	0.045	0.038	0.038
N. Obs	18323	12671	12671	19231	13410	13411

Note: This table replicates Table 2.29, with day agricultural or nonagricultural employment (DANAE) as dependent variable. See Table 2.29 for details.

Table 2.31: Effect of PROGRESA on the probability of working; Heterogeneity with respect to whether the person was household head at baseline (S1)

	MEN			WOMEN		
	Pooled	**Panel**	**Panel (FE)**	**Pooled**	**Panel**	**Panel (FE)**
Household Heads	-0.009	-0.002	-0.002	-0.047	-0.057	-0.057
	(.0081)	(.0106)	(.0106)	(.0561)	(.0730)	(.0730)
Non Household Heads	-0.037	-0.034	-0.035	-0.017	-0.014	-0.014
	(.0299)	(.0373)	(.0373)	(.0192)	(.0183)	(.0183)
Pre-Program level	0.937	0.942	0.942	0.118	0.104	0.104
N. Observations	18360	12692	12692	19306	13472	12692

Note: This table reports the effect of PROGRESA on the probability of working for the those who were household heads at baseline and those who were not, separately. Treated individuals are those who live in treated localities. In the first column I report the results of an OLS regression for a sample that includes all valid observations of men for which $sec_{i,t} = 0$. In the second column the results of an OLS regression for all valid observations of men who have $sec_{i,t} = 0$ in all the surveys. In the third column, I use the same sample as before but I include individual fixed effects. In the fourth-sixth columns I report the results of the same estimations for women. Errors are clustered at the locality level and reported in parenthesis.

*** significant at 1% level; ** significant at 5% level; * significant at 10% level.

Table 2.32: Effect of PROGRESA on the probability of having a DANAE; Heterogeneity with respect to whether the person was household head at baseline (S1)

	MEN			WOMEN		
	Pooled	**Panel**	**Panel (FE)**	**Pooled**	**Panel**	**Panel (FE)**
Household Heads	0.0437*	0.032	0.032	0.008	-0.009	-0.008
	(.0231)	(.0262)	(.0262)	(.0524)	(.0694)	(.0694)
Non Household Heads	0.007	0.017	0.018	0.001	0.000	0.000
	(.0415)	(.0516)	(.0515)	(.0070)	(.0069)	(.0069)
Pre-Program level	0.714	0.723	0.723	0.045	0.038	0.038
N. Observations	18823	12671	12671	19231	13410	13410

Note: This table replicates Table 2.31, with day agricultural or nonagricultural employment (DANAE) as dependent variable. See Table 2.31 for details.

2.F Balance Check

The following table presents a balance check for the observations that I use throughout the paper, i.e those with $sec_{i,t} = 0$. The first four sets of columns are for observations in the "pooled sample" (present in $S1$,$S3$, $S4$ and $S5$ respectively) and the last set of columns for the "panel sample" (those who are present in the four surveys).

Table 2.33: Balance Check of Characteristics at $t = 1$

	S1				S3				S4				S5				Panel			
Variables at Baseline	**C**	**T**	**ND**	**PV**	**C**	**T**	**ND**	**PV**	**C**	**T**	**ND**	**PV**	**C**	**T**	**ND**	**PV**	**C**	**T**	**ND**	**PV**
Sex (men)	0.49	0.49	-0.01	0.32	0.49	0.49	-0.01	0.43	0.48	0.49	-0.01	0.34	0.48	0.49	-0.01	0.18	0.48	0.49	-0.01	0.34
Work	0.51	0.53	-0.06	0.02**	0.51	0.53	-0.04	0.09*	0.50	0.52	-0.04	0.09*	0.50	0.52	-0.04	0.10	0.50	0.52	-0.04	0.08*
Health insurance	0.02	0.01	0.03	0.23	0.02	0.01	0.04	0.14	0.02	0.01	0.03	0.33	0.02	0.01	0.04	0.17	0.02	0.01	0.03	0.28
Household (hh) head	0.43	0.43	0.00	0.93	0.44	0.43	0.01	0.45	0.44	0.43	0.00	0.74	0.44	0.43	0.01	0.43	0.44	0.44	0.01	0.33
Living in a couple	0.84	0.83	0.03	0.40	0.85	0.84	0.04	0.23	0.86	0.85	0.05	0.20	0.86	0.85	0.04	0.31	0.88	0.86	0.06	0.11
DANAE=1	0.39	0.36	0.05	0.11	0.39	0.36	0.06	0.06*	0.39	0.36	0.05	0.10	0.39	0.36	0.05	0.14	0.39	0.36	0.05	0.14
Years of education	3.33	3.40	-0.02	0.69	3.41	3.49	-0.03	0.64	3.49	3.52	-0.01	0.87	3.51	3.61	-0.04	0.55	3.52	3.65	-0.04	0.46
# of people in the hh	4.99	5.02	-0.02	0.68	5.26	5.29	-0.01	0.72	5.30	5.28	0.01	0.79	4.64	4.70	-0.04	0.41	4.63	4.67	-0.02	0.59
Hours worked p/week	21.74	22.65	-0.04	0.19	21.65	22.20	-0.02	0.46	21.35	21.74	-0.02	0.57	21.55	21.91	-0.02	0.63	21.41	21.77	-0.02	0.62
Age	33.52	33.64	-0.01	0.75	32.88	33.03	-0.01	0.72	32.61	32.83	-0.02	0.62	32.25	32.34	-0.01	0.84	32.06	32.13	-0.01	0.88
Means Index	648.52	646.59	0.03	0.68	649.91	648.85	0.01	0.83	652.06	650.14	0.03	0.70	654.02	653.59	0.01	0.84	653.31	652.89	0.01	0.93
Joint F-test				0.184				0.107				0.169				0.112				0.119

Note: This table reports the results of a balance check, for each column "C" is the mean in control localities, and "T" the mean in treated localities. ND: normalized difference $\frac{\mu_1-\mu_2}{\sqrt{(\sigma_1^2+\sigma_2^2)/2}}$ (Imbens and Rubin, 2015 pg. 310), PV: P-Value. All the variables are at baseline. DANAE: day agricultural or nonagricultural employment. The table is organized in five sets of columns. The first set provides the balance check for all the observations (12773) present in $S1$. The second one, the balance check for all the observations (9978) present in $S3$, etc. The last set presents the balance check for observations of people who were present through all the four surveys (and therefore belong to the panel sample). Number of observations: S1:12 773, S3: 9978, S4: 8003, S5: 6912, Panel: 6541.

*** significant at 1% level; ** significant at 5% level; * significant at 10% level

Chapter 3

The Ethical Views of Rawls, Sen and Van Parijs Regarding Citizens' Access to an Income[1]

Abstract This chapter presents and discusses the ethical views of three liberal-egalitarian political philosophers, namely, John Rawls, Amartya Sen and Philippe Van Parijs, regarding citizen's access to an income. The three authors share a similar conception of justice. Yet, they have different views regarding citizen's source of entitlement; this leads their respective approaches to have different policy implications. Analyzing income access is important because it is a crucial determinant of citizen's opportunities in life; however, it is not the only one. Thus, to better understand the views of the authors a broader contextualization is needed. This chapter also compares their viewpoints regarding two important matters in which they (mostly Rawls and Van Parijs) have different stands, namely, wealth and income inequality and fair equality of opportunity.

[1]I would like to thank Philippe Van Parijs, Simon Birnbaum, Danielle Zwarthoed, Adolfo Rodriguez-Herrera, Bruno Van der Linden, Muriel Dejemeppe and Marion Collewet for very useful conversations and suggestions, and Yannick Vanderborght for his advice throughout the writing of this piece. Remaining errors are, of course, my own.

3.1 Introduction

The aim of this work is to present a succinct but deep synthesis of the views of three leading political philosophers, namely John Rawls, Amartya Sen and Philippe Van Parijs, regarding citizens' access to an income. Throughout the piece, their ethical positions will be spelled out, their differences regarding this concrete issue will be confronted, and the practical implications of their theories will be exposed. Towards the end, I will also provide my own views regarding several issues presented throughout the chapter, pointing to what I perceive as limitations or difficulties of their approaches.

Analyzing citizens' access to an income is relevant because income constitutes one of the major determinants of opportunities that people have in life. However, income is not the only determinant. In fact, providing a substantial income to every citizen might be costly in terms of other social and economic factors which affect opportunities as well. Thus, to have a broader picture of the ethical views of the authors it is important to know their arguments with respect to other determinants of opportunities. This is why in this piece I briefly present and discuss their contrasting positions with respect to wealth and income inequality (because of its effects on self-respect) and fair equality of opportunity (because of its effects on education).

As pointed out, the analysis is restricted to Ralws, Sen and Van Parijs, philosophers who are very often quoted in the debates about income security (see for instance Standing, 2005). The three of them belong to a stream of thought called liberal-egalitarianism, whose aim is to combine values of equality, personal freedom and responsibility and which constitutes the dominating modern egalitarian view (Cappelen and Tungodden, 2006).[2] Given that the three authors share the same liberal egalitarian framework, their analysis start from similar viewpoints. Yet, they differ in important ways which lead them to arrive to different conclusions. Because of this, the exercise of analyzing their positions could be helpful to articulate intuitions in liberal societies that still today struggle with the way of dealing with these issues.[3]

[2] They are not, of course, the only political philosophers meeting these characteristics. Others are, for example, Ronald Dworkin (Dworkin, 2000), Elizabeth Anderson (Anderson, 1999) and Philip Petit (Petit, 1999).

[3] Needless to say, the question about the way in which citizens should have access

This chapter intends to be self-contained. Therefore, it should suit well to readers who do not have previous knowledge of political philosophy but who are interested by the ethical underpinnings of the access to an income. It was written through the lens of an economist, and therefore could be particularly suited for students, scholars and/or practitioners in this field.

Economists often focus on the effects that public policies have on individual incentives. For instance, there is an extensive literature about the effects that providing cash to citizens (conditionally and/or unconditionally) has on labor supply decisions and about the impacts of cash transfers on health, education, inequality and growth. Several articles look at the effects on labor outcomes of providing (or increasing) unemployment benefits to unemployed workers, at whether the effects of transfers differ when people are poor, at the potential effects of means testing on take up rates, etc.[4]

However, at least as important as tackling these issues, it is to take a step back and to ask ourselves which are the requirements of justice. For example, is working the only legitimate way to have economic security? Is the wage determined by the market reflecting the contribution of workers to the final product? Which is the duty of society towards its members and which is the responsibility of citizens towards society?

These questions, which are approached throughout the current work, are typically not addressed by economists. However, in my opinion, it is important for economists to be aware of the debates that political philosophers have regarding these issues. Doing so is useful for interaction with

to an income is nowadays far from being settled, not even in developed economies in which there is still a high percentage of people who suffer from unemployment and who often are not even covered by unemployment benefits. So, for example, according to the World Social Security Report (International Labour Office, 2010, p.60), 80% of *high income* countries had a statutory program of unemployment protection, but only 39% of all the unemployed were covered. Coverage rates for countries with lower income are substantially smaller.

[4] About the effects of *unconditional* cash transfers on labor outcomes, see for instance the literature review contained in Mesén Vargas (2018). About the effect of *conditional* cash transfers on labor supply, and other indicators such as health, education, nutrition and growth see Fiszbein and Schady (2009) for a survey. About the effects of providing/increasing unemployment benefits on labor outcomes see Tatsiramos and van Ours (2014) for a survey. About the different effects that cash transfers can have on labor outcomes for poor vs. non poor people see Mesén Vargas and Van der Linden (2019). About the effect of means testing on take up rates see Hupkau and Maniquet (2018).

other social scientists and for keeping in mind the broad picture that public policy requires.

Two clarifications are in order. First, the present work has an ethical but very "policy-oriented" view. Therefore, I limit the analysis to the authors' views that are concretely linked to the issues treated here. Their theories, in particular the ones of Rawls and Sen, are extremely rich and have philosophical and political implications well beyond that.

Second, I restrict the analysis to a given country. This is admittedly a limitation, since I do not look at the implications that their theories have regarding global justice. Nevertheless, I choose to do this because the original and most elaborated formulations of Rawls and Van Parijs are circumscribed to a given economy; therefore circumscribing the analysis at the country level allows me to analyze more in detail their most spread and developed ideas. However, I would like to highlight that Sen is critical of the transcendental approach (which, according to Sen, 2009, p.5, focuses on what identifies as perfect institutional arrangements, rather than on relative comparisons of justice and injustice), to which Rawls and Van Parijs' theories belong, precisely because they tend to have a "global neglect".[5]

The remainder of the chapter is organized as follows. Section 3.2 highlights three general points of agreement between the authors; this helps to understand up to which point they share the same intuitions about justice. Section 3.3 outlines, at the risk of some oversimplification, their respective approaches to justice. This allows grasping the different implications that their views have from a public policy perspective. Section 3.4 presents what I consider their main source of disagreement: the source of entitlement to an income. Section 3.5 presents the views of the authors concerning, concretely, the practical ways in which individuals should have access

[5] "Perfect global justice through an impeccably just set of institutions, even if such a thing could be identified, would certainly demand a sovereign global state, and in the absence of such a state, questions of global justice appear to the transcendentalists to be unaddressable" (Sen, 2009, p.25). According to Sen, the transcendental institutionalism view has little room for the engagement on the elimination of outrageously unjust arrangements which would bring us closer to global justice (Sen, 2009, p.26-27 and 71-72). Rawls and Van Parijs' have later work in which they address the problem of justice in a more global, or at least international, manner. See Rawls (1999), Van Parijs (2007), and Van Parijs and Vanderborght (2017) chapter 8. For a critical comment of Van Parijs' unconditional basic income from a "global perspective" see Rothschild, 2001 and Steiner, 2003 and for a critique of Rawls' approach in this direction, see Sen (2009), chapter 6.

to income. Section 3.6 takes a step back, and sketches their views regarding inequality and equality of opportunity. As mentioned before, these two crucial issues allow assessing the implications of the author's views in a more integral manner. In Section 3.7 I provide my opinion regarding several matters that have been previously stated. I conclude with a synthesis of the main ideas that have been presented throughout the chapter.

3.2 Similarities

In this section, I start by highlighting three similarities among the approaches of Rawls, Sen and Van Parijs. First, their conceptions of justice give priority to freedom to achieve as opposed to achievements, thus, they confer a crucial role to the concept of responsibility. Second, their approaches to justice aim to be neutral, that is, they defend the right of citizens to have different conceptions of the lives that are worth living. Finally, they believe that the determination of the overall income of citizens cannot be left to the forces of the market alone and should be subordinated to some requirements. These similarities are at the core of their analysis and discussing them is useful to understand up to which point they have the same ethical intuitions about the requirements of justice.

3.2.1 Justice is About Freedom

What is social justice about? Before Rawls, utilitarianism was the background against which political philosophers thought about justice. Utilitarianism has many features, but one of the most salient ones is that it focuses on outcomes rather than on opportunities or freedom; on achievements rather than on the alternatives among which people have the real option to choose. Rawls' approach, justice as fairness, was the first well-structured and systematic alternative to utilitarianism (Kymlicka, 2002, p.53-55).[6] Rawls, Sen and Van Parijs belong to the group of what Sen

[6] As Hart highlights, after Rawls, there has been a marked shift away from the "once widely-accepted old faith that some form of utilitarianism, if only we could discover the right form, must capture the essence of political morality" (Hart, 1979, p.77) [Taken from Kymlicka, 2002, p.53].

calls "freedom-related thinkers"(Sen, 2009, p.65). They believe that justice should be about the freedom to choose, that "it is more appropriate to see the claims of individuals on the society (or the demands of equity or justice) in terms of freedom to achieve rather than actual achievements" (Sen, 1992, p.148).

This shift from outcomes to opportunities is significant, mostly because of the role it gives to individual and social responsibility. Rawls talks about a "social division of responsibility" in which society, citizens as a collective body, has concrete responsibilities linked to the opportunities that they make available to citizens. And in which citizens, as individuals, have the responsibility of revising and adjusting their ends and aspirations (Rawls, 1993, p.189).[7]

From their account of responsibility, we can infer that for these authors, individual preferences are not exogenous. People are, at least partially, responsible for shaping them. It is up to them to use wisely their opportunities. It would be misleading to see people as "passive carriers of desires" (Rawls, 1993, p.186).[8] Importantly, this does not deny that social conditions and natural talents have an important role in shaping preferences.[9] Social conditions and natural talents, together with brute luck, are what Rawls calls "the three kinds of contingencies": circumstances that shape life prospects, but for which people cannot be held responsible.

