CONDITIONAL CASH TRANSFERS IN GUATEMALA: THE NECESSITY OF REFORM AND ADJUSTMENT OF THE SIZE OF THE CASH TRANSFER

By

LOPEZ LOPEZ, Jazmin Isabel

THESIS

Submitted to

KDI School of Public Policy and Management

in partial fulfillment of the requirements

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Committee in charge:

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ABSTRACT

CONDITIONAL CASH TRANSFERS IN GUATEMALA:
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OF THE SIZE OF THE CASH TRANSFER

By

Jazmín Isabel López López

Conditional Cash Transfer (CCT) has been a social program widely known and replicated all around the world, having as main purpose of reducing of poverty through the investment on education, health and nutrition of children in low income families. Using co-responsibilities, the benefited families compromise to use the cash transferred by the government on their kids. With this social policy, the human capital is formed and further developed.

In order to do so, having a clear update framework is necessary to keep improving the performance of the CCT program and specially to obtain the positive outcomes that are expected to be achieved. In the regard, this study analyze the current situation of the CCT program in Guatemala, conducting a simulation on reform and adjustment on the amount of CCT. Moreover, this study determines the updated parameters of the eligibility criteria to be applied to the aforementioned program. Finally, this study examines the Mexican CCT program by conducting a comparative analysis with the Guatemalan program, in order to design a policy implication of how to reform and keep updating the program in Guatemala.

Dedicated to my parents Mario and Flor de María,

my brothers Mauricio, Corbyth, Bhalyel, Melí, Yush and Yamiel,

and my sisters Polly and Ruthie, with all my love and respect

ACKNOWLEDGEMENTS

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Abbreviations

CCT   Conditional Cash Transfer

PMT   Proxy Means Test

INE   Instituto Nacional de Estadística (National Institute of Statistics of Guatemala)

SNAP   Supplemental Nutrition Assistance Program

SEGEPLAN   Secretaría de Planificación y Programación de la Presidencia (Secretariat for Planning and Programming)

OLS   Ordinary Least Squares

CONEVAL   Consejo Nacional de Evaluación de la Política de Desarrollo Social (National Council for Evaluation of Social Development Policy)

INPC   Índice Nacional de Precios al Consumidor (National Consumer Price Index)

INEGI   Instituto Nacional de Estadística y Geografía (National Institute of Statistics and Geography)

CBA   Canasta Básica Alimentaria (Basic Food Basket)

IPC   Índice de Precios al Consumidor (Consumer Price Index)

ENCOVI   Encuesta Nacional de Condiciones de Vida (National Survey of Living Conditions)

Chapter 1

Introduction

According to World Bank Data (2014), Guatemala is a lower middle income country with an estimated population of around 16.1 million. From 1960 to 1996, Guatemala underwent a bloody civil war fought between the government and leftist rebels. Since the end of the war, Guatemala has witnessed both economic growth and successful democratic elections. Given such development, however, the country still continues to struggle with high rates of poverty, illiteracy, malnutrition and political instability (World Bank & Carter Center, 1997).

Halfway through the 1990s, a period of democratic transition of Guatemala, a new social policy called Conditional Cash Transfer (CCT) began to be adopted in different countries in Latin America and the Caribbean. CCT primarily aimed for fighting against poverty, illiteracy and malnutrition, focusing on the boosting of human capital (Valencia Lomelí, 2008). According to Enrique Valencia, "under a CCT program, money is transferred from the state to particular needy households to help support them [with the expenses of] schooling, health care and nutrition" (p. 476). Guatemala launched and implemented a CCT program in 2008. Since then, Cabrera, Delgado and Guzmán (2009), Lavinas and Székely (2011) and Monroy (2011) have conducted impact evaluations on the program to measure its positive impact. The conclusions of their reports are positive in terms of health and education targets, but not sufficiently positive in achieving poverty reduction.

The cornerstone to achieve the goal of reducing poverty and extreme poverty rate is linked to a key element of the CCT program: the size of cash transferred. Cabrera, Delgado and Guzmán (2009), Lavinas and Székely (2011) and Monroy (2011) concluded in their researches that the current amount provided by the government for CCT (Q 300 [1] =

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[1] The currency in Guatemala is Quetzal and its symbol is Q.

1

US\$ 38.75[2]) does not cover the basic needs that are required to alleviate families' extreme poverty, and which creates difficulty in breaking the intergenerational cycle of poverty. Although these previous researches concluded that the amount of CCT is not enough to reduce poverty and extreme poverty, no research has yet been done to identify an appropriate CCT amount that could provide the financial support to target families.

Moreover, the program does not have any policy that reviews the amount of CCT annually or every certain time as other countries have been doing, like Mexico. For this and other features, Mexico was selected by the World Bank (2014) as the exemplary model of CCT programs.

Therefore, this study will try to answer five questions:

1. What are the variables that most correlate with household welfare in Guatemala?

2. What should be the cut-off point of the CCT program in Guatemala most suitable for urban and rural areas, respectively?

3. What should be the amount of CCT for the Guatemalan Program?

4. What are basic differences between the successful CCT program in Mexico and the one in Guatemala?

5. What are the lessons to be learn from the successful CCT program in Mexico to better implement the one in Guatemala?

To investigate and answer the above questions, I used a mix of two methodologies. To answer the first, second and third questions, a quantitative method was used. To do so, the *Proxy Means Test (PMT)* model, a methodology originally developed in Chile that is based on national household surveys, was utilized. For the national household surveys, the data used is the National Survey of Living Conditions 2011 obtained from the website of the

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[2] Exchange rate according to the Central Bank of Guatemala: US\$ 1 = Q 7.74. Retrieved September 5, 2015, from http://www.banguat.gob.gt/cambio/en-default.asp

National Institute of Statistics of Guatemala (INE)[3]. The proxies used include physical housing characteristics, durables goods and demographic characteristics. After the selection of proxies, multiple regression analyses was carried out in order to find the proxies that most correlate with welfare. The number of proxies was 26, and these were the best indicators to explain household welfare. Each proxy was given a weight based on its estimated impact on household expenditure. Households that score below the cut-off point, which in this case would be the average monthly consumption of families in poverty, provided the information needed to determine the appropriate amount of CCT needed to overcome the situation.

Furthermore, to answer the fourth and fifth questions a qualitative method was used. To do so, diverse sources were reviewed such as government statement, reports and yearbooks, to explore the CCT features in the Mexican program. The main components of the success of the Mexican program were studied by focusing on how the Mexican authorities apply them, and how they keep those key elements updated. Finally, based on the above exploration, I analyzed what the CCT program in Guatemala can learn from the CCT program in Mexico in terms of program design and versatility of change in social protection policies.

The study is developed as follows: Chapter 2 briefly examines the conditional cash transfers by utilizing the microeconomic theory and reviewing the background and evolution of the Conditional Cash Transfer Program in Guatemala. Also, are reviewed the theoretical links and empirical literatures. Methodology, data descriptions and empirical results are explained in Chapter 3. Chapter 4, focus on findings obtained through this study. Finally, last chapter is devoted to policy implications.

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[3] *INE* is the acronym in Spanish of *Instituto Nacional de Estadísitca*

Chapter 2

An overview of Conditional Cash Transfers

2.1. Conditional Cash Transfers in theory and practice

2.1.1. Basic theory of Conditional Cash Transfers

The implementation of CCT programs as a social policy in the late 90', was a movement that did not start exclusively in Latin America, as the following map shows in *Figure 1.*
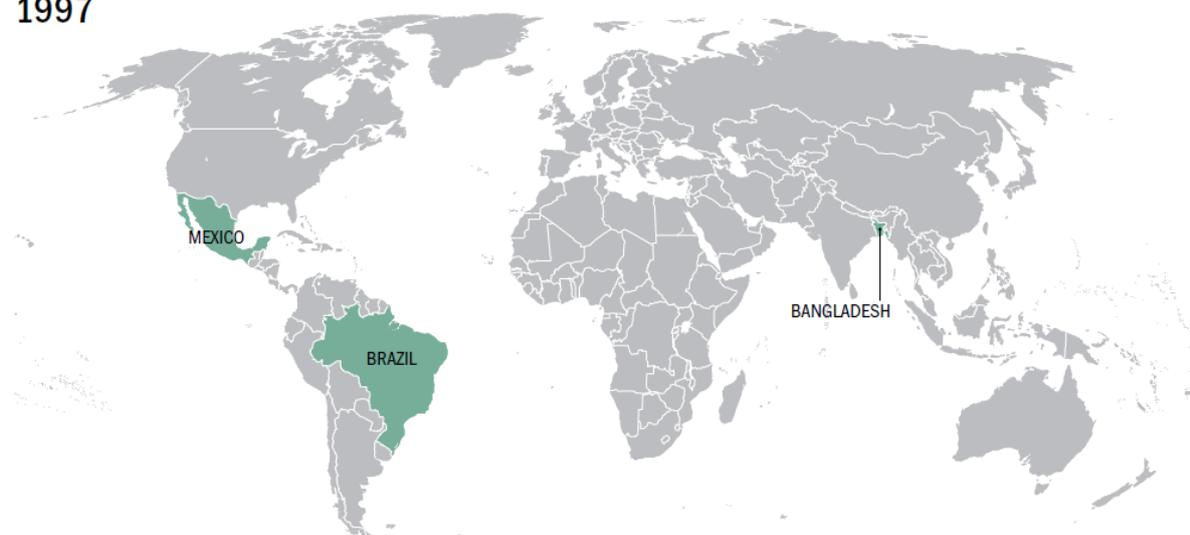
Figure 1. The CCT movement in 1997

Source: World Bank (2009)

Mexico, Brazil and Bangladesh were the pioneer in the CCT field. Their success stories spread around the world over time, leading many countries to follow the same path to fight against poverty and hunger, and boost human capital simultaneously. Then, the CCT program started to be replicated and implemented in different countries adapting the programs to their national context and needs. In 2008, eleven years after the first programs were implemented, the spillover effect became increasingly apparent in the world, and the

CCT movement claimed its stronger presence and acceptance in the Latin American region, as *Figure 2* shows.

Since the early 2000s until now, countries that have CCT programs have conducted impact evaluations to assess whether such social policies have a positive or negative impact on the benefited families. The results of these impact evaluations have been mostly positive, even though the improvement rate varies among countries.
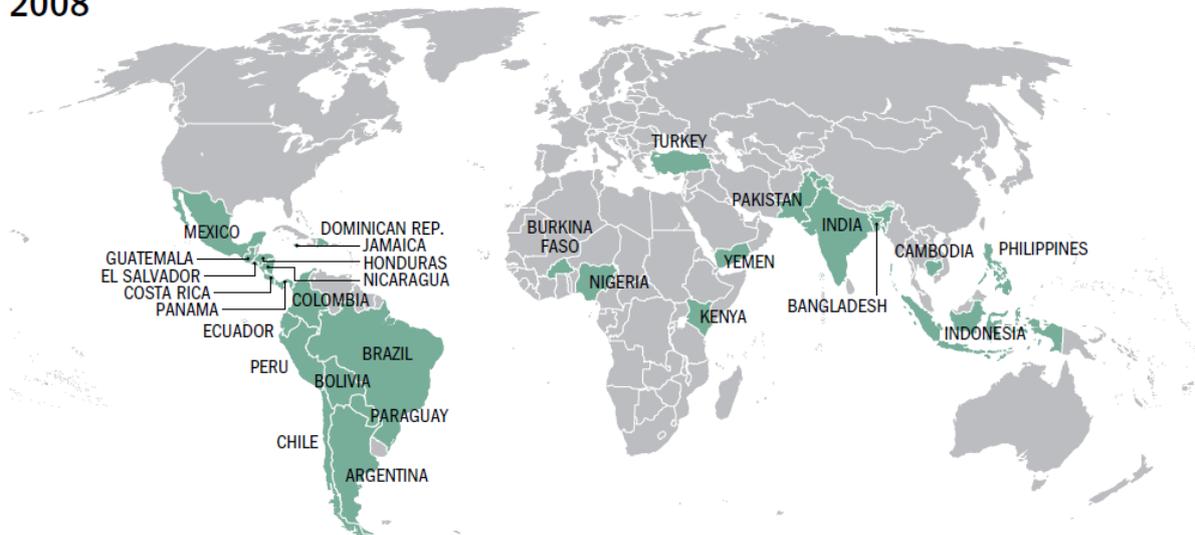
Figure 2. The CCT movement in 2008

Source: World Bank (2009)

Poverty reduction, reduction in malnutrition rates, reduction in child mortality rates, improvement in living standards of extremely poor and poor people, enhancement of access to education, better redistribution of income, and empowerment of women, are some of the main achievements that countries have accomplished through the CCT programs.

There is no doubt that the CCT programs have changed over time the lives of extremely poor and poor people; however, in terms of which particular elements of the CCT program made such achievements possible, further studies need to be conducted. First of all, defining conditional cash transfer must be preceded; CCT is mechanism to provide cash to extremely poor and poor households under the condition of making pre-specified investments

in education, health and nutrition of their children (Fiszbein et al. 2009). Hence, this implies two main factors:

- The target groups of the program are extremely poor and poor families.

- The three aforementioned conditions are given consents by the recipient families. These conditions are focused on benefiting household's children by requiring the beneficiaries to invest in children's health and education services, and improve their nutrition status.

A CCT program also needs to undergo a consolidation process. According to Lavinas and Zsékely (2011), the program should accomplish the following steps:

- **Step 1 – creation and design:** this step consist of (i) developing country poverty assessment; (ii) identifying the priority areas; (iii) defining the instruments to be utilized for implementation; and (iv) setting up the logistical plan and the corresponding operational arrangements.