In one way or another the three authors stress the difference between matters for which people are responsible, and those for which they are not. The former gives rise to legitimate inequalities. As Sen states: "If the so-

[7] About this social division of responsibility, see also Sen, 2000, p.284-286.

[8] This allows the freedom-related approaches to get rid of the well-known problem of expensive tastes/adaptive preferences of which welfaristic approaches (among which utilitarianism) suffer. For a reflection about this, see among others Sen, 2000, p.62-63 and Van Parijs, 1995, p.50.

[9] "But what about the character and interests of individuals themselves? These are not fixed or given. A theory of justice must take into account how the aims and aspirations of people are formed; and doing this belong to the wider framework of thought in the light of which a conception of justice is to be explained. Now everyone recognizes that the institutional form of society affects its members and determines in large part the kind of persons they want to be as well as the kind of persons they are. The social structure also limits people's ambitions and hopes in different ways; for they will with reason view themselves in part according to their position in it and take account of the means and opportunities they can realistically expect" (Rawls, 1993, p.270).

cial arrangements are such that a responsible adult is given no less freedom (in terms of set comparisons) than others, but he still wastes the opportunities and ends up worse off than others, it is possible to argue that no unjust inequality may be involved" (Sen, 1992, p.148).[10] This is totally coherent with Van Parijs' view: "some people can justly have more than others by virtue of the preferences they have or the choices they made" Van Parijs (2009). Nevertheless, in practical terms, the distinction between matters for which agents are responsible and those for which they are not is complex. Mostly if, as is the case for these three authors, the analysis is restricted to the limits of what is practicable, that is, if it respects the constraints of availability of information (Rawls, 1993, p.182). A good deal of the analysis of these three authors consists in reflecting on how to arrange social and economic inequalities in such a way that the effects of contingencies (those for which agents are not responsible) are minimized and/or used to everyone's advantage.

3.2.2 Neutrality

The three authors defend the right of people to have different conceptions of the life that they want to live. Citizens have different moral, philosophical and religious standings, which could also change for the same person through life. For these three authors, the differences are unavoidable and even desirable. In fact, the important place that they give to freedom reveals respect for diversity, and an equal respect for everyone's plans and ideas of a life that is worth living.

Therefore, their conceptions of justice aim to be compatible or at least not in conflict with the different "comprehensive views"[11] that citizens could

[10] "John Rawls (1971) and other modern theorists of justice (such as Ronald Dworkin 1981) have tended to stress the need to see each person as being peculiarly responsible for matters over which she has control. In contrast, responsibility is not attributed—nor credit given—to a person for something she could not have changed (such as having rich or poor parents or having or lacking natural gifts). The lines are sometimes hard to draw, but there is much plausibility in that general differentiation." (ibid).

[11] For Rawls, a view is comprehensive when "it includes conceptions of what is of value in human life, and ideals of personal character, as well as ideals of friendship and of familial and associational relationships, and much else that is to inform our conduct, and in the limit to our life as a whole" (Rawls, 1993, p.13). The fact that a diversity of reasonable comprehensive doctrines is a permanent feature of a democratic society is

endorse.[12] Because of this, their conceptions of justice should be neutral. But what exactly does neutrality mean?

In the liberal tradition,[13] neutrality has been usually understood as neutrality of aim: "in the sense that its basic institutions and public policy are not to be designed to favor any particular permissible conception of the good" (Rawls, 1993, p.194). This implies that "the state is not to do anything intended to favor or promote any particular permissible idea of the good" (ibid, p.193). Van Parijs states that real libertarianism shares with other liberal egalitarian conceptions the "general postulate of neutrality or equal respect, that is, the view that what counts as a just society should not be determined on the basis of some particular substantive conception of the good life" (Van Parijs, 1995, p.28).

This does not mean that all ideas of the good are permissible. What is permissible and what is not is determined by the conception of justice itself. Therefore, permissible ideas of the good are those which are aligned with the requirements of justice.[14] For example, an idea of the good that attempts against the physical integrity of others is not permissible for any of these writers. To be clear, neutrality of aim does not prevent the conceptions of justice to have ideas of what is right and what is not, or from encouraging certain moral virtues, "the crucial point is that admitting these virtues into a political conception does not lead to the perfectionist state of a comprehensive doctrine" (Rawls, 1993, p.194).[15] Moreover, it does not prevent the principles of justice to have effects or influence on the ideas of the good that are going to endure through time, this is impracticable (ibid, p.193).

what Rawls calls "reasonable pluralism" (Rawls, 2001, p.40).

[12] For Rawls it is crucial, thus, to delimit the requirements of justice to the political domain, because comprehensive doctrines will not be able to gain the support that is required to have an overlapping consensus (Rawls, 1993, p.10).

[13] See for instance: Arneson, 1990, p.507-8, White, 1997, p.322, Torisky, 1993, p.291 and p.295, and van der Veen and Groot, 2019, p.169-170.

[14] This is what Rawls calls the "priority of right". See Lecture 5 of Rawls, 1993 and Rawls, 1988.

[15] According to Wall (2019), "perfectionists defend an account of the good that is objective in the sense that it identifies states of affairs, activities, and/or relationships as good in themselves and not good in virtue of the fact that they are desired or enjoyed by human beings".

3.2.3 Overall Income: The Market Cannot be Left Alone

The amount of the overall income that people receive is a first order question for the three authors. The material basis is a crucial determinant of the available options that individuals have in order to live the life that they want to live. Given its importance, all of them think that the determination of the overall income cannot be left to the forces of the market alone. The market can and should play a role, but certainly a delimited one.

So, for instance, Rawls does not fully endorse the familiar marginal productivity theory, for which each factor receives an income according to its contribution (measured by the sale price) to the output. In fact, without clear principles of justice in the background, the marginal productivity could be quite arbitrary. "The marginal product of labor depends upon supply and demand. What an individual contributes by his work varies with the demand of firms for his skills, and this in turn varies with the demand for the products of firms. An individual's contribution is also affected by how many offer similar talents. There is no presumption, then, that following the precept of contribution leads to a just outcome unless the underlying market forces, and the availability of opportunities which they reflect, are appropriately regulated" (Rawls, 1971, p.271).[16] For example, in a society with broad opportunities for all and free access to education, the "marginal contribution" of a physician would be smaller than in a society in which very few people had the opportunity to study medicine. Also, in a very unequal society, with some people being extremely rich, the demand for luxury goods, and therefore, its price, could be very high. This demand, and the corresponding "marginal contribution" of its producers, would arguably be smaller in a more equal society. These examples illustrate the necessity that Rawls ascribes to having higher order principles to which the market should subordinate.[17]

Sen is even more critical to the approach of rewarding based on the marginal contribution: "The identification of who has produced what is, in fact,

[16] Rawls also states: "the distribution resulting from voluntary market transactions (even if all the ideal conditions for competitive efficiency obtain) is not, in general, fair unless the antecedent distribution of income and wealth, as well as the structure of the system of markets, is fair" (Rawls, 1993, p.266). For a brief discussion about the allocative and distributive role of prices, see Rawls, 1971, p.241-242.

[17] For a discussion of why justice principles should have priority over "common sense precepts" see Rawls, 1971, p.267-273.

quite arbitrary in any integrated production structure. Production is an interdependent process involving the joint use of many resources, and there is in general no clear way of deciding which resource has produced what. The concept of the 'marginal product' of a resource is not really concerned with who has 'actually produced' what, but with guiding the allocation of resources by examining what would happen if one more unit of a resource were to be used (given all the other resources). To read in that counterfactual marginal story (what would happen if one more unit were applied, given everything else) an identification of who has 'in fact' produced what in the total output is to take the marginal calculus entirely beyond its purpose and depth" (Sen, 1992, p.119).[18]

For Van Parijs, beyond certain point, there is no reason why remuneration should match the contribution. "As soon as the economy produces more than is required to compensate the burden of productive work, distributing everything in proportion to productive effort would amount to overcompensate it" (Van Parijs, 1995, p.165). Therefore, according to him, people are not entitled to whatever the market happens to pay them.

This being said, it is important to highlight that the three authors are very concerned with efficiency. They would not be up for a system in which everyone receives the same overall income, regardless of their productivity or contribution. They understand that inequalities in overall incomes could play an important role to provide incentives so that people train their skills and undertake the costs of postponement. Inequalities in overall income are also important for people to be ready to perform unpleasant tasks, tasks that involve risk, or to accept burdens of responsibility. This implies that a positive correlation between contribution and remuneration is reasonable for all of them. According to Van Parijs, real-libertarianism, along with other left-liberal positions (among which, one could include Sen's and Rawls'), is "an attempt to articulate the importance we ascribe to liberty, equity and efficiency" (ibid, p. 28).

[18] For a more detailed comment about this, see Sen (1985) especially p.14-17. Where he also states: "We cannot begin to assess the moral standing of the market mechanism without first asking, 'To what intrinsically valuable things is the market mechanism instrumental?' We have to place the role of markets in a fuller moral context" (ibid, p.2) and "the moral standing of the market mechanism has to be related to results, and it is, thus, derivative and contingent" (ibid, p.17).

3.3 Their Approaches to Justice

As was just pointed out, the three authors agree on the fact that the determination of total income cannot be left to the forces of the market alone. Nevertheless, they have different views regarding the way in which people should have access to an income. The purpose of this section is to present their respective approaches to justice; this allows to understand the ethical underpinnings of their proposals.

Some clarifications are in order. Ralws' "justice as fairness" is very rich and broad. I focus mostly on the ideas that are linked to the access to income or that allow grasping its relative importance. I mainly follow Rawls (2001), because it is his last and most summarized exposition. Nevertheless, most of what is included here was already present in the 1971 original version of A Theory of Justice. Sen's "capability approach" to justice is comparative,[19] therefore it is not simple to extract from his analysis general postulates; what I do is to discuss three components that he constantly considers when reflecting about justice. The insights are mostly taken from Sen (1992), Sen (2000) and Sen (2009). Finally, Van Parijs' "real libertarianism", is more concrete. As remarked by Van Parijs himself, it is not a "fully worked out alternative to Rawls' theory of justice" (Van Parijs, 1995, p.243). His analysis is mainly focused in examining divergences related to Rawls' second principle. I summarize his original exposition as presented in Van Parijs (1995) and mention some slight changes in exposition of later writings.

3.3.1 Rawls' Justice as Fairness

Rawls' justice as fairness most fundamental idea is that of society as a fair system of social cooperation over time (Rawls, 2001, p.5). Citizens are regarded as fully cooperating members of society,[20] and as having "two

[19] That is, he does not focus on trying to search for 'the nature of the just' and for social characteristics that cannot be transcended in terms of justice, as transcendentalists do. Instead, he tries to find alternatives that are "less unjust" than others and he is concerned by actual societies. His approach is more practical and oriented into ways of judging how to reduce injustice and advance justice (Sen, 2009, p.5).

[20] "Given our aim I put aside for the time being these temporary disabilities and also permanent disabilities or mental disorders so severe as to prevent people from being co-

moral powers": the capacity for a sense of justice and the capacity for a conception of the good (that is, to conceive and pursue a conception of a life that is worth living for them). Moreover, they identify themselves as "self-authenticating sources of valid claims", which means that they regard themselves as being entitled to make valid claims on their institutions. All this makes them free and equal (ibid, p.18-24).

The goal of the principles of justice in justice as fairness is to specify the basic rights and liberties and to regulate the fair terms of social cooperation (and thus, also, the social and economic inequalities) among free and equal citizens (ibid, p.7). The principles of justice regulate the functioning of society's basic structure, "that is, its main political and social institutions and the way they hang together as one system of cooperation" (ibid, p.8). The basic structure is the primary subject of political justice because of the effects that it has "on citizen's aims, aspirations and character" (ibid, p.10), and because, given this, it shapes the life prospects of citizens (ibid, p.40).

Life prospects are also shaped by "contingencies", which are undeserved and cannot be changed but which are not unjust per se, they are simply natural facts (Rawls, 1971, p.87). "What is just or unjust is the way that institutions deal with these facts" (ibid p.87). These contingencies, as mentioned before, are the social class of origin, the native endowments and the good or ill fortune (say, illness, accidents) over the course of life (Rawls, 2001, p.55).

How are the principles of justice defined? The fair terms of social cooperation are to be given by an agreement entered into by those engaged in it, defined under conditions that are fair for all. To define these conditions, Rawls uses a hypothetical and nonhistorical device of representation that he calls "original position", in which the parties deciding the principles of justice are under the veil of ignorance. That is, they ignore the social positions, natural traits and the particular comprehensive views of the persons that they represent (ibid, p.15-18); the parties cannot seek the advantage of those they represent, as they do not know their personal identities, and this forces them to think impartially. This device is useful because it helps us to look into our firmest convictions with the purpose of working out principles that equal citizens will select to specify the basic rights and liberties, and to regulate the social and economic inequalities (ibid, p.41).

---

operating members of society in the usual sense" (Rawls, 1993, p.20).

The two principles of justice as fairness are:

(a) Each person has the same indefeasible claim to a fully adequate scheme of equal basic liberties, which scheme is compatible with the same scheme of liberties for all; and

(b) Social and economic inequalities are to satisfy two conditions: first, they are to be attached to offices and positions open to all under conditions of fair equality of opportunity; and second, they are to be to the greatest benefit of the least-advantaged members of society (the difference principle).

The first principle is prior to the second; and in the second principle, fair equality of opportunity is prior to the difference principle (ibid, p.43). Rawls also states that "this principle [the first one] may be preceded by a lexically prior principle requiring that basic needs be met, at least insofar as their being met is a necessary condition for citizens to understand and to be able fruitfully to exercise the basic rights and liberties" (ibid, p.44).[21]

The equal basic liberties specified by the first principle are: "freedom of thought and liberty of conscience; political liberties (for example, the right to vote and to participate in politics) and freedom of association, as well as the rights and liberties specified by the liberty and integrity (physical and psychological) of the person; and finally, the rights and liberties covered by the rule of law" (ibid, p.44).

The role of fair equality of opportunity, in the second principle, is to correct the defects of formal equality of opportunity. When explaining it, Rawls states: "supposing that there is a distribution of native endowments, those who have the same level of talent and ability and the same willingness to use these gifts should have the same prospects of success regardless of their social class of origin, the class into which they are born and develop until the age of reason. In all parts of society there are to be roughly the same prospects of culture and achievement for those similarly motivated and endowed" (ibid, p.44).

The application of the difference principle requires a characterization of who are the least-advantaged members of society. To do this, Rawls defines the "primary goods", "these are various social conditions and all-purpose

[21] An almost identical statement is made on Rawls, 1993, p.7.

means that are generally necessary to enable citizens adequately to develop and fully exercise their two moral powers and their determinate conceptions of the good" (ibid, p.57). Rawls originally mentions five kinds of such goods: (i) the rights and liberties, (ii) freedom of movement and free choice of occupation against a background of diverse opportunities, (iii) powers and prerogatives of offices and positions of authority and responsibility (iv) income and wealth (v) the social bases of self-respect. The least advantaged are those with the lowest expectation (specified in terms of an appropriate index) of primary goods over a complete life (ibid, p.59). The difference principle is a principle of distributive justice (ibid, p.61) that takes equal division of primary goods as the benchmark (ibid, p.49) and seeks to regulate economic and social advantages so that they contribute to the general good.

It is important to highlight that for Rawls "perhaps the most important primary good is that of self-respect".[22] And he defines it as including two aspects, first "it includes a person's sense of his own value, his secure conviction that his conception of his good, his plan of life, is worth carrying out. And second, self-respect implies a confidence in one's ability, so far as it is within one's power, to fulfill one's intentions" (Rawls, 1971, p.386). He further explains, "when we feel that our plans are of little value, we cannot pursue them with pleasure or take delight in their execution. Nor plagued by failure and self-doubt can we continue in our endeavors. It is clear then why self-respect is a primary good. Without it nothing may seem worth doing, or if some things have value for us, we lack the will to strive for them. All desire and activity becomes empty and vain, and we sink into apathy and cynicism" (ibid).