- **Step 2 - implementation:** this step involves a transition from theory and pilot study into real practice. The real implementation often encounters unexpected circumstances that require some adjustments to the original plan. The most distinctive feature is the initial impact on the demand side of education and health care services, since beneficiaries of the CCT program are obligated to assume such responsibility. At this stage, it is crucial to provide the services of education and health care in the quantity needed, which will prevent the saturation of schools and hospitals. Otherwise, the conditionality will not be effectively met, and it will produce negative impacts.

- **Step 3 - stabilization:** the initial demand for education and health care services becomes constant and stable. In this regard, a mechanisms is put in place to keep track of the beneficiaries' records, so that the authorities can

check whether beneficiaries are meeting their responsibilities and whether expansion of the CCT program can be ordered accordingly.

- **Step 4 - development within the program:** families must have a medium-term plan for investment in human capital. At this stage, the dilemma of how long the benefited families should stay in the program must be solved. Usually, to solve this issue, two criteria are defined: (i) families experiencing temporarily improvement in their socioeconomic conditions or having changed their structural conditions are excluded from the benefits of the program; (ii) clear parameters are fixed to determine whether benefited families need to stay longer in the program due to their own characteristics that need more support.

- **Step 5 – long term impact:** targeted children gradually move out of the cycle of participation eligibility of the CCT program and attain higher levels of education or enter the labor market. In this case, complementary mechanisms should be designed to ensure investment and creation of opportunities for future development of those participants. Complementary programs could be focus on financial support for getting access to higher levels of education, microcredits or employment programs in order to use that human capital productively.

Following this line of ideas, according to Lavinas and Székely in 2011, the CCT program in Guatemala was in *Step 2*, and was ready to enter *Step 3*. This analysis was based on its concrete objectives achieved from 2008 to early 2011; some of those objectives were:

- *Health:* (i) reduction in maternal mortality rates, (ii) reduction in child mortality rates, (iii) reduction in child malnutrition rates.

- *Education:* (i) increase in school attendance rates, (ii) increase in enrollment rates, (iii) increase in primary completion rates.

- *Checks:* in order to fulfill the co-responsibilities by the beneficiaries, *community committees* are organized with a number of *vocales* [4] or *spokespersons* in each community.

- *Balances:* 91,433 *vocales* were organized and distributed across three different areas: (i) education, (ii) health and nutrition, and (iii) transparency.

- *Benefited families were trained on topics related to*: nutrition, health, family planning, community development, community organization, literacy, productive projects and citizenship.

- *Behavioral changes in the beneficiaries are tangible:* (i) empowerment of the female sector, (ii) proactive participation of families in supporting the importance of education for their children, (iii) awareness about health issues.

The CCT programs, like other well-known social policies replicated around the world, have engendered arguments in favor of and against the implementation. The supporters of CCT programs argue that poor people often face difficulty in accessing public services. In this regard, the conditionality of the program effectively produces two positive impacts: in the demand side, the beneficiaries start getting access to services like education and health care; and in the supply side, the government starts reaching out to the poorest provinces by providing them with the services of education and health care. The key element is the targeting process. Targeting poor people as beneficiaries can generate a double outcome: reduction of poverty and reduction of inequality (Fiszbein et al., 2009).

On the other hand, the detractors of CCT programs argue that the best method to fight against poverty is economic growth and boost fiscal revenues. The poorest countries lack in fiscal strategies and administrative competence, and thus, these governments struggle with providing even the basic infrastructure to their population. Under this context, possible

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[4] *Vocales*: is in Spanish the name that the workstation receives to designate the *spokespersons* in each community

beneficiaries perceive CCTs as a lower future payoff, and taxpayers consider the program as a waste of money due to the low capacity of the government in targeting beneficiaries and delivering the cash. Others also argue that the CCT in some cases works as a disincentive for labor supply. Sometimes, benefited families will on purpose stop increasing their wealth and income to stay in the program (Fiszbein et al., 2009).

Other topics widely discussed regarding CCT are their conditionalities. As mentioned before, the conditionalities are the key element for the design of CCT program. In this regard, Fiszbein et al. (2009) explained three main reasons: first, beneficiaries do not always behave in a way that was expected. A study on behavioral economics, conducted by O'Donoghue and Rabin (1999), concluded that people often suffer from self-control problems, because human beings are susceptible to change causing inconsistency in their day-to-day behavior. This inconsistency sometimes is even stronger in a long-term attitude toward the future. In other cases, these behavioral issues turn into conflicts of interests between the parents. In this situation, a parental decision is the crux of emerging conflicts. Under the CCT program, mothers are the ones who play the main role in the CCT program, and they receive the cash through their savings account and take in charge of using the money in accordance with the requirements of the program. However, the patriarchal society sometimes takes away the freedom that mothers need to make investment decisions using the cash that they receive from the program. Such conflicts of interests often create challenges for mothers. However, the CCT program helps to overcome these challenges by making the conditions *a priori*.

The second reason for having conditions in a cash transfer program is the political economy that triggers governments to implement this kind of social policies. The political economy process involves voting, lobbying, bureaucracy and inter-agency bargaining. All these factors are important elements to get the public support. Therefore, if the program has

conditions, the public acceptance of the program might be higher, making the CCT program an achievable long term policy.

Finally, the third reason is market failures and externalities. If the income levels the beneficiaries are already low, the emergence of economic shocks might create a precarious situation for them, and lead them to use the transferred cash for other expenses. The conditionalities are in this case necessary to avoid the deviation of the money usage.

2.1.2. An Economic perspective of Conditional Cash Transfers

The implementation of a social policy in a given country is implicitly constituted of a comprehensive study on its possible outcomes and benefits to the target population. In this regard, another example of social policy replicated in some countries is the *food stamps*. The food stamp program is widely known especially in the United States, and through this program, the government provides assistance to low-income people every month to buy food by using coupons. According to the Department of Agriculture, Food and Nutrition Service of the United States (2015), the *Supplemental Nutrition Assistance Program (SNAP)* is the largest domestic program to prevent hunger. This program benefits more than 25 million low-income people every month. The structure of this program is particular, because it involves participants from different sectors like nutrition educators, faith-based organizations, State agencies, State partners, retail community among others to monitor if the beneficiaries who are getting the food stamps are using the coupons in correct way. In particular, these institutions work as a watch-dog to prevent the resale of the food stamps.

Despite the benefits of the food stamp policy, the rate of positive outcomes that could be achieved by this program shrinks, compared to that of the CCT program. For instance, *Figure 3* illustrates how the family's budget line changes when they are beneficiaries of the given social programs, including the *food stamp* and the *CCT program.* The budget constraint derived from the *food stamp program* is symbolized as EF; on the other hand,

conditional cash transfers will shift the budget constraint upward to E′F′. In another scenario, even if the food stamps represent the same value as the conditional cash transfers, the corresponding shift will be exemplified as E′CF; however the new budget constraint will remain the same as the budget constraint EF in the previous case. Clearly, without the presence of the points CF′ in the case of *food stamps*, the *CCT program* outweighs *food stamps program*. This conclusion holds water even with the consideration of the exceptional case explained above regarding the point C (Currie & Gahvari, 2007).
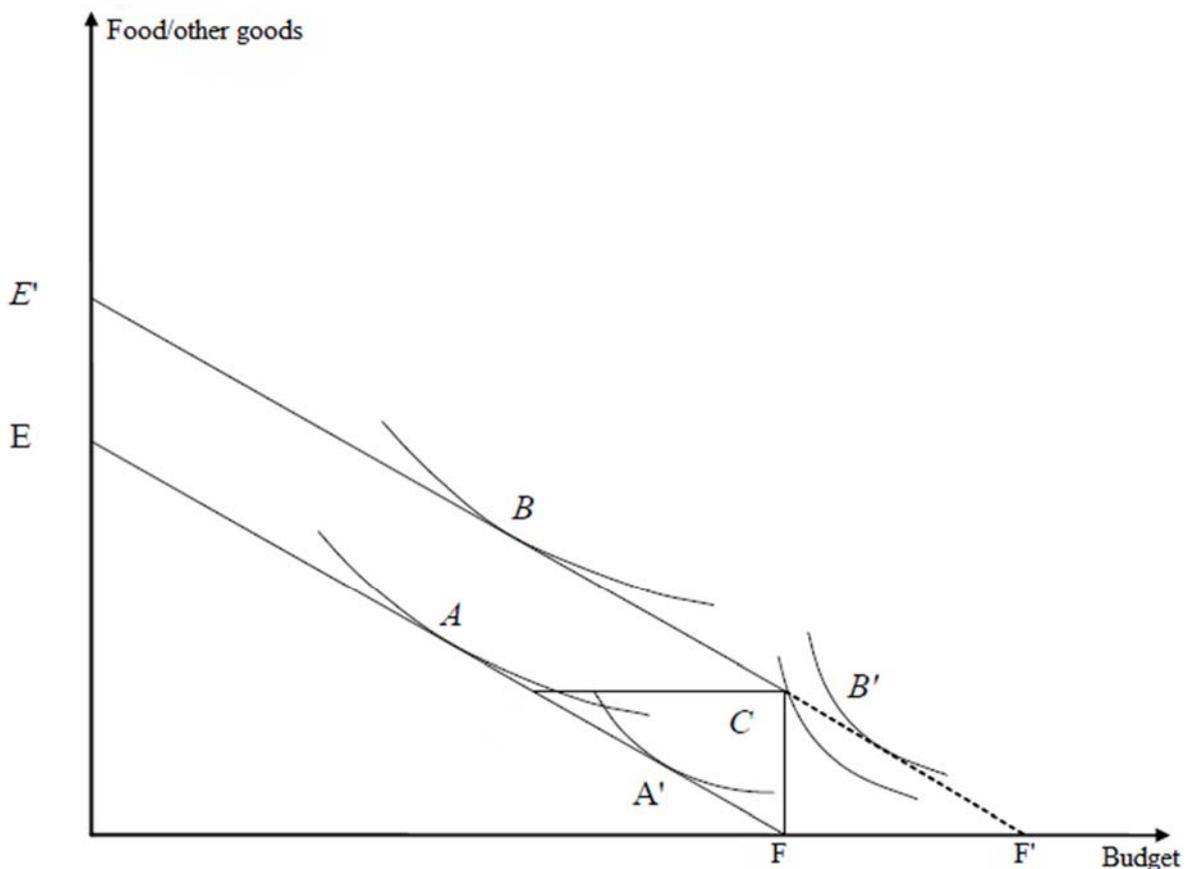
Figure 3. Food Stamps vs CCT Program

Source: Currie & Gahvari (2007)

The graph also describes two possible scenarios depending on the different programs used by the family. In the first case, the benefits the family receives change in accordance with the shift from the use of *food stamps* to the *CCT program*. This shift is reflected as the movement from point A to B. In the second case, the targeted family will get the amount of

money as *food stamps* equivalent to the amount given by the. In this case, the movement is supposed to be from point A′ to point B′, but staying under the *food stamp program* generates a constraint on the amount of benefits received. As a result, the family can only receive the benefits up to the point C (Currie & Gahvari, 2007).

As shown in *Figure 3* the advantages and benefits for the target population from implementing the *CCT program* are higher than using the *food stamp* program. The *food stamps* boost only nutrition aspects, limiting the options of the beneficiaries; meanwhile, the *CCT program* boosts human capital, health and nutrition, making it a more comprehensive social policy due to the flexible use of the cash transferred.

Regardless of positive outcomes of social policies, particularly *CCT programs,* as the mentioned previously, economists have an ongoing debate on whether the government should play a *paternalist* role in a fight against poverty. In other words, discussion is centered on whether the government can achieve income redistribution through incentives given to extremely poor and poor people. The economists argue that the government should provide such incentives not only through providing cash to beneficiaries, but also through making the targeted popularion "(…) behave in ways that are good for them" (Fiszbein et al., 2009). This old notions of the *paternalist* role of the government are increasingly replaced by a new, mainstream approach, which is centered on a political economic perspective.

Under this new approach to CCT as a social contract, the state on behalf of the society supports the needy households, and at the same time, these needy households accept to meet the responsibilities (the conditionalities) that the social contract involves.

According to Levy and Rodríguez (2004) a CCT program does not impose conditions on the beneficiaries, instead, a CCT program establishes co-responsibilities. It is called co-responsibilities because the main subjects of the deal have reciprocal responsibilities to each.

The families will meet specific requirements to be part of the program, and at the same time, the state will meet its responsibility of transferring the cash to them.

It is a fact that the extremely poor and poor families need help. However, if the needy households are play a protagonist role in changing their lives by themselves, instead to playing a secondary role and relying on the state, the CCT program can work as a physiological incentive.

2.1.3. Evolution of Conditional Cash Transfer Program in Guatemala

In August 2002, the Guatemalan Government and the *Secretariat for Planning and Programming* [5] (SEGEPLAN) initiated their first approach to a specific CCT policy, according to Tally and Ochaeta, by signing an agreement of technical and scientific cooperation to implement the Brazilian CCT program, *Bolsa Escola*. This pilot project was conducted in the department of Sololá[6], in coordination with the *Asociación Becaria de Guatemala* benefiting 50 indigenous families.

Afterward, in 2006, SEGEPLAN attended the World Bank International Conference on CCT in Turkey. Later, in 2007, the municipality of Guatemala City began a CCT program to reduce the child labor in the garbage dumps and slums of the city. And finally, in 2008, during former president Alvaro Colom's administration, the World Bank and the Inter-American Development Bank began conversations with SEGEPLAN to implement a CCT program in Guatemala; in the meantime, the United Nations Development Programme provided financial support to Guatemala to design the program. The CCT program was put into practice on April 17th, 2008 with the name *My Family Progresses* [*Mi Familia Progresa*] through Governmental Agreement No. 117-2008.