Overall, according to Rawls, appropriate regulation of the basic structure, through the principles of justice, allows to minimize the effects contingencies over citizens' life prospects (through the first principle and through fair equality of opportunity) or at least to use those differences in everyone's advantage (through the difference principle). "The two principles are equivalent, as I have remarked, to an undertaking to regard the distribution of natural abilities in some respects as a collective asset so that the more fortunate are to benefit only in ways that help those who have lost out" (Rawls, 1971, p.156).

[22] Rawls uses the terms self-respect and self-esteem interchangeably.

Finally, it is worth highlighting that even if Rawls' theory of justice is very explicit about certain basic ideas and prescriptions, his analysis is nevertheless pluralistic and could be adapted to different particular contexts. Often he writes, regarding concrete matters, that such issues are not for political philosophy to decide. Notably, by not specifically stating how primary goods should be weighted in the construction of an index, Rawls is deliberately leaving substantial margin to the democratic communities to adapt the theory to their specific historical and cultural conditions.

3.3.2 Sen's Capability Approach

Contrary to Rawls' (and to Van Parijs'), Sen's approach is comparative. It is more focused on socially appropriate behavior, rather than on perfectly just institutions. Sen is more interested in fighting against injustice than in looking for a perfectly just society, in trying to answer "how would justice be advanced?" rather than "what would be perfectly just institutions?" (Sen, 2009, p.5-9). One could highlight three components of Sen's reflection about justice. First, he agrees with Rawls that "negative freedom"[23] should have some priority (Sen, 1992, p.87). "There is a real need to bring in the demands of liberty as an additional principle (even if that principle is not given the total priority that Rawls recommends). The importance of the over-all freedom to achieve cannot eliminate the special significance of negative freedom" (Sen, 1992, p.86). "The important point to note here is that liberty has a place in a just social arrangement that goes well beyond recognizing liberty to be a part of personal advantage, in the way income or wealth is" (Sen, 2009, p.300).

Second, there should be an informational basis for the judgment of individual advantage, that is, a space for interpersonal comparison. Sen considers that the focus should be on "freedoms" or "capabilities" (words that he

[23] "Freedom seen in '*positive*' terms involves what, everything considered, a person can or cannot achieve. It is not particularly concerned with the causal factors underlying this, e.g. whether a person's inability to achieve something is due to the fact that he or she is prevented from doing it by the restraints imposed by someone else. In contrast, the '*negative*' view of freedom focuses precisely on the absence of a class of restraints that one person may exercise over another (or the state or other institutions may exercise over individuals). *To illustrate*: if I am unable to walk freely in the park because I am disabled, then that is a failure of my positive freedom to take that walk, but there is nothing here to suggest a violation of my negative freedom" (Sen, 1998, p.55, my emphasis).

sometimes uses interchangeably) and not on Rawls' "primary goods". To define capabilities, Sen first refers to "functionings", which reflect the various things a person may value doing or being (e.g. being nourished, being educated). "A person's capability refers to the alternative combinations of functionings that are feasible for her to achieve" (Sen, 2000, p.75); that is, it refers to her real opportunities. For Sen, "primary goods are not constitutive of freedom as such, but are best seen as *means* to freedom" (Sen, 1992, p.80). Since the *conversion* of primary goods into freedom of choice may vary from person to person, equality of holdings of primary goods can go hand in hand with serious inequalities in actual freedoms enjoyed by different persons. "A person may have more income and more nutritional intake, but less freedom to live a well-nourished existence because of a higher basal metabolic rate, greater vulnerability to parasitic diseases, larger body size, or simply because of pregnancy" (ibid, p.81).[24]

Third, aggregative (generally enhancing individual advantages, for example, efficiency) and distributive concerns (for example, reducing disparities in the distribution of advantages), often conflicting with each other, should always be weighted (ibid, p.136). Sen argues that in standard theories of justice, the conflict between the aggregative and distributive concerns is addressed by proposing a "specific formula" (like Rawls' difference principle). Sen has not argued for a specific formula to "settle" the issue. He has instead concentrated on "acknowledging the force and legitimacy of both aggregative and distributive concerns" (Sen, 2000, p.286).

In an interesting example, Sen comments that Rawls "argues against equating people's capabilities in influencing public policy, and reasserts the fairness and justice of a system in which influential offices are filled through open competition" (Sen, 1992, p.145). Sen says that one could agree with this conclusion for the sake of efficiency, but acknowledging that it involves inequality in capabilities.[25] "Indeed, if we could have had equal-

[24] I think that the implications of this disagreement are enlarged because when discussing about justice, Sen is considering all human beings, contrary to Rawls, who limits his analysis to "fully cooperating members of society". Therefore, Sen is including handicapped people in his analysis, whereas Rawls is not.

[25] "So far I have not disputed the substantive claim of Rawls that there is no unfairness or injustice in allocating offices through open competition, with the more skilled being actually selected (as long as everyone has the same opportunity to be educated and to compete) (...) I do not doubt that in many circumstances the procedure that Rawls supports (and which I tentatively accepted earlier on) would prove to be just right. If, on

ity in the holding of influential offices and positions without inefficiency and loss of advantages in general, justice would have (I would argue) demanded that we consider opting for it. (...) Justifying the inequality in capabilities in the case discussed would take the form of arguing that eliminating it would tend to pull down many people's capabilities quite substantially and that would be inefficient and unacceptable. The justification is contingent on the aggregative consideration working this way" (ibid, p.146).

Finally, let me point out that Sen's approach is even more pluralistic than Rawls' justice as fairness. Sen does not even propose a list of the most important capabilities. In his view, the selection of the relevant capabilities (and not only defining their relative weights) should be the task of a democratic process. Sen writes, "I am a great believer in theory (...) But pure theory cannot 'freeze' a list of capabilities for all societies for all time to come, irrespective of what the citizens come to understand and value. That would be not only a denial of the reach of democracy, but also a misunderstanding of what pure theory can do, completely divorced from the particular social reality that any particular society faces" Sen (2004a).

3.3.3 Van Parijs' Real Libertarianism

Van Parijs' real-libertarianism concern is to have a "free society", that is, a society whose members are maximally free (Van Parijs, 1995, p.23). He defines real freedom as a notion that incorporates three components: (i) security (a well-enforced structure of rights), (ii) self-ownership (including a ban on forced labor) and (iii) opportunity (do to whatever one might want to do). He opposes this concept to formal freedom, which has only the first two components. "A free society is one in which people's opportunities are being leximinned subject to the protection of their formal freedom, that is, the respect of a structure of rights that incorporates self-ownership" (ibid, p.27).

---

the other hand, it turns out that a system by which offices and influential positions go to people who do better in open competition creates a kind of 'meritocracy' that is not so efficient and which leads to people of less favoured groups being unequally treated (in the exercise of those offices and positions), then that justification would no longer obtain" (ibid, p.147).

"One is really free, as opposed to just formally free, to the extent that one possesses the means, not just the right, to do whatever one might want to do" (ibid, p.33). Therefore, Van Parijs claims that real-freedom for all requires to sustainably leximin people's unconditional purchasing power. That is, to provide to all full members of society the highest sustainable unconditional basic income (UBI)[26] subject to the constraint of formal freedom.

According to Van Parijs, most of the UBI should be paid in cash, because this provides people the highest freedom to do whatever they might want to do (ibid, p.42). Nevertheless, at least three categories of goods could be given in kind. A first category includes all what is related to the requirements of formal freedom: police, courts, etc. A second category includes items that should be subsidized or provided for free because of the positive externalities on everyone's opportunities. Some funding of education or of infrastructure, for example, can be justified in this way (ibid, p.43). Nevertheless, Van Parijs makes it clear that when he talks about maximizing the level of UBI, he means the part of it that is not justified by these two categories. The third category is different, it includes items "of which it is plausible to assume that no one in her right mind might not want to buy them out of her basic income were she given the whole of it in cash" (ibid, p.43). For example, clean air, availability of streets, and availability of areas without car traffic.[27] "The in-kind basic income justified in this way should not be discounted when comparing the levels of basic income attainable under different socio-economic regimes, but constitutes an essential ingredient of the means made available to every member of society in the pursuit of her conception of the good life" (ibid, p.44).[28]

[26] "A basic income, in other words, is an income paid by the government to each full member of society (1) even if she is not willing to work, (2) irrespective of her being rich or poor, (3) whoever she lives with, and (4) no matter which part of the country she lives in" (ibid, p.35).

[27] The argument is not that everyone attaches the same importance to these goods, but that even the least intensive users can have no less of what they want as a result of in-kind provision. They get these goods for a cost (in forgone cash grant) that does not exceed what they would have had to pay for what they would have chosen to consume in the absence of in-kind provision (ibid, p.44).

[28] Van Parijs also talks about health care, some aspects of which could be fitted into the second and third category. But this is not enough to justify a comprehensive health insurance. To justify it one might allow a "mild form of paternalism" in order to prevent some people from failing to use part of their cash grant in order to subscribe to a basic

If most of the UBI is paid in cash, the price structure is momentous for determining the real-freedom that people actually enjoy. "The pro-cash presumption, in other words, can only be sustained if the price structure is not purely arbitrary, for what combinations of goods will feature in the opportunity-set associated with a cash basic income is crucially dependent on what prices one decides should prevail" (ibid, p.49). Van Parijs proposes to choose "competitive values as the appropriate metric for judging whether external-resource-based freedom is fairly distributed" (ibid, p.49). The most important reason for this choice is that people "should get resources that are equally valuable in terms of the potential uses by others that have to be forgone as a result of the allocation that has been made" (ibid, p.51).

Let us assume that there are no significant differences in people's abilities (or internal endowments). In such scenario, how can an UBI be justified? According to Van Parijs, there is a legitimate level of basic income that is determined by the value of society's external assets, and it should be entirely financed by those who appropriate these assets (ibid, p.99). External assets are all those which affect people's capacity to pursue their own conceptions of the good life, regardless of whether they are natural or produced (ibid, p.101). For real-libertarians, if one is concerned with leximinning real freedom, then, bequests and gifts should be taxed up to the point that maximizes the yield (ibid, p.102). Importantly, the payments to finance the UBI are demanded not as a compensation for a harm done, but as a charge matching the fair value of what is being taken.

But how to proceed if one acknowledges that there are differences in people's abilities? To deal with this, Van Parijs introduces an additional restriction to the maximization of the UBI, which he calls "undominated diversity" (UD). UD requires "that there be no pair of people such that all prefer one's person [comprehensive: internal plus external] endowment to the other's" (ibid, p. 76). If everyone considers that the comprehensive endowment of some citizen is "dominated" by the endowment of another, then the former should receive a monetary compensation (on top of the UBI), up to the point in which this is no longer the case. That is, up to the point in which at least one person considers that there is no domination. Therefore, in a diverse society, with a large repertoire of different preferences, a small percentage of people will be entitled to differentiated trans-

health insurance, which they genuinely want when "in their right minds" (ibid, p.45).

fers because of UD (ibid, p.84); the transfers required by UD will probably be restricted to handicapped people (ibid, p.83).[29]

There is still a remaining issue. Even in developed countries the total value of bequests or donations, required to finance the UBI, is fairly low (ibid, p.102). To deal with this, Van Parijs argues that a "crucial aspect of our endowment has been overlooked so far" (ibid, p.106). Let us assume again, for the moment, that there are no significant differences in internal endowments. According to Van Parijs, in a non-Walrasian economy, in which the labor market does not clear,[30] the holding of a job, also, constitutes an external asset (ibid, p.108). Those who are employed, enjoy some "employment rents", which are given by "the difference between the income (and other advantages) the employed derive from their job, and the (lower) income they would need to get if the market were to clear" (ibid, p.108).[31] If equality was to be achieved all these rents should be taxed out; but leximin might differ substantially from equality. Therefore, the proposal is to tax wages "up to the point at which the tax yield, and hence the basic income financed by it, is maximized" (ibid, p.116). This implies that, for the sake of efficiency, some positive rents will persist.

If internal endowments are not equal, should the previous prescription change? One could think that the positive rents of jobs should be distributed only among those who are skilled enough to perform them (those who can actually compete for the job, and thus, those who are directly affected by the shortage of jobs) and not among all citizens (ibid, p.122). But according to Van Parijs, this should not be the case. The idea is "after all, that of sharing among all a type of asset that would otherwise be appropriated, very unequally, by some. But then if, in the absence of redistribution, some people are prevented by their lack of talents from getting access to any part of these assets, this should not affect their claim to a share in the value of these assets any more than if they had been denied such access by

[29] In later writings Van Parijs argues that imposing UD as a constraint is "inessential". Handicaps could be treated by "bearing in mind that health care must be broadly construed as covering, for example, private devices and collective arrangements that facilitate the mobility of the blind or disabled" (Van Parijs, 2009, p.13).

[30] The insider-outsider and efficiency wage theories could provide an explanation of why this could be the case, even in presence of perfect competition. See Van Parijs, 1995, p.107-108 and the references provided in fn 32, ch.4.

[31] However, "as soon as there are several types of jobs, the existence of employment rents no longer needs to be coextensive with involuntary unemployment" (ibid, p.109).

the sheer shortage of jobs. If the wealth stocked on top of a cupboard is to be shared among all, it makes no sense to restrict it to those tall enough to reach it" (ibid, p.123).

Overall, Van Parijs' real libertarianism requires a sustainable maximization of the UBI paid mostly in cash, to be provided to all full members of society, subject to the constraints of formal freedom and UD.[32]

3.4 The Biggest Difference: The Source of Entitlement

In this section I present what I believe is, in this matter, the main difference among the three authors. For Rawls, contributing is a necessary condition for the entitlement guaranteed by the difference principle; his approach strongly rests on the importance of reciprocity and stresses citizen's responsibility of being cooperating members of society. A caveat is that it is unclear what exactly he means by cooperation. Sen asks whether mutual benefit or reciprocity is the only reasonable way to motivate our behavior towards others; he concludes it is not. Finally, Van Parijs thinks that the entitlement to the highest possible basic income should be unconditional, meaning that no work or contribution requirement should be demanded. This is instrumentally practical but it has raised criticisms because it explicitly aims to provide people the material means to live without doing any personal contribution to society.

[32] It is worth pointing out that in his work about Linguistic Justice (Van Parijs, 2011), Van Parijs incorporates the concept of "parity of esteem" (or equal dignity). As Birnbaum (2017) remarks, *if* considerations of "equal dignity" were incorporated in real libertarianism, this could possibly lead it closer to the implications that self-respect has on Rawls' own analysis. Van Parijs writes that "this [equal dignity] is a dimension of justice commonly ignored in theories of distributive justice, including my own, as developed in Real Freedom for All. It is precisely by reflecting on and empathizing with feelings of linguistic injustice that I was forced to try to accommodate it in my 'reflective equilibrium"'. However, it is an open question whether Van Parijs aims to include "parity of esteem" into his reflection about distributive justice. My impression is that he does not. For instance, in a recent exposition (Chapter 5 of Van Parijs and Vanderborght, 2017) when presenting real libertarianism, parity of esteem is not even mentioned.

3.4.1 Rawls: Contribution as an Obligation for the Entitlement Guaranteed by the Difference Principle

The difference principle in justice as fairness could be understood as an entitlement to a (fair) share of primary goods to all citizens who engage in cooperation. It guarantees a "social minimum" to the worst-off contributing members of society. The contribution obligation is very clear in Rawls. So, for instance, Rawls, 1971, p.301 states: "we are not to gain from the cooperative efforts of others without doing our fair share".[33] In later writings he even proposed to add "leisure time" to the list of primary goods, "should this be workable and the best way to express the idea that all citizens are to do their part in society's cooperative work" (Rawls, 2001, p.179).[34] This implies that the difference principle does not entitle citizens who do not wish to work -when there is work to be done- to public funds. Therefore "those who surf all day off Malibu, must find a way to support themselves" (Rawls, 1993, p.182).