The features of *My Family Progresses* were:

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[5] Secretaría de Planificación y Programación de la Presidencia -SEGEPLAN- in Spanish
[6] Guatemala is administrative divided into 22 departments (departamentos) and each department is sub-divided into municipalities (municipios), the total number of municipalities in the country are 339.

a. *Rapid expansion and implementation:* the program covered 89 municipalities during the first year of operations in 2008; 179 municipalities in 2009; and 270 municipalities in 2010. In 2011, the program attained its capacity to cover 307 municipalities, out of a total of 333 municipalities in the country, reaching nearly 1 million beneficiaries. In four years, the CCT program covered 92% of the municipalities in the country, which was an unprecedented achievement in the history of CCT programs in Latin America. To expand the coverage rapidly, as mentioned above, the Government followed technical criteria of geographic targeting and household surveys in each community.

b. *The amount of CCT:* the amount is per family, without differentiating the number and gender of children at home.

c. *The responsibilities of beneficiaries are the followings:*

   1. Monthly medical checkup of children under 5 years and pregnant women.

   2. Daily school attendance of children in the ages of 6 to 15 years (minimum 80% of monthly attendance).

   3. Participation in trainings convened by the CCT program authorities.

d. *Interval of payment:* payments are made bimonthly, Q150 (US$ 19.37) to cover health and nutrition expenses and Q150 (US$ 19.37) to cover educational expenses.

e. *Authority in charge:* the authority in charge was the *Social Cohesion Committee* [*Consejo de Cohesión Social]*, under the supervision of the Secretariat of Social Work of the Wife of the President of the Republic of Guatemala.

In January 2012, former president Otto Pérez Molina took office and added new changes to *My Family Progresses:*

a. *Change of the name:* in May 2012, the program was renamed as *My Safe Bonus* [*Mi Bono Seguro*].

b. *Change of the payment procedure:* the payment is carried out in a form of a direct transfer to the savings account of each beneficiary.

c. *Change of the authority in charge:* in January 25, 2012, the Ministry of Social Development was established and replaced the function of *Social Cohesion Committee*.

d. *Change in the condition to get the bonus for education:* daily school attendance of children in the ages of 6 to 15 years (minimum 90% of monthly attendance).

e. *Reduction of CCT program coverage:* a cut of approximately 114,776 benefited families was made, keeping only 757,765 families in the program.

2.2. Conditional Cash Transfer Program as a Social Policy in Guatemala

Over the decades, scholars and decision makers have planned, launched and implemented diverse policies and programmes to fight against poverty. Some of those policies and programmes have been successful, and because of this, they have been replicated in different countries. This is the case of CCT programs, where the established theories (Cabrera, Delgado & Guzmán, 2009; Valencia Lomelí 2008) advocate that using CCT as a social policy will facilitate achievement of a better distribution of income within a given country, and ultimately contribute to the reduction of poverty rate. However, in implementing a well-designed and structured CCT program, the size of cash transfer, must be fulfilled.

In this paper, the performance of the CCT program in Guatemala is reviewed, along with a brief investigation on the success story of the CCT program in Mexico. It is hypothesized that the amount of CCT has a statistically significant impact on reducing

poverty and extreme poverty. The following eight literature review attempt to demonstrate and support this hypothesis.

First of all, it is important to know whether a CCT program could be implemented in the Guatemalan context and what could be its possible outcomes. In this regard, Cabrera, Delgado & Guzmán (2009) investigated what type of social policy can reduce the impact of economic shocks in Guatemala. They found that the most suitable policy to reduce the effects of an economic crisis is the conditional cash transfers. However, their CCT program is different in one element compared to the like program in Guatemala. The authors described that to reduce the vulnerability to economic shocks, the amount of CCT should be determined in terms of per child, instead of per family as the current program is doing. As the authors argued, the amount of CCT should be US$ 25 per child, which would result in poverty reduction by 3.2% (Cabrera, Delgado & Guzmán, 2009). They also highlighted that the impact on extreme poverty reduction is higher because extremely poor households have more children, and thus those households will get higher benefits from this policy.

Understanding that a CCT program is suitable for the Guatemalan context, we should look into what neighbor countries in the region have achieved through this social program. In this regard, Fiszbein et al. have conducted impact evaluations on the past CCT programs in Latin America, and reported positive outcomes. One of these programs is *Prospera*, the Mexican CCT program, where Fiszbein et al. (2009) measured the impact on household consumption. The research found the major elements that are closely linked to the impact on consumption poverty: the size of the cash transfer and the targeted poor households that receive the benefits. An increase in expenditures is a consequence of having a generous cash transfer. The research showed that a boost in cash transfers raised both quantity and quality of food items that households buy, such as meat, fruits, milk and eggs. Moreover, in the long term, the effects on consumption have translated into impacts on poverty reduction,

specifically on investment in productive activities such as microenterprises and agriculture (Fiszbein et al., 2009).

The results in this study supported the hypothesis that the size of cash transfer is a fundamental aspect to reduce extreme poverty and poverty. This is because the increased cash transfers not only support household consumption, but also support investment in productive activities that will make a sustainable source of income and create a stable economic atmosphere in each benefited household.

Furthermore, Valencia Lomelí (2008) concluded that the effects of the CCT program in Mexico tackle the intensity of poverty. This evidence suggests that in the short term, the CCT could reduce extreme poverty and move people from abject poverty to right beneath poverty line. After this change, in the long run, the program could easily move on to the next step: lifting people above the poverty line. According to this study, the Mexican CCT program has made a significant contribution to poverty reduction since 2002, reporting reduction rates of 3.6% in 2002, 3.6% in 2004 and 5.1% in 2005 (Valencia Lomelí, 2008). These findings also support the hypothesis examined in this paper the impact that CCT programs have in reducing extreme poverty and poverty is tangible. The said effect in reducing the gap between people living in extreme poverty and those who are living in poverty provides good policy implications to policy makers, especially in terms of how to design new social policies.

Following this line of ideas, a recent study outlined by the World Bank (2014) defines the Mexican CCT program as an optimal model for the world. Several reasons support the recognition granted by the World Bank, and the most relevant ones are explained as follows:

- The Mexican CCT program was the first CCT program with nationwide coverage, which has benefited approximately six millions of families during 17 years of its operations.

- Due its long history which began in 1997, it is the most studied and assessed social program worldwide by national, international, public and private institutions.

- The program started focusing on boosting access to primary education, health and nutrition for children from 0 to 15 years old. However, along the progress, it has undergone numerous reforms. Now, the program includes access to higher education (college), and provides orientation of how to enter the labor market and get a formal job. On the top of that, the program is also facilitating access to financial services like microcredits which can lead to the establishment of small and medium enterprises.

- The CCT program helped to reduce one third of income poverty in rural areas.

- One of the strengths of the program is providing cash directly to families; in turn, the amount of cash transferred alleviates the restriction on consumption of certain food, which accelerates the efforts in breaking the intergenerational cycle of poverty.

- The program has a strongly committed evaluation agenda which allows to improve the program design over time.

- The Mexican CCT program has continuously exchanging experiences with other countries that are also implementing such kind of social policy. This practice keeps the momentum of improving the performance of the Mexican program and continues to consolidate its success.

After understanding better the successful outcomes of the CCT program in Mexico and the benefits of implementing such kind of social policy, we should investigate whether the CCT program has introduced a significant improvement in life conditions of the Guatemalan beneficiaries. In this regard, Benavides (2013) conducted a research to answer

the aforementioned inquiry. He found that there was a partial improvement in relation to disposable income in households, which leads to reduction in income inequality at the national and sub-national levels. He also presented that the program also introduced dynamism within the households, as the households usually were able to save around 10% of the amount received bimonthly (Benavides 2013). The author also pointed out the advantage of having an incentive depending on the number of children in each household; this to increase the funds as children reach higher levels of education.

In addition to what have been reviewed so far, an impact evaluation was conducted by Duarte Monroy (2011) in the department of Chiquimula. This department was chosen due the similarities of its municipalities to its national context. The main findings of the study focused on the size of cash transferred. The authors describe that, the current amount of CCT does not cover the basic needs that are required to alleviate families' extreme poverty, and which makes harder to break the intergenerational cycle of poverty. As a result, some households choose to register only one child as a beneficiary of the program, keeping the others at home to help and support the family; this creates different outcomes on household members. Duarte Monroy (2011), similar to Benavides (2013), considers the necessity of reviewing the amount of CCT, with a consideration that every year children move up to a higher grade at school, raising school expenses. The conclusions of this study support the hypothesis of this paper. The author pointed out that with the little amount of CCT, the target outcomes cannot achieved. That is why it is important to identify an appropriate CCT amount.

Sarah Gammage (2011) explained that the CCT program in Guatemala can reduce income poverty. This finding is similar to what Valencia Lomelí (2008) pointed out regarding the Mexican case. Gammage focused her research on income poverty, which means that in the short term, the CCT increases the income of target households until a

certain level. While in the long term, it will promote investment in human capital through the children of the benefited households. Nevertheless, this is possible only if the amount of CCT is big enough to move the target households above the poverty line. That is why within the design of the CCT program, the amount of cash transferred is a fundamental element to be consider.

A qualitative impact evaluation on the CCT program in Guatemala was conducted by Lavinas & Székely (2011). According with the authors, the Economic Commission for Latin America and the Caribbean -ECLAC- indicated that in a recent simulation in countries like Guatemala, well-designed and targeted welfare programs, can reduce poverty by 25%. Following this insight, the researchers reviewed the design of the CCT program, focusing on the amount of CCT. Lavinas & Székely (2011) found that an average benefited family has six members, which means that the amount of CCT should be divided among three kids. This would only amount to US$ 12.91 monthly per kid to cover education, health and nutrition expenses of each kid. However, as stated by the National Institute of Statistics of Guatemala[7] (2015), a kid needs on average US$ 47 to cover the basic needs per month.

Lavinas & Székely (2011) linked the previous conclusion with the inverse correlation between income and household members in the Guatemalan context. In other words, the higher the number of family members, the lower the value of the cash transfer per capita. To solve that issue, they recommend to design a criteria for updating the amount of CCT considering different amounts based on different family structures and gender of household members. This recommendation also boosts the gender equality, providing more incentives to girls, so that they can complete higher levels of education.

In conclusion, it can be assumed from each research reviewed, that the amount of CCT plays a fundamental role in reducing extreme poverty and poverty. The mainstream is

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[7] Instituto Nacional de Estadística -INE- in Spanish

that the amount of CCT should cover the basic needs that are required to alleviate poverty in benefited families (Benavides, 2013; Duarte Monroy, 2011; Fiszbein et al., 2009; Gammage, 2011; Lavinas & Székely, 2011). The amount of CCT should keep its subsidy features, which does not necessarily result in a disincentive of adult labor. But the amount should fit into the actual context to maximize its impact; otherwise, the cash transferred will be a sporadic source of income.

It is important to highlight that more studies should be done in this regard. It is critical to understand what other factors are linked with the amount of cash transferred that could improve the performance of social policies. Finding those factors, the CCT program could be redesigned and implemented to obtain better results.

Chapter 3

Empirical Analysis

In the Latin American region, to determine the parameters and framework of a CCT program, different methodologies were used. Among those methodologies, however only the *Proxy Means Test (PMT)* produced the best outcomes, especially with regard to targeting mechanisms (Baker & Grosh, 1994). In this way, using the PMT can significantly reduce the undercoverage and the leakage rates of the social policy to be implemented.

Another advantage of using the PMT is having the facility to measure household welfare in developing countries. Using household survey data, the PMT defines the parameters and the cut-off point to set the range in which social policies can be deployed and to determine its beneficiaries.

Following this line of ideas, this research will study carefully and in detail what is needed to carry out a PMT, will set up the cut-off point, and will recommend the appropriate amount of CCT that the current CCT program in Guatemala needs to achieve its targets.

3.1. Theoretical Model

After defining which social policy will be implemented, policy makers should define who will be its beneficiaries. The targeting process is a critical point in any social program, which requires a detailed definition of the target group. When the target group is determined, a method must be established to identify households and individuals that will be in the target group. However, in practice, this targeting process integrates two factors, (1) the provision of assistance to people who need the program most, and (2) the consideration of political,

technical and financial difficulties in implementing the assistance in the best way possible (Grosh & Baker, 1995).

In theory, the targeting process provides to the program the tool for categorizing in an accurate way who is eligible and who is ineligible to be included in the program. Those categories will be defined in accordance with the level of welfare of the target group, or the income level of the possible recipients of the assistance of the program. Nevertheless, in practice, conducting a means test based on the income level often faces some difficulties. Usually, candidates of the program try to minimize their level of income to be eligible for program benefits. The complexities are bigger in developing countries where reliable records of income level only cover a small part of the population (Grosh & Baker, 1995). For instance, social security records only cover people with stable jobs, and in some developing countries, informal workers cover the bigger portion of the population. The government payrolls cover some government officials, but all depend on the level of access to disclosure of information that the government allows. Also, income tax records are widely used in industrialized economies to measure the income level of their inhabitants; however, in less developed countries, those records only cover businessman or people with a stable jobs.

According to Grosh and Baker (1995), developing countries often face difficulty in using income as a way to measure welfare in that such measurement does not consider occupied housing, durable goods and home-grown crops. In agricultural economies agricultural workers are occasionally employed and they are mostly self-employed; therefore, they do not have a stable job with a regular salary paid in cash, which creates a distortion in their real income level. Due to these difficulties, the *PMT* uses household and individual characteristics as a proxy for a means test, avoiding any issue related to reported income level.