But this raises a crucial question: What is cooperation? What does "fully contributing" mean? This is not totally clear in the work of Rawls. One could think that by cooperating/contributing, he exclusively means work-

[33] There are many passages in which this idea is advanced, among many others: "the difference principle is to apply to citizens engaged in social cooperation" Rawls, 1971, p.84, or "we are not to gain from the cooperative labors of others without doing our fair share. The two principles of justice define what is a fair share in the case of institutions belonging to the basic structure. So, if these arrangements are just, each person receives a fair share when all (himself included) do their part" (ibid, p.96).

[34] This was Rawls, 1974 reply to a critique raised by Musgrave, 1974. More in detail, Rawls argument is the following: The least advantaged are those with the lowest index of primary goods. To simplify, let us look only to income and wealth (that is, let us assume that the value of the other primary goods is the same for everyone). Does this imply that the least advantaged are those who live on welfare and who surf all day? According to Rawls this question could be dealt with in two ways. The first one is to assume that everyone works a standard day. The second one is "to include in the index of primary goods a certain amount of leisure time, say sixteen hours per day if the standard working day is eight hours. Those who do no work have eight extra hours of leisure and we count those eight extra hours as equivalent to the index of the least advantaged who do work a standard day" (Rawls, 2001, p.179). Therefore, he says, surfers must somehow support themselves.

About this, see also Rawls, 1993, p.181. For a critique of including leisure as a primary good, see Van Parijs, 1995, p.96-98.

ing for a wage, that is, participating in the labor market,[35] where, as usual, he assumes that "positions and jobs are not scarce or rationed". Nevertheless, this is not the case, as becomes clear on Rawls, 2001, p.162, where he states that "reproductive labor is socially necessary labor". But, again, this raises several questions: Does this mean that the person in a couple who takes care of the children has a full entitlement to the "fair share" of primary goods guaranteed by the difference principle?[36] Does this imply that single women with children are also entitled to a "fair share" *qua* childcarer? (in this case to be provided from public funds). Should mothers be entitled to a higher share of primary goods if they have more children? These questions are not answered by Rawls.[37] Nevertheless, in Section 3.7.3, I provide a possible answer to these questions rooted in my interpretation of Rawls' writings and I discuss its implications.

[35] Moller Okin, 1991, p.95 also seems to have this impression. For some more specific comments about "the idea of social cooperation" see Rawls, 1993, p.16.

[36] About this, Rawls, 2001, p.167 states: "If a basic, if not the main, cause of women's inequality is their greater share in the bearing, nurturing, and caring for children in the traditional division of labor within the family, steps need to be taken either to equalize their share or to compensate them for it. How best to do this in particular historical conditions is not for political philosophy to decide. But a now common proposal is that as a norm or guideline, the law should count a wife's work in raising children (when she bears that burden as is still common) as entitling her to an equal share in the income her husband earns during their marriage. Should there be a divorce, she should have an equal share in the increased value of the family's assets during that time."

[37] Stuart White has elaborated more on what should count as cooperation. Even if White's "justice as fair reciprocity" is not exactly the same as Rawls' "justice as fairness" their view point regarding cooperation and contribution, seems to me (and to White himself, see White, 2003, p.59) very compatible. In White's view, there should be a "basic work expectation", which, subject to various qualifications, can be understood as "a socially defined minimum number of hours of paid employment per week or year" (...) "Thus, if the community expects a single adult with no children to perform an average of, say, thirty-five hours per week of paid employment, for a given number of years, then we may adjust the immediate expectation of paid employment down to, say, fifteen hours for a single parent who has childcare responsibilities. In the case of those who care full-time for elderly or sick relatives or for newborns, we might adjust our immediate expectation of paid employment to zero, treating the individual's care work as sufficient in itself to satisfy her immediate obligation to perform a decent minimum of civic labour" (ibid,. p.114-115).

3.4.2 Sen: Exploring Alternative Foundations of Behavior Towards Others

Sen points out that Rawls' idea of seeing society as a fair system of social cooperation emerges from some consideration of personal advantage.[38] That, he says, has something in common with the self-interested perspective of rational choice theory, with two important differences: First, people recognize that they would not be able to achieve what they want without the cooperation of others. Second, all the exercise is done from the viewpoint of the original position, where the veil of ignorance implies that people ignore their personal identities. This necessarily means that people cannot seek their own advantage, but what is best for the community as a whole (Sen, 2009, p.202-207).

Sen acknowledges that Rawls' argument of mutual benefit based on reciprocity has extensive relevance. Nevertheless, he wonders whether it is *the* only possible foundation for thinking about reasonable behavior towards others. In his opinion, it is not. An alternative one is the "perspective of power" put forward by Gautama Buddha. According to Sen, this perspective states that if "someone has the power to make a change that she or he can see will reduce injustice in the world, then there is a strong social argument for doing just that (without his or her reasoning having to intermediate the case for action through invoking the benefits of some imagined cooperation)" (ibid, p. 205). Sen is clear that people do not have necessarily to make this change (it is not a demand of full compliance), but he claims that it is their responsibility to consider seriously whether to do it or not.

[38] Somehow related to this, Rawls states: "the idea of reciprocity [in justice as fairness] lies between the idea of impartiality, which is altruistic (being moved by the general good), and the idea of mutual advantage understood as everyone's being advantaged with respect to each person's present or expected future situation as things are. As understood in justice as fairness, reciprocity is a relation between citizens expressed by principles of justice that regulate a social world in which everyone benefits judged with respect to an appropriate benchmark of equality defined with respect to that world." (...) "Finally, it is clear from these observations that the idea of reciprocity is not the idea of mutual advantage. Suppose that we transpose people from a society in which property, in good part as a result of fortune and luck, is very unequal into a well-ordered society regulated by the two principles of justice. There is no guarantee that all will gain by the change if they judge matters by their previous attitudes. Those owning large properties may have lost greatly and historically they have resisted such changes. No reasonable conception of justice could pass the test of mutual advantage thus interpreted" (Rawls, 1993, p.16).

Sen does not further elaborates this "perspective of power", the point that he wants to make is that Rawls' way of thinking about social cooperation is not the only reasonable one, he adds: "mutual benefit, based on symmetry and reciprocity, is not the only foundation for thinking about reasonable behaviour towards others. Having effective power and the obligations that can follow unidirectionally from it can also be an important basis for impartial reasoning, going well beyond the motivation of mutual benefits." (Sen, 2009, p.207).

Sen also states that the understanding of obligations to the human rights approach has always had a strong element of social reasoning, linked to the responsibility of effective power just mentioned : "Arguments that do not draw on the perspective of mutual benefit but concentrate instead on unilateral obligations because of asymmetry of power are not only plentifully used in contemporary human rights activism, but they can also be seen in the early attempts to recognize the implications of valuing freedoms- and correspondingly, human rights- of all" (ibid, p. 207).[39]

To be sure, this reflection does not imply that, in normal contexts, Sen thinks that the State must give money to individuals without any conditions. For instance, he writes: "an approach to justice and development that concentrates on substantive freedoms inescapably focuses on the agency and judgment of individuals; they cannot be seen merely as patients to whom benefits will be dispensed by the process of development. Responsible adults must be in charge of their own well-being; it is for them to decide how to use their capabilities. But the capabilities that a person does actually have (and not merely theoretically enjoys) depend on the nature of social arrangements, which can be crucial for individual freedoms. And there the state and the society cannot escape responsibility" (Sen, 2000, p.288). Moreover, when writing concretely about Europe, Sen explicitly states that "Europe has to give more acknowledgement to the real requirements of the philosophy of self-help" (Sen, 1997, p.168). For Sen, when sufficient opportunities are available, being self-supportive

[39] Elsewhere Sen has written defending the idea of human rights. See for instance Sen (2004b), where he states: "There is something deeply attractive in the idea that every person anywhere in the world, irrespective of citizenship or territorial legislation, has some basic rights, which others should respect. The moral appeal of human rights has been used for a variety of purposes, from resisting torture and arbitrary incarceration to demanding the end of hunger and of medical neglect"; see also Ch.17 of Sen (2009).

is ultimately an individual responsibility.[40]

3.4.3 Van Parijs: an UBI Matching the Value of What is Being Taken

In Van Parijs' view everyone is entitled to the common inheritance of society, and only efficiency or sustainability considerations could prevent us from splitting it equally among all. This common inheritance of external assets is nowadays very unevenly shared; an UBI, the highest possible, financed by those who appropriate these assets would allow to fairly share them among all. This implies that every citizen, regardless of whether she works/contributes or not, should be entitled to the highest possible unconditional basic income.[41] Within the framework of real-libertarianism excluding someone from this entitlement because of her working tastes, goes against neutrality and constitutes a discrimination. In fact, the principles of justice of real-libertarianism are fully compatible with living up from the UBI without contributing (as long as that does not attempt against the formal freedom -self-ownership- of anyone). Therefore, in the jargon of Section 3.2.2, this is a permissible conception of the good within real-libertarianism.

Entitlement to a substantial income without conditions is a direct and natural consequence of what justice requires from the viewpoint of real-libertarianism, nevertheless, it does not constitute a "general" requirement of liberal justice. Other important liberal egalitarian approaches, namely the one of Rawls and Sen, do not endorse it. As we have just seen, Rawls is even willing to modify the list of primary goods if this is the best way to express the idea that citizens should cooperate to have access to the fair share

[40] "It is also a social responsibility that economic policies should be geared to providing widespread employment opportunities on which the economic and social viability of people may crucially depend. But it is, ultimately, an individual responsibility to decide what use to make of the opportunities of employment and what work options to choose" (Sen, 2000, p.288).

[41] As clarified by Van Parijs and Vanderborght, 2017, p.281, there is a difference between the entitlement to an unconditional basic income (justified from a "distributive justice" perspective) and the unconditional entitlement to income (justified from a "human's right" perspective). In the second case, it does not follow that income should be provided without a work requirement or without a means test.

of primary goods guaranteed by the difference principle, and he explicitly states that Malibu surfers must find a way to support themselves.[42]

An UBI is a very simple and practical way to put in practice a "social minimum". Because restricting the entitlement to contributing members could be complex in practice and subjected to arbitrariness. Since, as Van Parijs clearly points out, what should we count as contributing? "Cleaning one's client shoes, cleaning one's children's shoes, cleaning one's own shoes, cleaning one's doll's shoes?" (Van Parijs, 1995, p.97). Nevertheless, the entitlement to the highest possible unconditional income raises issues regarding reciprocity, which is deeply rooted in our moral intuitions,[43] mostly if it is not linked to any sort of commitment that would allow citizens to be self-supporting in the future.

3.5 Practical Implications for the Access to Income

This section is more concrete than the previous ones; it summarizes the views of the authors regarding the main practical way in which citizens should have access to a substantial income. According to Rawls, all citizens who want to work should have the possibility to do it. Sen, at least for the case of Europe, seems to think also that work is among the simplest ways of escaping dependency and calls for public policies able to secure well remunerated working opportunities, in particular he is sympathetic to some sort of low-wage subsidies. Van Parijs' aims to secure to everyone the highest possible UBI, and promotes public policies aligned with this objective.

[42] See the first paragraph of Section 3.4.1.

[43] For a critique to UBI in this direction, see White, 1997 and Van Parijs, 1997 reply. See also, Ch.7 of White, 2003. More recently, see van der Veen and Groot, 2019, p.170-175 and Van Parijs and Vanderborght, 2019, p.251-254 reply.

3.5.1 Rawls: Through Work

From the outset Rawls envisions a basic structure such that the resulting distribution is just however things turn out.[44] For this, it is "necessary to set the social and economic process within the surroundings of suitable political and legal institutions. Without an appropriate scheme of these background institutions the outcome of the distributive process will not be just" (Rawls, 1971, p.243). He provides some insight of how a social system could realize all the main political values demanded by the two principles of justice. His discussion is mostly focused on the social system that he calls "property owning democracy" (POD), which allows private property of productive assets.[45]

He states that for establishing background institutions the government might be thought of as divided in four different branches. "*The allocation branch*, for example, is to keep the price system workably competitive and to prevent the formation of unreasonable market power. (...) *The stabilization branch*, on the other hand, strives to bring about reasonably full employment in the sense that those who want work can find it and the free choice of occupation and the deployment of finance are supported by strong effective demand. (...) The social minimum is the responsibility of *the transfer branch*. (...) The essential idea is that the workings of this branch take needs into account and assign them an appropriate weight with respect to other claims. A competitive price system gives no consideration to needs and therefore it cannot be the sole device of distribution. (...) It is clear that the justice of distributive shares depends on

[44] In fact, as Rawls points out, justice as fairness contains a large element of pure procedural justice: "No attempt is made to define the just distribution of goods and services on the basis of information about the preferences and claims of particular individuals. This sort of knowledge is regarded as irrelevant from a suitably general point of view; and in any case, it introduces complexities that cannot be handled by principles of tolerable simplicity to which men might reasonably be expected to agree. But if the notion of pure procedural justice is to succeed, it is necessary, as I have said, to set up and to administer impartially a just system of surrounding institutions. The reliance on pure procedural justice presupposes that the basic structure satisfies the two principles" (Rawls, 1971, p.267). See Rawls, 1971, p.74 for more about his conception of procedural justice.

[45] Nevertheless, he clearly states that a "liberal socialist" social structure could also be designed to satisfy the two principles of justice. The choice between the two systems depends on "circumstances, institutions and historical traditions" (Rawls, 1971, p.248). See also Rawls, 2001 Part IV. Rawls remarks that the term POD comes from Meade, 1964.

the background institutions and how they allocate total income, wages and other income plus transfers. There is with reason strong objection to the competitive determination of total income, since this ignores the claims of need and an appropriate standard of life (...). Finally, there is a *distribution branch*. Its task is to preserve an approximate justice in distributive shares by means of taxation and the necessary adjustments in the rights of property" (ibid, p. 244-246, my emphasis).[46]

From this we could already infer that according to Rawls, all those who want to work should have the possibility to do it and that fully cooperating members of society should have access to a reasonable amount of resources. He makes this even more clear some years later, where he states that among the basic prerequisites for the basic structure are:

"Society as employer of last resort through general or local government, or other social and economic policies"[47] and "a decent distribution of income and wealth meeting the third condition of liberalism [the difference principle]: all citizens must be assured the all-purpose means necessary for them to take intelligent and effective advantage of their basic freedoms. In the absence of this condition, those with wealth and income tend to dominate those with less and increasingly to control political power in their own favor" (Rawls, 1993, p.lviii).[48]

Regarding the latter, he explains that "the requirement is far more than provision for food, clothing, and housing, or simply for basic needs" (ibid). In fact, according to Rawls, the idea of a minimum covering essential needs for a decent human life is not enough. He envisions a system in which even the least advantaged are not prevented from being drawn into the public world and regard themselves as full members of society (Rawls, 2001,

[46] Of course, all this is under the assumptions that (1) the basic structure is regulated by a just constitution that secures the liberties of equal citizenship, that is, the requirement of the first principle of justice, and (2) there is fair (as opposed to formal) equality of opportunity (ibid, p.243).

[47] He adds: "Lacking a sense of long-term security and the opportunity for meaningful work and occupation is not only destructive of citizens' self-respect but of their sense that they are members of society and not simply caught in it. This leads to self-hatred, bitterness, and resentment" (Rawls, 1993, p.lviii). It is worth to highlight that, to the best of my knowledge, Rawls did not discuss possible implementations or practical implications of having Society as an employer of last resort.

[48] These two statements are almost literally repeated some years later in Rawls, 1999, p.50.

p.130-131).