The sources of data that *PMT* uses to identify the welfare level of the target groups are national surveys of living conditions. The *PMT* uses this kind of survey data due its

comprehensiveness. The surveys collect multi-sectoral data with wide-ranging categories on income, consumption, durable goods, savings, employment and unemployment, demographic characteristics, health, education, nutrition, housing characteristics, and migration. Although the surveys vary among countries, the surveys are usually similar enough to allow governments to use the *PMT* as a methodology to implement any kind of social policy that needs to establish a target group of beneficiaries (Grosh & Baker, 1995).

Despite the comprehensiveness of data collected via surveys, it is necessary to select the information and the corresponding values that best correlate with welfare. According to Grosh & Baker (1995), to do so, it is necessary select of specific variables that will predict welfare in the best way. Choosing the variables that are more correlated with welfare will provide accuracy in such prediction. Hence, the variables usually are categorized into four main categories: (i) location, (ii) housing characteristics, (iii) durable goods, and (iv) demographic characteristics.

During the selection of variables each selected variable should be easily verifiable, since social workers are the ones in charge of visiting the needed areas and determining if the people living there could be part of the program. Having the aforementioned categories will also facilitate the field work. For instance, *location* is the most easily verifiable variable, as rural and urban areas are defined by the local authorities, which eliminates the necessity to check this variable. *Housing characteristics* are easily verified by social workers when they visit each house considered to be part of the program. The *durable goods* category could face the highest level of difficulty in verification, due to flexibility in removing the goods from the house. To overcome this challenge, usually visits conducted by social workers should be unexpected; in such case, people will have less time to hide goods, and, if any, will only have a minimum amount of time to hide small goods that can easily be moved from one point to another. *Demographic characteristics,* such as age, gender, marital status, level of education,

ethnic group, employment status, and number of members could be too complicated to be verified, and are often reliant on the applicants reporting (Grosh & Baker, 1995).

After considering the previous details, the most technical work is carried out. *Ordinary Least Squares (OLS)* regressions are conducted to minimize the squared errors between what was reported as "true" and the predicted levels of welfare. The *OLS* method using continuous variables is simple, fast, familiar and efficient. By using the outputs of *OLS,* the predicted levels of welfare can be fixed; in this way the applicant households can determine whether they can be eligible or ineligible to get the program assistance. However, according to Grosh and Baker (1995), the selection of the eligibility cut-off point is basically an arbitrary decision, where policy makers usually base their decisions on the absolute poverty line of their country.

Finally, when all the technical work is done, a field work is conducted. In practice, a social worker visits the household to check whether the visible living standards match with the target population of the program, and fills out a form that contains a systematic weighting of certain factors that better express the level of welfare of each household (Grosh 1992). The weighting parameters used are the values obtained through the *OLS* analysis and the eligibility cut-off point fixed before. The social worker collects the information on location, household characteristics, durable goods and demographic characteristics of each household visited, giving scores to each answer according to the scale of parameters. This procedure will determine whether the household visited is eligible to participate in the social program as a beneficiary. Chile was the first country that used this targeting methodology in 1980. Since then, this system has been used to determine the eligibility parameters for different social programs (Grosh & Baker, 1995).

3.2. Empirical Model

After considering all the advantages that the *PMT* model provides in predicting welfare in the targeting process of any social policy, the present study adopts the aforementioned model to verify whether a reform on the amount of CCT in the Guatemalan program is necessary.

To construct this model, it is necessary to choose carefully the variables that will be integrated into the multiple linear regression equation. In this regard, Handa (2001) mentions that there are some variables that are easily found in the general population, but usually are not predominant among the poorer portion of the population. For instance, automobiles are found in the highest percentiles of the population. Meanwhile, some durables like television, dvd player, radios, refrigerator, microwave, among others, are found in only one percent of the population, and durables such as electric stoves, washing machines and dryers are found only in the higher 10 percentiles of the population. Nevertheless, Grosh and Baker (1995) conclude that more information provides an overall scene of the national context and helps to refine the targeting process.

Following this line of ideas, during the selection of the variables to predict welfare two elements should be considered. Firstly, the chosen variables should have a strong relationship with welfare, which will increase the accuracy in prediction. Secondly, the variables should be easily verifiable as was explained before, for instance, by visits of social workers or administrative officials to the households (Persaud, 2005). Having in mind the previous elements, the variables in the present study were categorized as follows:

- **Location:** referring to (i) urban or (ii) rural area, location is the easiest variable to be verified, since social workers or administrative officials usually check this feature in a map.

- **Household characteristics:** these include: (i) walls of concrete or cement, (ii) walls of wood or mud, (iii) roof of concrete, (iv) roof of other materials, (v)

ceramic floor, (vi) floor of other materials, (vii) drinking water, (viii) water meter, (ix) residential power system, (x) shared toilet with sewer system or septic tank, (xi) private toilet with sewer system or septic tank, (xii) shared toilet with latrine or pit, (xiii) private toilet with latrine, (xiv) garbage collection service, and (xv) household with one room only. These variables can be verified relatively easily too.

- **Durable goods:** these include: (i) cell phone, (ii) internet, and (iii) television. In this category the variables are also easily verified. It is important to remark that these variables tend to have a high power in predicting welfare, and for that reason, including them will avoid mis-targeting.

- **Demographic characteristics:** these include (i) age of head of household, (ii) woman head of household, (iii) head of household indigenous, (iv) head of household with superior complete, (v) head of household with superior incomplete, (vi) head of household with primary complete, (vii) head of household with secondary incomplete, (viii) head of household with secondary complete. These variables are not difficult to verified, and usually households are less likely to misrepresent such information.

After the selection of variables, the multiple linear regression equation can be established. According to Persaud (2005), to derive the proxy means test, the equation takes the following form, where:

$$Y_i = B_0 + B_i X_i + e_i \qquad \text{where} \qquad e_i \approx N(0_1 \ \sigma^2)$$

Y_i is the log annual household consumption per person (log per capita consumption expenditure is found to work well in regressions)

X_i is a set of variables describing the household, demographic and durable characteristics, and the location variable

B$_i$ are parameters to be estimated

e$_i$ is the random error term assumed to be normally distributed with mean (u) = 0 and constant variance (σ 2).

As was explained before, consumption expenditure is considered a more accurate measure of welfare than income. Firstly, consumption expenditure tends to be constant over time as compared to income, and it is more likely to reflect the real economic status of households. Secondly, usually consumption is measured with more accuracy than income in a household survey (Persaud, 2005). Hence, consumption expenditure is framed as a dependent variable in the multiple linear regression equation.

To predict levels of welfare, the multiple linear regression equation is estimated using *Ordinary Least Squares (OLS)* method. As was explained in the *Theoretical Model* part of the present study, this method is convenient and useful especially when a large number of predictor values are used. In addition, with *OLS,* the values derived from the formula are easily interpreted, having a clear economic meaning and making the indicators developed easily be understood (Persaud, 2005).