3.5.2 Sen: In Europe, Through Work

It is not simple to infer Sen's precise view about how people should have access to income. He would probably argue that it largely depends on the context. Nevertheless, as pointed out before, in Sen, 1997, when writing concretely about Europe (and comparing it to the United States), Sen insists on the importance of the "philosophy of self-help" (ibid, p.168) and on the pervasive consequences of unemployment among which, of course, the lack of income, and the psychological deprivations it engenders. The problem, he says, is that even if "the market economy signals costs and benefits of different kinds, it does not adequately reflect all the costs of unemployment" (ibid p.164). Therefore, he calls for the design of public policies which may increase the inclination to employ more people. He provides several references,[49] all of them suggesting some sort of "low-wage subsidies".[50]

The most well-known proponent of low-wage subsidies, among those quoted by Sen, is the Nobel Laureate economist Edmund Phelps. In Phelps, 2007 he defends paid work as *the* way to have access to income. He denounces that typically less educated people are the ones who have longer unemployment spells (ibid, p.25), in part because more advantaged workers take the more stable jobs just as they take the better-paying ones. As Sen, Phelps argues that the private benefit of employment does not fully capture the whole of the social benefit from less productive workers to become employed (ibid, p.124).[51] In his opinion, low-wage subsidies will reduce un-

[49] Phelps (1994a), Phelps (1994b), Phelps (1997), Fitoussi (1994), Fitoussi and Rosanvallon (1996), Lindbeck (1994) and Snower (1994), among others.

[50] It is worth to highlight that Rawls himself was also sympathetic to the idea of wage subsidies. This is highlighted by Van Parijs and Vanderborght, 2017, p.283, fn 42. They comment that a previous version of Rawls, 1999 had a footnote, scrapped in the published version, that mentioned "Ned Phelps's idea of rewarding work". The authors state that the later Rawls had a prima facie preference for guaranteed employment and job subsidies over an unconditional basic income.

[51] In Chapter 9 of his book he mentions several areas in which employment confers social benefits. For example, through employment, parents can be role models for children, exemplifying self-reliance and strong job attachment, which would have implications for the next generation. Also, poor nutritional habits and criminal activities would

employment substantially[52] and would increase the reward to low-skilled workers.[53] "The problem is that the low-end pay rates are much too low, so low that some low-end workers must take the least 'liberating' jobs to make ends meet. The solution is to institute a low-wage employment subsidy, so that all pay rates facing low-wage workers would be pulled up to levels better reflecting the social productivity of their employment, their support of themselves, and their development" (Phelps, 2001, p.59).[54]

All this suggests that for Sen, at least in Europe, work should be the main mechanism of access to income and that the State has the responsibility of promoting wide employment opportunities. "When jobs are nearly impossible to get for particular groups of workers, to advise 'self-help' can be both unhelpful and cruel. To be able to help oneself, anyone needs the hands of others in economic and social relationships (as Adam Smith (1776) noted more than two centuries ago). The opportunity of paid employment is among the simplest ways of escaping dependency" (Sen, 1997, p.167).

be reduced, with a consequent decline in public expenditures. These points are also highlighted in Phelps, 1994a.

[52] The program, as conceived by Phelps, "offers subsidies to employ those workers whose productivity, though low, is high enough that the hourly labor cost borne by their employer exceeds some threshold level" (ibid, p.157). Thus, presumably, unemployment will not be reduced to zero, but it will be lower. This program could be complemented with unemployment insurance benefits (ibid, p.131).

[53] In Phelps view, the subsidy should be of unlimited time and given only to private firms (ibid, p.108), the aim is to counter and, in some cases (for the more poorly paid workers), outweigh the wedge created by payroll taxes (ibid, p.124-125). The subsidy should be higher for smaller hourly wages, and slowly phase out as the wage increases (ibid, p.112). According to Phelps, the permanent wage subsidies are better than a hiring subsidy because the latter creates incentives to increase turnover which in turn reduces the interest of the employer and the employee to invest in their relationship (ibid, p.119). Finally, Phelps thinks that his scheme, designed to favor workers with low earning rates, is better than the Earned Income Tax Credit (EITC). Because the latter, designed to favor those with low annual earnings, might disincentivize work to some extent (ibid, p.133).

[54] For a synthesis and a critique of Phelps' low-wage subsidies proposal, see Van Parijs and Vanderborght, 2017, p.44-45. They criticize that Phelps' subsidies main objective is to put people into "busy-ness" and not to enhance people's freedom.

3.5.3 Van Parijs: Through an UBI Paid Mostly in Cash

As pointed out before, for Van Parijs justice requires every full member of society to receive the highest possible UBI. In a sufficiently affluent society, as the United States or countries in Western Europe, it will be high enough to at least cover "bare necessities" (Van Parijs, 1995, p.76 and p.109). Of course, people could always choose to work to increase their total income. However, this does not imply that everyone who wants to work should be able to find a job.

Real libertarianism supports policies that contribute to the sustainable maximization of the tax yield, because they permit to finance a higher sustainable UBI. However, it does not necessarily support policies aiming to increment the number of available jobs. Having more jobs could be instrumentally desirable, but the promotion of employment opportunities is not a goal per se. In fact, real-libertarianism would prefer a social arrangement with less employment and a higher sustainable UBI than the opposite. Van Parijs argues that "leximin considerations can legitimize the persistence of some involuntary unemployment" (ibid, p.126). He adds, "one could devise policies that provide jobs with good pay and comfortable working conditions to anyone wishing to perform paid work. But this would again amount to redistributing employment rents in a discriminatory fashion (...) It would amount to giving a liberally unjustified privilege to those who have a stronger preference for waged labour" (ibid).

This is the most important reason why real-libertarianism opposes public subsidized-wages, job sharing (through a compulsory reduction in maximum working time), or unemployment benefits (ibid, p.109-113).[55] And, instead, sustains that the optimal strategy is to have the highest possible UBI which permits sharing among all the social surplus.

For a country not rich enough, the highest possible UBI might be insufficient to lift people out from poverty. In such a case, real-libertarianism

[55] Of course, this does not prevent the State to organize pure social insurances or contributory systems (which might include unemployment benefits) as long as the systems are actuarially equivalent to the contributions paid. That is, real libertarianism does not oppose the State to organize those systems per se, if they are justified for reasons other than justice. What it opposes is using mechanisms such as unemployment benefits to distribute the "common inheritance of society", because those mechanisms exclude those who do not have a taste for working.

would suggest to have some conditional type of guaranteed minimum income, instead of the UBI, involving possibly a willingness-to-work requirement.[56]

3.6 A Broader Context to Analyze the Access to Income

As mentioned in the Introduction, the way in which people have access to income is crucial because income is a major determinant of the opportunities that people have in life. Nevertheless, to have a broader understanding of the proposals of the authors concerning the access to income, a contextualization of their views regarding other determinants of opportunities is needed. Thus, in this section I outline their views regarding two other important determinants of opportunities. Namely, inequality (because of its potential effects on self-respect) and fair equality of opportunity (because of its implications for the access to high quality education). I focus in these two matters because the authors, mostly Rawls and Van Parijs, have different standings regarding them. The current section provides the theoretical underpinning for Section 3.7.1 in which I discuss and confront their views regarding these matters.

3.6.1 Inequality, and (the Social Bases of) Self-Respect.

According to Rawls, in a very unequal society (unequal in terms of income and wealth), the sense of worth of those who are at the bottom of the distribution could be harmed. Concretely, Rawls writes: "a person's lesser

[56] In his original exposition Van Parijs, 1995 states: "There is an earning power that is so low that anyone would prefer practically any situation with a bigger earning power" (ibid,p. 257). "In rich societies, which can afford a substantial UBI, this might never happen. But in a poor society, where both the wage rate for the unskilled and the highest sustainable level of basic income are low, this case will often occur" (ibid, p.76). In such cases, the money required to fund the transfers that undominated diversity requires, may drive the UBI to zero. Therefore, it is in those cases, and because of the prior requirement of UD, that real-libertarianism recommends having an income guarantee instead of an UBI. In most recent expositions, even if UD is not considered essential, the same public implication remains (Van Parijs and Vanderborght, 2017, p.281).

position as measured by the index of objective primary goods may be so great as to wound his self-respect[see Section 3.3.1 for Rawls' definition of self respect]; and given his situation, we may sympathize with his sense of loss. Indeed, we can resent being made envious, for society may permit such large disparities in these goods that under existing social conditions these differences cannot help but cause a loss of self-esteem" (ibid, p.468). Rawls calls this feeling "excusable envy". This implies that in certain contexts securing a higher income to the worst off, at the cost of a higher level of inequality, might be, everything considered, detrimental for them. "To some extent men's sense of their own worth may hinge upon their institutional position and their income share" (ibid, p.479). Since the social basis of self-respect are among the list of primary goods, "then in applications of the difference principle, this index can allow for the effects of excusable envy; the expectations of the less advantaged are lower the more severe these effects".[57]

Sen is also concerned with inequality and its effects on self-respect. He states that "an absolute approach in the space of capabilities translates into a relative approach in the space of commodities, resources and incomes in dealing with some important capabilities, such as avoiding shame from failure to meet social conventions, participating in social activities, and retaining self-respect. (...) the issue of inequality of capabilities is an important one on its own right-for public policy" (Sen, 1983, p.168).[58]

Instead, regarding inequality, Van Parijs states: "But it [real-libertarianism] does not take into account the fact that with what is assessed as the same minimum income in real terms one may feel more frustrated, envious,

[57] Many authors believe, wrongly in my opinion, that in justice as fairness the social bases of self-respect are secured by the first principle alone. Such interpretation supports the belief that Rawls is not concerned with inequality per se (see for instance Phelps, 2007, p.140). For an interesting comment and criticism of this interpretation, see Moriarty, 2009, p.445. I believe that the passages highlighted before together with Rawls' interest in preserving background justice, present throughout his writings, makes explicit his concern with limiting inequalities. "It follows that the confident sense of their own worth should be sought for the least favored and this limits the forms of hierarchy and the degrees of inequality that justice permits" (Rawls, 1971, p.91). For some comments about the important place that justice as fairness gives to equality per se, see Rawls, 2001, p.88-89. For an interpretation of Rawls similar to mine in this respect see Birnbaum, 2012, p.51.

[58] About Sen's concern with inequality, and relative positions of individuals, see also Sen, 1992, p.88-89.

ashamed, unhappy in a less egalitarian than in a more egalitarian regime (...), or in an inegalitarian regime with more class mobility than in a more caste-like one. Hard luck: maximum real freedom for all does not always coincide with maximum happiness for all" (Van Parijs, 1995, p.251).[59]

3.6.2 Fair Equality of Opportunity and Education

As we have seen, for Rawls, offices and positions should be open to all under conditions of fair equality of opportunity. This means that "those who have the same level of talent and ability and the same willingness to use these gifts should have the same prospects of success regardless of their social class of origin". Among other things, this implies that there should be roughly equal opportunities of education, and that "the school system, whether public or private, should be designed to even out class barriers" (Rawls, 1971, p.63).

For Rawls, the principle of fair equality of opportunity mainly expresses the conviction that if some places were not open on a basis fair to all, those kept out would be right in feeling unjustly treated; they would be excluded not only from the external rewards that accompany these positions but also from experiencing the realization of self that comes with an skillful exercise of social duties (Rawls, 1971, p.73).

Sen does not necessarily endorse fair equality of opportunity as *the* way in which opportunities should be secured.[60] In fact, Sen's ideal would be

[59] Van Parijs then adds "This comment should sound less harsh, however, once the constraint of undominated diversity is introduced in the next chapter" (ibid). For him, there could be internal obstacles, among which preferences and desires (to some extent) that prevent us to do what we might want to do (ibid, p.24). UD would provide compensation to persons with such obstacles, if these internal obstacles were unanimously recognized. Nevertheless, as long as *one* person thinks that they are not important, UD would be satisfied. That is, if one person considers that "excusable envy" is not excusable, ceteris paribus, this would be enough for UD to be satisfied, and no compensation would be required. Recall that in later writings Van Parijs states that UD is not essential in his theory.

[60] Sen states that: "His [Rawls'] 'first principle' of justice involves the priority of liberty, and the first part of the 'second principle' involves process fairness, through demanding that 'positions and offices be open to all.' Even though the concerns that lead Rawls to these particular formulations can be dealt with in different ways, not only in the way that Rawls himself addresses them, the force and cogency of these Rawlsian concerns can nei-

to have equality in the holding of offices and positions. However, since the efficiency costs of doing so would be unacceptable, he a priori agrees with Rawls' method of allocation of offices and positions, "as long as everyone has the same opportunity to be educated and to compete" (Sen, 1992, p.147). Sen's support is conditional on the fact that this method effectively boosts everyone's capabilities (ibid, p.145). Thus, "if it turns out that a system by which offices and influential positions go to people who do better in open competition creates a kind of 'meritocracy' that is not so efficient and which leads to people of less favoured groups being unequally treated (in the exercise of those offices and positions)" (ibid, p.147) then, Sen would no longer support it.

Real-libertarians, instead, have no specific concern in securing *fair* equality of opportunity. In their view "the opportunities we enjoy are fashioned in complex, largely unpredictable ways by the interaction of our innate capacities and dispositions with countless other circumstances such as happening to have a congenial primary school teacher or an inspiring boss, to belong to a lucky generation, to have a native language in high demand, or to get a tip for the right job at the right time" (Van Parijs and Vanderborght, 2017, p.106). Therefore, the way in which real-libertarianism deals with these evenly and morally arbitrarily distributed opportunities is by prescribing that all these gifts should be up for fair redistribution among all. Offices and positions should be allocated in the most efficient way,[61] so that these "gifts" are boosted and thus the material bases for freedom be sustainably maximized for those who receive the least. By doing this, real-libertarianism aims to avoid accommodating any privilege to social over talent inequalities, given that both of them are morally arbitrary.

Let us consider an example. Imagine an educational system in which there are two types of schools, the private ones, expensive but very good, and the public ones, free but with very low quality. It is clear that, on aver-

ther be ignored nor be adequately addressed through relying only the informational base of capabilities. In contrast, capability comes into its own in dealing with the remainder of the second principle, viz. 'the Difference Principle'. (...) Capabilities and the opportunity freedom, important as they are, have to be supplemented of fair processes and the lack of violation of the individual's right to invoke and utilize them" (Sen, 2004b, p.337-338).

[61] As pointed out by Rawls, 1971, p.73, it is in fact possible to achieve efficiency without securing fair equality of opportunity. Even if the access to offices and positions is restricted, they could possibly attract superior talent and encourage better performance, and thus, restricting them does not necessarily engenders an efficiency loss.

age, the students coming from private schools would have better chances to go to better universities (whose slots are allocated to the 'ablest pupils') and find better jobs than the students coming from public schools. This amounts to say, for example, that among two equally talented and motivated young students who compete for the same job, the one who went to a private school will most likely be chosen, because of her better trained skills. This will systematically be the case for the most demanded jobs, given the structure of the described educational system.

As long as there are no efficiency costs[62] and the earnings are fairly taxed and distributed among all, such an educational system is perfectly compatible with real libertarianism. Instead, Rawls' fair equality of opportunity and Sen's concern with equality of capabilities would veto it.[63]

It is also interesting to notice that education has a somehow different importance on justice as fairness and real-libertarianism. Both Rawls and Van Parijs agree on the fact that education, by allowing people to develop and train their skills, could have positive effects on social productivity and therefore positive externalities on everyone's opportunities. This could be

[62] In the previous illustration, efficiency costs could be present if there is "waste of talent" from the students attending public schools. This would be the case, for example, if some openings are not adequately filled. However, there is no efficiency cost as long as the number of adequately qualified applicants is bigger or equal than the number of openings.

[63] Pogge, 1989, p.171 provides a similar example to this one. According to Pogge, the only tenable interpretation of Rawls' fair equality of opportunity is to restrict it to formal equality of opportunity (p.170). Therefore, given that interpretation, the educational system that I described would not be vetoed by Rawls. Pogge thinks that a more demanding interpretation of the principle of fair equality of opportunity would aim to prevent social contingencies, while permitting natural ones, and that doing so is inconsistent (p.170) and morally implausible (p.171-172).

This is not the place to enter into details, but I disagree with his reasoning and interpretation of Rawls' fair equality of opportunity. In my opinion, once the first principle of justice is secured, Rawls would prioritize the provision of education to everyone regardless of their social background. In his later writings Rawls states it very clearly: "Society must also establish, among other things, equal opportunities of education for all regardless of family income" (Rawls, 2001, p.44), but even in his original expositions, he is very clear "it may be worthwhile to recall the importance of preventing excessive accumulations of property and wealth and of maintaining equal opportunities of education for all" (Rawls, 1971, p.63) and "as earlier defined, fair equality of opportunity means a certain set of institutions that assures similar chances of education and culture for persons similarly motivated and keeps positions and offices open to all on the basis of qualities and efforts reasonably related to the relevant duties and tasks" (Rawls, 1971, p.245).

called the "efficiency" effect of education.[64]

Van Parijs also believes that education is important because of "mildly paternalistic reasons".[65] Since it allows people to better enjoy the possibilities that they have in life. This latter argument could justify the public provision of education up to certain age, say, 16 years old. Beyond this age, it is only the efficiency argument, mentioned above, which could justify the public funding of education from a real-libertarian perspective.

For Rawls, on top of the efficiency argument, education is important because it allows citizens to become fully cooperative members of society; it does so in at least two ways. First, it helps citizens to develop their "two moral powers" and strengthens self-esteem.[66] Second, it trains citizens to perform socially useful tasks. Since for Rawls the main way in which citizens have access to social and economic advantages is through work, education is crucial because it amounts to providing them, from the outset, with the means to improve their life prospects.[67] From the perspective of justice as fairness, education is probably the best way in which the fair share of social and economic advantages of the worst-off could be boosted. In my interpretation, the fact that education is important for citizens to become fully cooperative members of society clearly justifies, from Rawls' account, the subsidized provision of adult education for reasons different from efficiency.

In the case of real-libertarianism this last component is not present, because citizens do not have to cooperate or to perform any useful social task

[64] See, for instance, Rawls, 1971, p.87, Rawls, 2001, p.86, and Van Parijs, 1995, p.43.

[65] It is worth to highlight that this "mildly paternalistic" argument for providing part of the UBI in kind, in the form of education, is not explicitly mentioned in Van Parijs, 1995. Nevertheless, it has been emphasized in later writings, see for instance Van Parijs, 2009, p.13 and Van Parijs and Vanderborght, 2017, p.104.

[66] "Thus, for example, resources for education are not to be allotted solely or necessarily mainly according to their return as estimated in productive trained abilities, but also according to their worth in enriching personal and social life of citizens, including here the less favored" (Rawls, 1971, p.92).

[67] "In property-owning democracy, on the other hand, the aim is to realize in the basic institutions the idea of society as a fair system of cooperation between citizens regarded as free and equal. To do this, those institutions must, from the outset, put in the hands of citizens generally, and not only of a few, sufficient productive means for them to be fully cooperating members of society on a footing of equality. Among these means is human as well as real capital, that is, knowledge and an understanding of institutions, educated abilities, and trained skills" (Rawls, 2001, p.140).

in order to enjoy the highest possible UBI. The share of economic means of the least advantaged is secured unconditionally, regardless of their individual efforts. Therefore, leaving aside efficiency consideration, devoting public funds to adult education implies a reduction of the UBI, which amounts to discriminate against those for whom education is not part of their life plans.

3.7 Discussion

In this section I discuss three issues that stem from what has been presented throughout the piece. The purpose is to fix ideas and/or to point towards what I perceive as difficulties or limitations of the authors' approaches.

I start by arguing that by focusing too much on individual purchasing power, Van Parijs disregards other important determinants of opportunities. Next, I point out that in my opinion, despite the existing discrepancies, the approaches of Sen and Rawls do not entail important differences in terms of public policies concerning the issues that have been analyzed. Finally, I interpret and try to deduce what Rawls means by "cooperation" and comment two critiques that such interpretation could possibly engender.

3.7.1 More Money, More Opportunities?

According to Rawls and Van Parijs, inequalities could be justified only if they are in the interest of the worst off. However, I think that Rawls is right when he states that if society permits large disparities, "these differences cannot help but cause a loss of self-esteem" (Rawls, 1971, p.479); and the importance that Rawls' ascribes to self-esteem (or self-respect) as a determinant of opportunities is, in my view, well deserved. Thus, because of its effects on self-respect, inequality (of income and wealth) is an important determinant of the opportunities that people have in life.

Nevertheless, whereas both Rawls' and Sen are concerned by inequality in its own right, Van Parijs is not (see Section 3.6.1). A real-libertarian could possibly argue that the taxes required to fund the highest possible UBI

would limit inequality substantially. This might be true, however, whether this happens or not is an empirical question, purely contingent, and not a requirement of justice as conceived by real-libertarians. In turn, an opposite argument is also potentially true; it might well be that to finance and sustain a sufficiently high basic income, a high level of inequality is *needed* (in order to prevent massive individual disincentives to work).

I do not deny that a substantial UBI, "the highest possible", as the one envisioned by Van Parijs, has a great potential to boost opportunities. For example, it might allow people to perform the activities that they want through self-employment. It could increase their bargaining power to enter employment relationships. It could avoid the need of possibly stigmatizing transfers to secure a social minimum, etc. However, having the material means for doing "whatever one might want to do" is less momentous if one's sense of worth is damaged. Not sufficiently protecting people's trust in their capacity to conceive and carry on a life plan is an important drawback of Van Parijs' theory.

Another issue that seems crucial to boost everyone's opportunities is to design the school system "in order to even out class barriers". An elitist school system as the one described in Section 3.6.2, would certainly affect the opportunities of future adults who were not able to attend the best schools. Such exclusion has effects not only in their concrete knowledge and possibilities, but also on what *they believe* is possible and worth carrying on.

As explained before, Rawls fair equality of opportunity would veto an elitist educational system, Sen would as well. But Van Parijs, who has no specific concern in securing fair equality of opportunity, would not. For real libertarians, such an educational system would pose no problem as long as there are no efficiency losses. That is, as long as offices and positions are allocated in the most efficient way, and the attached wages are fairly taxed to finance the highest possible UBI.

Van Parijs argument to tax wages relies on his original idea of considering jobs as assets (see Section 3.3.3). In my view, this idea is *a priori* well justified. Very briefly, his argument is the following: In a non-Walrasian world, in which the labor market does not clear, people who hold a job enjoy (monetary and non-monetary) rents. Thus, what should be done, is to tax wages at the highest sustainable rate (the one that maximizes the yield)

and redistribute these resources among all (through an UBI).

However, in a setup in which fair equality of opportunity is not secured, more concretely, in a setup in which people have different opportunities for education, the best jobs would be systematically allocated (at least to a great extent), to those who attended the best schools. In my view, in such a context, taxing their wages and redistributing the yield to boost the income of the worst off is not enough.

In fact, it is not hard to imagine that a job might *be part* of at least some people's life plan. That is, a job might be more than an "external mean" (or "external asset"[68]) to carry on a life plan. It might actually be *part* of the life that some people consider worth living.

In a context in which fair equality of opportunity is not secured, the institutions are not doing enough to eliminate (or at least to reduce) the effect of contingencies. Because of this reason, Van Parijs' argument of considering jobs as assets, in my view, would only be sufficiently solid in a context in which fair equality of opportunity is guaranteed as well. Otherwise it looks closer to outcome equalization rather than to opportunities leximining.[69]

Finally, contrary to Van Parijs, I think that there are good reasons, other than efficiency, to justify public funding of education even beyond 16 years old (see the last part of Section 3.6.2). As one could infer from Rawls' writings, adult education might have an important role in consolidating independent preferences, in empowering citizens and in allowing them to develop networks of like-minded supportive others. All this could be crucial to provide them a sense of belonging to society and to endow them with the means to carry on a life that is worth living for them.

Therefore, I think that having a society in which people from all backgrounds are confident to receive the best available education (diverse, broad,

[68] As we have seen, Van Parijs defines external assets as "the whole set of external *means* that affect people's capacity to pursue their conceptions of the good life" (Van Parijs, 1995, p.101, my emphasis).

[69] To be clear, of course, outcome equalization is not real-libertarianism pretension. In their view "the granting of a basic income to everyone should therefore not be misunderstood as aiming to equalize outcomes or achievements. Rather, it aims to make less unequal, and distribute more fairly, real freedom, possibilities and opportunities" (Van Parijs and Vanderborght, 2017, p.107). However, for the reasons just explained, it seems to me that this goal is not attained unless fair equality of opportunity is secured as well.

and non-elitist), at least until, say 25 years, is desirable and should be a goal in its own right (apart from the indirect effects that it might have on efficiency).[70]

3.7.2 Public Policy Implications: Proximity of Rawls and Sen

Despite the existing differences in the ethical views of Rawls and Sen (see Section 3.3.1 and Section 3.3.2),[71] I maintain that their approaches do not entail substantial differences in terms of public policies with respect to the access to an income.

Sen's main concern is to fight evident injustices by preventing or adequately responding to facts such as famines, illiteracy, epidemics.[72] It is true that from a global perspective different motivations of the behavior towards others (see Section 3.4.2) could give rise to contrasting implications. Nevertheless, for a given society, Rawls also gives a crucial place to these concerns. This is most evident on the passage of Rawls, 2001, p.44, which was mentioned before, where Rawls states that "this principle [the first principle] may be preceded by a lexically prior principle requiring that basic needs be met, at least insofar as their being met is a necessary condition for citizens to understand and to be able fruitfully to exercise the basic rights and liberties".[73]

[70] Birnbaum (2017) elaborates an interesting objection to real libertarianism on the grounds of social empowerment, with which I fully agree. In his view, real-libertarianism is detached "from many of the most urgent political considerations in real-world democracies about how to sustainably empower vulnerable groups to participate as equals in their societies".

[71] For further discussion of the differences between Rawls' and Sen's approach see Section 5 of Robeyns (2016).

[72] For example, "Society may be seen as having a special responsibility to make sure that no one has to starve, or fail to obtain medical attention for a serious but eminently treatable ailment" (Sen, 2000, p.70) and "The argument can proceed by pointing to the wrongness of denying to out of work famine victims -unable to find remunerative work for survival-reasonable claims on support from the rest of society" (ibid, p.78).

[73] Sen, 2009, p.300, commenting the priority of liberty in justice as fairness, states: "Why must any violation of liberty, significant as it is, invariably be judged to be more crucial for a person – or for a society – than suffering from intense hunger, starvation, epidemics and other calamities?" In my opinion, the cited statement of Rawls answers to this concern: guaranteeing liberty is not *always* the priority for Rawls. Put another way,

For Rawls this is a starting point, that is, only when people have their basic needs met they are able to exercise their rights and liberties, and only then, they can effectively choose if they want to contribute and how. This is compatible with the importance that Sen ascribes the concept of "self-help". Moreover, as pointed out in footnote 48, Rawls (as well as Sen), was sympathetic to the idea of wage subsidies. And both of them emphasize the obligation of society of providing widespread opportunities of employment.

Finally, neither Rawls nor Sen have shown support for the implementation of an UBI à la Van Parijs. However, Rawls' position has been more categorical than Sen's. As pointed out before (see Section 3.4.1) Rawls' difference principle entitlement to a "social minimum" is restricted to those citizens willing to cooperate. Thus, he is clearly against providing to every citizen "the highest possible UBI". In turn, to the best of my knowledge, despite his remarked emphasis on the importance of promoting employment opportunities (see Section 3.5.2), Sen has never explicitly manifested opposition towards an UBI program in developed countries. For a poor country like India, Sen's position against an UBI seems more clear. He declared in an interview (McFarland, 2017) that an UBI is not the best strategy for dealing with poverty. In his view, funding health care and education and other public services should be the priority for development, and regarding these matters the State cannot escape its responsibility.

3.7.3 Rawls' "Contribution" and its Implications

It is not totally clear what Rawls means by contribution/cooperation. As stated before, through many passages one could arguably deduce that what he has in mind most of the time is actually "working". However, he does not say that citizens have to work, he says that they have to contribute, which of course is not the same. One reason for doing so may be the fact that Rawls, at least in his original writings, probably had in mind a traditional family in which most women stayed at home to take care of the children and men earned a wage high enough to cover the needs of all the family.

The fuzziness of the concept of cooperation is unfortunate, among other

guaranteeing liberty requires, as a pre-condition, that basic needs are met.

things because it creates a grey zone regarding the entitlement of the difference principle to a fair share of primary goods. For example, at the end of Section 3.4.1 I raised a number of questions concerning the entitlement of the difference principle to children caregivers. Rawls does not provide clear cut answers to those questions. Nevertheless, I think that it is possible to answer them rooted on Rawls' spirit. Closely sticking to Rawls' writings, I would answer them as follows:

Married childcare providers should be entitled to an equal share of the income of their partner (in fact, this was suggested by Rawls; see Rawls, 2001, p.167).[74] For single mothers, Rawls says nothing, but since he clearly states that "reproductive labor is socially necessary labor", this could be interpreted as implying that single women who take care of their children should be entitled by the difference principle to the share of primary goods that is guaranteed to the least advantaged. Should mothers be entitled to a higher share if they have more children? I do not think so. In my understanding, above from the "social minimum", the difference principle has no say. They could possibly receive more money if they happen to be "more in need" (See Section 3.5.1), but not because "their contribution is higher". It could be objected to this that a non-working mother, wife of a lawyer, would receive a higher share of primary goods than a single mother, for the "same contribution". The difference, in my view, is that in the first case the entitlement is not to be paid from public funds, whereas in the second one it is.[75]

Thus, more explicitly, my interpretation is that Rawls had in mind a *work* expectation from citizens. Expectation from which childcare providers could be dispensed without losing the entitlement secured by difference principle. Yet, if this interpretation is correct, it could give rise to at least two potential criticisms to Rawls' approach.

The first one, which I share, is that childcare gender norms should not simply be taken as given, which is what Rawls does to some extent, by dispensing childcare providers (today, still, typically women) from the working ex-

[74] This is in line with one of the proposals of Susan Moller Okin for a society in which some families decide to divide the labor in a "traditional" way (see Moller Okin, 1991, p.181).

[75] And, as Rawls points out, if the principles of justice are satisfied, inequalities are allowed to arise from people's voluntary actions in accordance with the principle of free association (Rawls, 1971, p.82).

pectation,[76] instead of proposing alternatives more compatible with gender equity.[77] To fully ensure fair equality of opportunity to both women and men, social gender norms should be fought. This is crucial to allow citizens to build, in a foot of equality, *their own* independent preferences, rooted in *their own* conceptions of a life that is worth living.

The second one, is that Rawls could be said to have a very "productivist approach". However, in my opinion, such potential critique is not well rooted. What Rawls envisions, instead, is a society in which *every member* shoulders the burdens of production.

It is true that according to Rawls, society should be able to "make possible the conditions needed to establish and preserve a just basic structure over time", but this does not imply that the economy must have a positive rate of growth. Rawls explicitly states that justice as fairness does not aim to rule out John Mill's idea of a society in a just stationary state (Rawls, 2001, p.159). In his view "it is a mistake to believe that a just and good society must wait upon a high material standard of life. What men want is meaningful work in free association with others, these associations regulating their relations to one another within a framework of just basic institutions" (Rawls, 1971, p.257).

All this opens the room to several possibilities which are far from "productivism". For example, highly productive economies could use their productivity potential to improve the working conditions, to expand the spectrum of what is considered as work (many useful and creative activities that today are performed informally could be performed in a more structured and publicly recognized way), or to reduce the length of the working time. All this goes in the direction of better sharing, among all, the fruits of cooperation.

3.8 Conclusion

In this chapter the ethical views of John Rawls, Amartya Sen and Philippe Van Parijs regarding citizens' access to an income have been presented and

[76] Of course, as usual, assuming that sufficient work opportunities are available.

[77] Which among other things implies parity of participation in socially valued activities (Fraser, 1994).

discussed. This final section briefly summarizes the main ideas discussed through the piece.

Even though the three authors share a very similar intuition about justice (Section 3.2), their specific conceptions of justice are different (Section 3.3). The most fundamental idea of Rawls' justice as fairness is that society is a fair system of cooperation. The objective of his famous principles of justice is to regulate the way in which cooperation is conducted. More specifically, to regulate the rights and liberties and the inequalities in social and economic advantages among fully cooperative members of society. Sen's approach is less precise, and deliberately so. His approach, very focused on the idea of "capabilities" is very broad and versatile and could be adapted to different circumstances to match particular contexts. Finally, Van Parijs' approach is much more concrete. For him most of the common inheritance of society is very unequally appropriated by some. Thus, a just society should tax these "gifts", up to the point that maximizes the yield, and redistribute the resources among all.

Section 3.4 presents what I believe is, in this matter, their biggest discrepancy. For Rawls a fundamental condition for having an entitlement to a fair share of "primary goods" is to cooperate, to contribute. What he means by "cooperation", nevertheless, is not fully clear. What is clear is that the entitlement guaranteed by the difference principle is not unconditional. In turn, Sen doubts Rawls' "cooperation" (or more clearly, his "reciprocity" argument) to be the *only* possible foundation to think about reasonable behavior towards others. He recalls us, for instance, that the reasoning of the human rights approach concentrates instead in unilateral obligations, because of asymmetry of power. Finally, Van Parijs sustains that every citizen, regardless of *any* condition, should be entitled to the highest possible sustainable share of external resources.

In Section 3.5, I tackle a more practical question: Concretely, how should citizens have access to an income? Rawls' emphasis on work seems to me very clear. Plus, according to him, everyone who wants to work should have the possibility to do it. Moreover, cooperating members should have access to a "social minimum", high enough so that even the least advantaged regard themselves as full members of society. In turn, it is not simple to infer Sen's prescriptions. However, he clearly says that Europe should provide more importance to the "philosophy of self-help" and he urges for the design of public policies which might increase the inclination to em-

ploy more people. Finally, according to Van Parijs, all citizens should be entitled to an UBI, the highest possible, paid mostly in cash. Notably, he remarks that the promotion of employment should not be a goal per se.

Up to this point it might seem that Van Parijs' real libertarianism boosts individual opportunities more than the other approaches. However, some contextualization is needed. With this purpose Section 3.6 outlines the contrasting views of the authors regarding two other important determinants of opportunities, namely (wealth and income) inequality and fair equality of opportunity. All comprised, it seems to me that Van Parijs focuses too much on individual purchasing power, and by doing so, he disregards other crucial determinants of citizen's opportunities; I elaborate this idea in Section 3.7.1.

In Section 3.7.2 I argue that despite the existing differences in Rawls' and Sen's approaches, the practical implications that stem from them are close. Finally, in Section 3.7.3 I propose an interpretation of what Rawls' means by "cooperation" and I discuss the implications that such interpretation could possibly engender.

Let me finish by stating that it is perhaps prudent not to overemphasize the differences among the authors. Thus, for example, for all of them, forcing citizens in rich countries to get their income through work when no work is available is unjust. Plus, remarkably, they all believe that *much more* of what is produced in actual societies should be up for (re)distribution. In fact, they agree that a substantial portion of what is privately appropriated is either the result of interconnected cooperation among citizens or obtained through "gifts", to which no one has an ethically valid claim.

General Conclusion

Let me finish by mentioning what I consider the three most important things that I have learned throughout the research from which this thesis is the outcome.

First, Chapter 1 taught me that people living in poverty might suffer more than others from the fact that cognitive capacity is limited. Dealing with subsistence is a pressing, important and urgent issue, and coping with it taxes the available cognitive resources. Therefore, dealing with scarcity has consequences in all the scopes of life, included job search. Incorporating this into the job search model implies that when people receive cash two counteracting effects are at place: (1) the standard moral hazard effect, coming from the fact that being employed is marginally less attractive and (2) a (new) "scarcity effect", coming from the fact that cash loosens cognitive capacity constraints, and thus allows people to devote more cognitive resources to job search. For people living in poverty, the second effect can be substantial, and it could actually outweigh the first effect, at least for small cash transfers. Thus, this means that for this population, there is not necessarily a trade-off between insurance and incentives. Understanding this is important, because the design of public policies (both in developing and in developed countries) should incorporate the particularities faced by people living in poverty.

Second, from Chapter 2 I learned that the school attendance requirement of conditional cash transfers is not *the* reason why these programs do not have negative effects on labor outcomes. This should be further studied in future research, of course. However, in my subsample of beneficiaries

of PROGRESA, which was not affected by the conditionality of the program, no negative effects on labor outcomes nor hours worked was found. This suggests that the predictions of the neoclassical theory of labor supply should be nuanced and weighted against other possible mechanisms for explaining how people living in poverty behave when receiving money. Their constrained environment with incomplete financial markets and scarce resources for nutrition and health might help explain that people living in poverty prefer to invest the money in urgent matters instead of using it to "buy" leisure. Thus, maybe, policy makers should be less worried about long-term dependency when providing money to people living in poverty. Much more serious than the individual incentives induced by cash transfers, it seems to me, is the fact that not enough working opportunities are available for these persons.

Third, working on Chapter 3 I realized that Rawls, Sen and Van Parijs agree that no one should be denied the opportunity to have access to an income, not even in poor countries. Their ethical arguments differ, and their policy implications are distinct,[78] which, of course, engenders a considerable practical difficulty. However, in their view (which I share) a substantial part of what is privately appropriated is either the result of interconnected cooperation among citizens or obtained through some sort of "gifts"[79] to which no one has an ethically valid claim. This implies that much (much!) more of what is produced in actual societies should be up for (re)distribution. I also learned, reading them, that "laws and institutions no matter how efficient and well-arranged must be reformed or abolished if they are unjust" (Rawls, 1971, p.3). Thus, reflecting about what is just or unjust, and building one's own opinion is, in my view, important to challenge the actual laws and institutions,instead of taking them as given.

[78] Concretely, how should citizens have access to an income? Rawls' emphasis on work seems to me very clear. In his view, everyone who wants to work should have the possibility to do it. Moreover, cooperating members should have access to a "social minimum", high enough so that even the least advantaged regard themselves as full members of society. In turn, it is not simple to infer Sen's prescriptions. However, he clearly says that Europe should provide more importance to the "philosophy of self-help" and he urges for the design of public policies which might increase the inclination to employ more people. Finally, according to Van Parijs, all citizens should be entitled to an unconditional basic income, the highest possible, paid mostly in cash. Notably, he remarks that the promotion of employment should not be a goal per se.

[79] Which stem from what was given to us freely by nature, technological progress, capital accumulation, social organization, etc. From which people benefit very unequally.

Bibliography

Abadie, A., Athey, S., Imbens, G. W., and Wooldridge, J. (2017). When should you adjust standard errors for clustering? *NBER Working Paper Series 24003*.

Adato, M., de la Brière, B., Mindek, D., and Quisumbing, A. (2000). The impact of PROGRESA on women's status and intrahousehold relations. Technical report, International Food Policy Research Institute.

Aguiar, M., Hurst, E., and Karabarbounis, L. (2013). Time use during the great recession. *American Economic Review*, 103(5):1664–1696.

Alderman, H. and Yemtsov, R. (2013). How can safety nets contribute to economic growth? *Policy Research World Bank Working Paper6437*.

Algan, Y., Cheron, A., and Hairault, J.-O. (2003). Wealth effect on labor market transitions. *Review of Economic Dynamics*, 6(1):156–178.

Alvarez-Parra, F. and Sanchez, J. M. (2009). Unemployment insurance with a hidden labor market. *Journal of Monetary Economics*, 56:954–967.

Alzua, M. L., Cruces, G., and Ripani, L. (2013). Welfare programs and labor supply in developing countries: experimental evidence from Latin America. *Journal of Population Economics*, 26(4):1255–1284.

Anderson, E. (1999). What is the point of equality? *Ethics*, 109(2):287–337.

Angelucci, M. and de Giorgi, G. (2009). Indirect effects of an aid program: How do cash transfers affect ineligibles' consumption? *American Economic Review*, 99(1):486–508.

Angrist, J. D., Imbens, G. W., and Rubin, D. B. (1996). Identification of causal effects using instrumental variables. *Journal of the American Statistical Association*, 91(434):444–455.

Angrist, J. D. and Pischke, J.-S. (2009). *Mostly Harmless Econometrics: An Empiricist's Companion*. Princeton University Press.

Ardington, C., Case, A., and Hosegood, V. (2009). Labor supply responses to large social transfers: Longitudinal evidence from South Africa. *American Economic Journal*, 1(1):22–48.

Arneson, R. (1990). Is work special? justice and distribution of employment. *American Political Science Review*, 84(4):1127–1147.

Arslan, Y., Guler, B., and Taskin, T. (2013). Home production and the optimal rate of unemployment insurance. December 2013, mimeo.

Attanasio, O. P. and Lechene, V. (2014). Efficient responses to targeted cash transfers. *Journal of Political Economy*, 122(1):178–222.

Attanasio, O. P., Meghir, C., and Santiago, A. (2011). Education choices in Mexico: Using a structural model and a randomized experiment to evaluate PROGRESA. *Review of Economic Studies*, 79(1):37–66.

Baily, M. N. (1978). Some aspects of optimal unemployment insurance. *Journal of Public Economics*, 10(3):379–402.

Baird, S., McKenzie, D., and Özler, B. (2018a). The effects of cash transfers on adult labor market outcomes. *IZA Journal of Development and Migration*, 8(22):1–20.

Baird, S., McKenzie, D., and Ozler, B. (2018b). The effects of cash transfers on adult labor market outcomes. *World Bank, Policy Research Working Paper: WPS8404*.

Banerjee, A., Hanna, R., Kreindler, G., and Olken, B. A. (2017). Debunking the stereotype of the lazy welfare recipient: Evidence from cash transfer programs worldwide. *World Bank Research Observer*, 32(2):155–184.

Banerjee, A., Niehaus, P., and Suri, T. (2019). Universal basic income in thedeveloping world. *Annual Review of Economics*, 11:959–983.

Barrientos, A. and Villa, J. M. (2015). Antipoverty transfers and labour market outcomes: Regression discontinuity design findings. *The Journal of Development Studies*, 51(9):1224–1240.

Barron, J. M. and Mellow, W. (1979). Search effort in the labor market. *The Journal of Human Resources*, 14(3):389–404.

Basten, C., Fagereng, A., and Telle, K. (2014). Cash-on-hand and the duration of job search: Quasi-experimental evidence from Norway. *The Economic Journal*, 124(576):540–568.

Becker, G. (1965). A theory of the allocation of time. *The Economic Journal*.

Behrman, J. and Todd, P. (2000). Randomness in the experimental samples of PROGRESA (education, health and nutrition program). Technical report, International Food Policy Research Institute.

Ben-Horim, M. and Zuckerman, D. (1987). The effect of unemployment insurance on unemployment duration. *Journal of Labor Economics*, 5(3):386–390.

Bertrand, M., Duflo, E., and Mullainathan, S. (2004). How much should we trust difference-in-differences estimates? *The Quarterly Journal of Economics*, 119(1):249–275.

Bhalotra, S. (2007). Is child work necessary? *Oxford Bulletin of Economics and Statistics*, 69(1):29–55.

Bianchi, M. and Bobba, M. (2013). Liquidity, risk and occupational choices. *Review of Economic Studies*, 80:491–511.

Birnbaum, S. (2012). *Basic Income Reconsidered: Social Justice, Liberalism and the Demands of Equality*. Palgrave MacMillan, New York.

Birnbaum, S. (2017). Equality of opportunity and the precarization of labour markets. *European Journal of Political Theory*. Online first, December 2017.

Bosch, M. and Esteban-Pretel, J. (2015). The labor market effects of introducing unemployment benefits in an economy with a high informality. *European Economic Review*, 75:1–17.

Bosch, M. and Manacorda, M. (2012). Social policies and labor market outcomes in Latin America and the Caribbean: A review of the existing evidence. *Centre for Economic Performance, Ocassional Paper 32*.

Cahuc, P., Carcillo, S., and Zylberberg, A. (2014). *Labor Economics*. The MIT Press.

Cameron, A. C. and Miller, D. L. (2015). A practitioner's guide to cluster-robust inference. *The Journal of Human Resources*, 50(2):317–372.

Cappelen, A. W. and Tungodden, B. (2006). A liberal egalitarian paradox. *Economics & Philosophy*, 22(3):393–408.

Card, D., Chetty, R., and Weber, A. (2007). Cash-on-hand and competing models of intertemporal behavior: New evidence from the labor market. *Quarterly Journal of Economics*, 122(4):1511–1560.

Centeno, M. and Novo, A. A. (2014). Do low-wage workers react less to longer unemployment benefits? Quasi-experimental evidence. *Oxford Bulletin of Economics and Statistics*, 76(2):185–207.

Cesarini, D., Lindqvist, E., Notowidigdo, M. J., and Östling, R. (2017). The effect of wealth on individual and household labor supply: Evidence from swedish lotteries. *American Economic Review*, 107(12):3917–3946.

Charlot, O., Malherbet, F., and Ulus, M. (2016). Unemployment compensation and the allocation of labor in developing countries. *Journal of Public Economic Theory*, 18(3):385–416.

Chetty, R. (2006). A general formula for the optimal level of social insurance. *Journal of Public Economics*, 90(10):1879–1901.

Chetty, R. (2008). Moral hazard versus liquidity and optimal unemployment insurance. *Journal of Political Economy*, 116(2):173–234.

Chetty, R. and Looney, A. (2006). Consumption smoothing and the welfare consequences of social insurance in developing economies. *Journal of Public Economics*, 90(12):2351–2356.

Cockx, B., Dejemeppe, M., Launov, A., and Van der Linden, B. (2018). Imperfect monitoring of job search: Structural estimation and policy design. *Journal of Labor Economics*, 36(1):75–120.

de Brauw, A. and Hoddinott, J. (2011). Must conditional cash transfer programs be conditioned to be effective? the impact of conditioning transfers on school enrollment in Mexico. *Jorunal of Development Economics*, 53(1):37–66.

Decreuse, B. (2002). On the time sequence of unemployment benefits when search is costly. *Labour*, 16:609–633.

Dercon, S. (1998). Wealth, risk and activity choice: Cattle in western Tanzania. *Journal of Development Economics*, 55(1):1–42.

Duflo, E. (2003). Grandmothers and granddaughters: Old-age pensions and intrahousehold allocation in South Africa. *World Bank Economic Review*, 17:1–25.

Duflo, E., Glennerster, R., and Kremer, M. (2007). Using randomization in development economics research: A toolkit. In Schultz, P. and Strauss, J. A., editors, *Handbook of Development Economics*, volume 4, pages 3895–3962. North Holland.

Dworkin, R. (2000). *Sovereign Virtue: The Theory and Practice of Equality. Cambridge*. Harvard University Press.

Easley, D., Kiefer, N., and Possen, U. (1985). An equilibrium analysis of optimal unemployment insurance and taxation. *The Quarterly Journal of Economics*, 100(1):989–1010.

Fiszbein, A. and Schady, N. (2009). *Conditional Cash Transfers: Reducing Present and Future Poverty*. World Bank Publications.

Fitoussi, J.-P. (1994). Wage distribution and unemployment: The french experience. *The American Economic Review*, 84(2):59–64.

Fitoussi, J.-P. and Rosanvallon, P. (1996). *Le Nouvel âge des inégalités*. Seuil, Paris.

Franklin, S. (2018). Location, search costs and youth unemployment: Experimental evidence from transport subsidies in Ethiopia. *Economic Journal*, 128(614):2353–2379.

Fraser, N. (1994). After the family wage: Gender equity and the welfare state. *Political Theory*.

Gahvari, F. (1994). In-kind transfers, cash grants and labor supply. *Journal of Public Economics*, 55:494–504.

Gertler, P. (2000). The impact of PROGRESA on health. Technical report, International Food Policy Research Institute.

Gertler, P. J., Martinez, S. W., and Rubio-Codina, M. (2012). Investing cash transfers to raise long-term living standards. *American Economic Journal: Applied Economics*, 4(1):164–192.

Gonzalez, L. (2013). The effect of a universal child benefit on conceptions, abortions, and early maternallabor supply. *American Economic Journal: Economic Policy*, 5(3):160–188.

Gonzalez-Rozada, M. and Ruffo, H. (2016). Optimal unemployment benefits in the presence of informal labor markets. *Labour Economics*, 41:204–227.

Hart, H. (1979). Between utility and rights. In Ryan, A., editor, *The Idea of Freedom*, pages 77–98. Oxford University Press, Oxford.

Haughton, J. and Khandker, S. R. (2009). *Handbook on Poverty and Inequality, Ch.2 Measuring Poverty*. The World Bank.

Haushofer, J. and Shapiro, J. (2016). The short-term impact of unconditional cash transfers to the poor: Experimental evidence from Kenya. *The Quarterly Journal of Economics*, 131(4):1973–2042.

Hendren, N. (2017). Knowledge of future job loss and implications for unemployment insurance. *American Economic Review*, 107(7):1778–1823.

Hoddinott, J. and Skoufias, E. (2004). The impact of PROGRESA on food consumption. *Economic Development and Cultural Change*, 53(1):37–61.

Hopenhayn, H. A. and Nicolini, J. P. (1997). Optimal unemployment insurance. *Journal of Political Economy*, 105(2):412–438.

Hupkau, C. and Maniquet, F. (2018). Identity, non-take-up and welfare conditionality. *Journal of Economic Behavior & Organization*.

Imbens, G. W. and Rubin, D. B. (2015). *Causal Inferences for Statistics, Social, and Biomedical Sciences. An Introduction*. Cambdridge University Press.

International Labour Office (2010). World social security report 2010/11: Providing coverage in times of crisis and beyond. Technical report, International Labour Office – Geneva.

Jones, D. and Marinescu, I. (2018). The labor market impacts of universal and permanent cash transfers: Evidence from the alaska permanent fund. NBER WORKING PAPER SERIES, n.24312.

Kolsrud, J., Landais, C., Nilsson, P., and Spinnewijn, J. (2015). The optimal timing of unemployment benefits: Theory and evidence from sweden. IZA Discussion Paper Series No. 9185.

Kooreman, P. (2000). The labeling effect of a child benefit system. *The American Economic Review*, 90(3):571–583.

Kroft, K. and Notowidigdo, M. J. (2016). Should unemployment insurance vary with the unemployment rate? Theory and evidence. *Review of Economic Studies*, 83(3):1092–1124.

Krueger, A. B. and Muller, A. (2010). Job search and unemployment insurance: New evidence from time use data. *Journal of Public Economics*, 94(3):298–307.

Kupets, O. (2006). Determinants of unemployment duration in Ukraine. *Journal of Comparative Economics*, 34(2):228–247.

Kymlicka, W. (2002). *Contemporary Political Philosophy*. Oxford University Press, Oxford, second edition.

LaLumia, S. (2013). The EITC, tax refunds and unemployment spells. *American Economic Journal: Economic Policy*, 5(2):188–221.

Lee, D. S. (2009). Training, wages and sample selection: Estimating sharp bounds on treatment effects. *The Review of Economic Studies*, 76:1071–1102.

Leibenstein, H. (1957). The theory of underemployment in backward economies. *Journal of Political Economy*, 65(2):91–103.

Lentz, R. (2009). Optimal unemployment insurance in an estimated job search model with savings. *Review of Economic Dynamics*, 12(1):37–57.

Lentz, R. and Tranaes, T. (2005). Job seach and saving: Wealth effects and duration dependence. *Journal of Labor Economics*, 23(3):467–489.

Lindbeck, A. (1994). The welfare state and the employment problem. *The American Economic Review*, 84(2):71–75.

Long, I. W. and Polito, V. (2017). Job search, unemployment protection and informal work in advanced economies. Cesifo Working paper No. 6763.

Mani, A., Mullainathan, S., Shafir, E., and Zhao, J. (2013). Poverty impedes cognitive function. *Science*, 341(6149):976–980.

Manning, A. (2011). *Handbook of Labor Economics*, volume IV, chapter 11: Imperfect Competition in the Labor Market, pages 976–1042. North Holland. Editors: David Card and Orley Ashenfelter.

Margolis, D., Navarro, L., and Robalino, D. (2014). Unemployment insurance, job search and informal employment. In Froelich, M., Kaplan, D., Pages, C., Rigolini, J., , and Robalino, D., editors, *Social Insurance and Labor Markets: How to Protect Workers while Creating Good Jobs*. Oxford University Press.

Mas-Colell, A., Whinston, M. D., and Green, J. R. (1995). *Microeconomic Theory*. Oxford University Press.

Mazur, K. (2016). Can welfare abuse be welfare improving? *Journal of Public Economics*, 141:11–28.

McCall, J. (1970). Economics of information and job search. *Quarterly Journal of Economics*, 84(1):113–126.

McFarland, K. (2017). Amartya Sen: India not ready for a basic income. Basic Income Earth Network (BIEN). https://basicincome.org/news/2017/03/nobel-laureate-economist-amartya-sen-india-not-ready-basic-income/.

Meade, J. (1964). *Efficiency, Equality, and the Ownership of Property*. G. Allen and Unwin, London.

Mesén Vargas, J. (2018). Income effect on labor outcomes for people living in poverty: the case of PROGRESA. *IRES discussion paper 2018-15*.

Mesén Vargas, J. and Van der Linden, B. (2018). Is there always a trade-off between insurance and incentives? the case of unemployment with subsistence constraints. *CESifo WP Series n.7044-2018*. CESifo WP Series n.70.

Mesén Vargas, J. and Van der Linden, B. (2019). Why cash transfer programs can both stimulate and slow down job finding. *IZA Journal of Labor Economics*, 8(1):1–27.

Moller Okin, S. (1991). *Justice, Gender and the Family*. Basic Books, Inc., Publishers, New York.

Moriarty, J. (2009). Rawls, self-respect, and the opportunity for meaningful work. *Social Theory and Practice*, 35(3):441–459.

Morris, A. and Wilson, S. (2014). Struggling on the newstart unemployment benefit in Australia: The experience of a neoliberal form of employment assistance. *The Economic and Labour Relations Review*, 25(2):202–221.

Mortensen, D. (1977). Unemployment insurance and job decisions. *Industrial and Labor Relations Review*, 30(4):505–517.

Mullainathan, S. and Shafir, E. (2013). *Scarcity*. Times Books, Henry Holt and Company.

Musgrave, A. (1974). Maximin, uncertainty, and the leisure trade-off. *The Quarterly Journal of Economics*, 88(4):625–632.

OECD (2017). Pensions at a glance 2017: OECD and G20 indicators. Link: https://stats.oecd.org/index.aspx?queryid=69412, OECD Publishing, Paris.

Parker, S. and Skoufias, E. (2000). The impact of progresa on work, leisure and time allocation. Technical report, International Food Policy Research Institute.

Parker, S. and Todd, P. (2017). Conditional cash tranfers: The case of Progresa/Oportunidades. *Journal of Economic Literature*, 55(3):866–915.

Pavoni, N. (2007). On optimal unemployment compensation. *Journal of Monetary Economics*, 54(6):1612–1630.

Petit, P. (1999). *Republicanism: A Theory of Freedom and Government*. Oxford University Press.

Phelps, E. (1997). *Rewarding Work: How to Restore Participation and Self Support to Free Enterprise*. Harvard University Press, Cambridge, Massachusetts.

Phelps, E. S. (1994a). Low-wage employment subsidies versus the welfare state. *American Economic Review*, 84(2):54–58.

Phelps, E. S. (1994b). *Structural slumps: The modern equilibrium theory of unemployment, interest, and assets*. Harvard University Press.

Phelps, E. S. (2001). Subsidize wages. In Cohen, J. and Rogers, J., editors, *What's wrong with a free lunch?*, pages 51–59. Beacon Press, Boston, Massachusetts.

Phelps, E. S. (2007). *Rewarding Work: How to Restore Participation and Self-Support to Free Enterprise, With a New Preface*. Harvard University Press, Cambridge, Massachusetts.

Picchio, M., Suetens, S., and van Ours, J. C. (2018). Labour supply effects of winning a lottery. *The Economic Journal*, 128(611):1700–1729.

Pogge, T. (1989). *Realizing Rawls*. Cornell University Press, Ithaca and London.

Rawls, J. (1971). *A Theory of Justice*. Harvard University Press, Cambridge, Massachusetts. Revised Edition of 1999.

Rawls, J. (1974). Reply to Alexander Musgrave. *The Quarterly Journal of Economics*, 88(4):633–655.

Rawls, J. (1988). The priority of right and ideas of the good. *Philosophy & Public Affairs*, 17(4):251–276.

Rawls, J. (1993). *Political Liberalism*. Columbia University Press, New York.

Rawls, J. (1999). *The Law of Peoples with "The idea of Public Reason Revised"*. Harvard University Press, Cambridge, Massachusetts.

Rawls, J. (2001). *Justice as Fairness: A Restatement*. The Belknap Press of Harvard University Press, Cambridge Massachusetts.

Robeyns, I. (2016). The capability approach. In Zalta, E. N., editor, *The Stanford Encyclopedia of Philosophy (Winter 2016 Edition)*. Metaphysics Research Lab, Stanford University.

Rothschild, E. (2001). Security and laissez-faire. In Cohen, J. and Rogers, J., editors, *What's wrong with a free lunch?*, pages 43–50. Beacon Press, Boston, Massachusetts.

Rothstein, J. and von Watcher, T. (2017). *Handbook of Economic Field Experiments*, chapter Social Experiments in the Labor Market, pages 556–630. North-Holland. Editors: Abhijit Banerjee and Esther Duflo.

Rubio-Codina, M. (2010). *Research in Labor Economics, Volume 31: Child Labor and the Transition Between School and Work*, chapter Intra-household time allocation in rural Mexico: Evidence from a randomized experiment, pages 219–257. Emerald Group Publishing Limited.

Salehi-Isfahani, D. and Mostafavi-Dehzooei, M. H. (2018). Cash transfers and labor supply: Evidence from a large scale program in Iran. *Journal of Development Economics*, 135:Pages 349–367.

Schilbach, F., Schofield, H., and Mullainathan, S. (2016). The psychological lives of the poor. *American Economic Review: Papers and Proceedings*, 106(5):435–440.

Schirle, T. (2015). The effect of universal child benefits on labour supply. *Canadian Journal of Economics*, 48(2):438–462.

Schmieder, J., Watcher, T. V., and Bender, S. (2012). The effects of extended unemployment insurance over the business cycle: Evidence from regression discontinuity dessign estimates over 20 years. *The Quarterly Journal of Economics*, 127(2):701–752.

Schultz, T. P. (2004). School subsidies for the poor: evaluating the mexican PROGRESA poverty program. *Journal of Development Economics*, 74(1):199–250.

Schwartz, J. (2015). Optimal unemployment insurance: When search takes effort and money. *Labour Economics*, 36:1–17.

Sen, A. (1983). Poor, relatively speaking. *Oxford Economic Papers*, 35(2):153–169.

Sen, A. (1985). The moral standing of the market. *Social Philosophy and Policy*.

Sen, A. (1992). *Inequality Reexamined*. Oxford University Press, Oxford.

Sen, A. (1997). Inequality, unemployment and contemporary europe. *International Labour Review*, 136(2):155–171.

Sen, A. (1998). Individual freedom as social commitment. *India International Centre Quarterly*, 25(4):53–69.

Sen, A. (2000). *Development as Freedom*. Alfred A. Knopf, New York.

Sen, A. (2004a). Capabilities, lists, and public reason: continuing the conversation. *Feminist Economics*.

Sen, A. (2004b). Elements of a theory of human rights. *Philosophy and Public Affairs*, 32(4):315–356.

Sen, A. (2009). *The Idea of Justice*. The Belknap Press of Harvard University Press, Cambridge, Massachusetts.

Shah, A. K., Mullainathan, S., and Shafir, E. (2012). Some consequences of having too little. *Science*, 338(6107):682–685.

Shah, A. K., Shafir, E., and Mullainathan, S. (2015). Scarcity frames value. *Psychological Science*, 26(4):402–412.

Shimer, R. and Werning, I. (2007). Reservation wages and unemployment insurance. *The Quarterly Journal of Economics*, 122(3):1145–1185.

Shimer, R. and Werning, I. (2008). Liquidity and insurance for the unemployed. *American Economic Review*, 98(5):1922–1942.

Skoufias, E. (2005). PROGRESA and its impacts on the welfare of rural households in mexico. Technical report, International Food Policy Resarch Institute.

Skoufias, E., Davis, B., and Behrman, J. R. (1999). An evaluation of the selection of beneficiary households in the education, health, and nutrition program (progresa) of mexico. Technical report, International Food Policy Research Institute.

Skoufias, E. and di Maro, V. (2008). Conditional cash transfers, adult work incentives, and poverty. *Journal of Development Studies*, 44(7):935–960.

Skoufias, E., Parker, S., Behram, J., and Pessino, C. (2001). Conditional cash transfers and their impact on child work and schooling: Evidence from the PROGRESA program in Mexico [with comments]. *Economia*, 2(1):45–96.

Snower, D. J. (1994). Converting unemployment benefits into employment subsidies. *The American Economic Review*, 84(2):65–70.

Standing, G. (2005). *Promoting Income Security as a Right: Europe and North America*. Anthem Press, London.

Steiner, H. (2003). Compatriot priority and justice among thieves. In *Real Libertarianism Assessed*, pages 161–200. Palgrave Macmillan, New York.

Strauss, J. (1986). Does better nutrition raise farm productivity? *Journal of Political Economy*, 94(2):297–320.

Tannery, F. J. (1983). Search effort and unemployment insurance reconsidered. *The Journal of Human Resources*, 18(3):432–440.

Tatsiramos, K. and van Ours, J. C. (2014). Labor market effects of unemployment insurance design. *Journal of Economic Surveys*, 28(2):284–311.

Todd, P. E. and Wolpin, K. I. (2006). Assessing the impact of a school subsidy program in Mexico: Using a social experiment to validate a dynamic behavioral model of child schooling and fertility. *American Economic Review*, 99(5):1384–1417.

Torisky, E. V. (1993). Van Parijs, Rawls, and unconditional basic income. *Analysis*, 53(4):289–297.

van der Veen, R. and Groot, L. (2019). Unconditional basic income and the rejuvenation of the welfare state: A review of basic income: A radical proposal for a free society and a sane economy by Philippe Van Parijs and Yannick Vanderborght. *Comparative Labor Law & Policy Journal*, 40:153–198.

Van Parijs, P. (1995). *Real Freedom for all: What (if Anything) can Justify Capitalism?* Oxford University Press, Oxford.

Van Parijs, P. (1997). Reciprocity and the justification of an unconditional basic income. reply to Stuart White. *Political Studies*, 45(2):327–330.

Van Parijs, P. (2007). International distributive justice. In Goodin, R. E., Pettit, P., and Pogge, T., editors, *A Companion to Contemporary Political Philosophy Vol.II*, pages 638–652. Blackwell Publishing, 350 Main Steet, Malden, second edition.

Van Parijs, P. (2009). Basic income and social justice. Why philosophers disagree. In *Joint Joseph Rowntree Foundation/University of York Annual Lecture 2009*.

Van Parijs, P. (2011). *Linguistic Justice for Europe and for the World*. Oxford University Press.

Van Parijs, P. and Vanderborght, Y. (2017). *Basic Income: A Radical Proposal for a Free Society and a Sane Economy*. Harvard University Press, Cambridge, Massachusetts.

Van Parijs, P. and Vanderborght, Y. (2019). Ethically justifiable, economically sustainable, politically achievable: A response to van der Veen & Groot, Rogers, and Noguera basic income. *Comparative Labor Law & Policy Journal*, 40:247–261.

Vodopivec, M. (2013). Introducing unemployment insurance to developing countries. *IZA Journal of Labor Policy*, 2(1):1–23.

Wall, S. (2019). Perfectionism in moral and political philosophy. In Zalta, E. N., editor, *Stanford Encyclopedia of Philosophy*. Metaphysics Research Lab, Stanford University.

White, S. (1997). Liberal equality, exploitation, and the case for an unconditional basic income. *Political Studies*, 45(2):312–326.

White, S. (2003). *The Civic Minimum: On the Rights and Obligations of Economic Citizenship*. Oxford University Press, Oxford.

Wooldridge, J. (2016). *Introductory Econometrics: A Modern Approach*. Cengage Learning, 6th edition.

Zimmerman, F. and Carter, M. R. (2003). Asset smoothing, consumption smoothing and the reproduction of inequality under risk and subsistence constraints. *Journal of Development Economics*, 71(2):233–260.