With the estimated values of the explanatory variables used in the model, a scoring formula is obtained. This scoring formula, is used to determine whether a household will be a beneficiary of the CCT program in Guatemala. To facilitate identification of the possible beneficiaries, a cut-off point is fixed in accordance with the values obtained through the *OLS* method.

Finally, in order to run the multiple linear regression equation and predict the new amount of CCT for the program in Guatemala, the data used in the empirical analysis was the *National Survey of Living Conditions, -ENCOVI[8] 2011- [Encuesta Nacional de Condiciones de Vida, -ENCOVI 2011-].* This survey has been conducted by the *National Institute of*

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[8] ENCOVI is the acronym of the National Survey of Living Conditions in Spanish

Statistics of Guatemala every five years since 2000, and its main purpose is to shows the living conditions of the population and determine the levels of poverty in Guatemala. *ENCOVI 2011* was a nationally representative survey that included urban and rural households. The survey sampled 13,480 households from the 22 departments of the country, interviewing a total of 66,524 people. Furthermore, *ENCOVI 2011* gathered information on a wide variety of topics, including household and individual expenditures, housing characteristics, food consumption, nutrition and health status, education, employment, credit and savings, remittances, farming, among others.

After collecting all these information, *ENCOVI 2011* provided data that helps to characterize the extremely poor, poor and non-poor inhabitants of the country at national, regional and departmental levels. The databases were obtained from the website of the *National Institute of Statistics of Guatemala*, which contains information on housing characteristics, demographic characteristics, and individual and household consumption expenditures.

3.3. Empirical Results

Prior to testing the multiple linear regression equation to derive the proxy means test and predicting the level of welfare of Guatemalans, the data provided by the *National Survey of Living Conditions 2011* was arranged in accordance with the variables to be used in such equation.

Table 1 presents the results of the final estimation through the regression model using LOG annual household consumption per person as the dependent variable. From the total number of twenty six independent variables for urban areas: seventeen are significant at the 1 percent level, five are significant at the 5 percent level, one is significant at the 10 percent level, and three are not significant. On the other hand, from the total number of twenty six independent variables for rural areas: fifteen are significant at the 1 percent level, three are

significant at the 10 percent level, and eight are not significant. The R-squared is 0.3555 for urban areas and 0.242 for rural areas. A comparison of the multiple linear regression models used for proxy means testing in other countries, the values obtained in this study indicates that the model used performed quite well in predicting household welfare. Grosh and Baker (1995) achieved an R-squared of 0.1 to 0.4 in the simulation conducted in the urban and rural areas of Jamaica, Bolivia and Peru. In the current study, the R-squared for urban area is 0.355 and for rural area is 0.242, which is in line with the existing empirical studies.

Table 1

Estimation of the Total Household Consumption in Guatemala - Proxy Means Test

Category	Variable	Urban	Rural
Housing Characteristics	Walls of concrete, cement	0.0846*** (0.0161)	0.130*** (0.0119)
	Walls of Wood, mud	-0.0141*** (0.00266)	-0.0217*** (0.00197)
	Roof of concrete	0.138*** (0.0159)	0.130*** (0.0244)
	Roof of other materials	-0.0345*** (0.00398)	-0.0332*** (0.00612)
	Ceramic floor	0.176*** (0.0202)	0.194*** (0.0257)
	Floor of other materials	-0.0351*** (0.00406)	-0.0378*** (0.00516)
	Drinking water	-0.0534** (0.0259)	-0.0514*** (0.0133)
	Water meter	0.0853*** (0.0173)	0.0737*** (0.0197)
	Residential power system	0.0985*** (0.0274)	0.151*** (0.0147)
	Shared toilet with sewer system or septic tank	-0.0107 (0.0332)	0.0242 (0.0375)
	Private toilet with sewer system or septic tank	0.0621** (0.0274)	0.150*** (0.0205)
	Shared toilet with latrine or pit	0.00171 (0.0476)	0.0193 (0.0252)
	Private toilet with latrine or pit	-0.0636** (0.0315)	-0.0277* (0.0154)
	Garbage collection system	0.147***(0.0173)	0.107*** (0.0243)
	Household with one room only	-0.0681*** (0.0177)	-0.0603*** (0.0134)
Durable Goods	Cell phone	0.105*** (0.0344)	0.0290 (0.0426)
	Internet	0.460*** (0.0248)	0.591*** (0.0526)
	Television	0.160*** (0.0164)	0.179*** (0.0169)
Demographic characteristics	Age of head of household	0.000840* (0.000462)	0.000694* (0.000382)
	Woman head of household	0.0164 (0.0175)	0.0224 (0.0151)
	Head of household indigenous	-0.146*** (0.0167)	-0.108*** (0.0129)
	Head of household with superior complete	0.228*** (0.0815)	-0.0692 (0.158)
	Head of household with	0.219** (0.102)	-0.145 (0.166)

	superior incomplete		
	Head of household with secondary complete	0.178*** (0.0433)	0.0557 (0.0670)
	Head of household with secondary incomplete	0.125** (0.0601)	-0.153* (0.0875)
	Head of household with primary complete	0.123*** (0.0265)	0.0456 (0.0328)
Constant		8.976*** (0.0415)	8.818*** (0.0264)
Number of Observations		5,532	7,838
R-squared		0.355	0.242

Notes: Dependent Variable is LOG annual household consumption per person
* Significant at 10%; ** significant at 5%; and *** significant at 1%
Standard errors in parenthesis - Total number of observations: 13,480 - Set of 26 proxies
Based on data from *National Survey of Living Conditions, ENCOVI 2011*

Considering in detail each category of indicators that are integrated into the final *PMT* model, an interpretation of their influence on the total household consumption in Guatemala can be conducted. Regarding **Housing Characteristics**, the physical structure of a house is a good indicator of household consumption and, as a result, the household welfare. The data shows that using more resistant and more expensive materials, like concrete or cement walls, concrete roof, and ceramic floor, to build the house has a strong positive effect on household consumption, which is significant at 1 percent level.

Moreover, residential drinking water [9], residential power system and garbage collection system also presents a strong positive effect on household consumption, which is significant at 1 percent level. These variables are important because for this services a monthly bill is sent to those households and thus become a good indicator of household welfare. It is also important to highlight that having electricity in a household reflects that the family members are owners of electrical appliances.

In contrast, some indicators have a strong negative effect on household consumption, and thus on the household welfare, which are significant at 1 percent level. Poorer households tend to have really bad physical house conditions, which means the use of

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[9] The name of the variable in the PMT model of residential drinking water is *water meter.*

materials like wood or mud walls, roof of materials that exclude concrete[10], floor of materials that exclude ceramic floor[11] to build the house is useless in a short period of time. Also having drinking water without a residential service in rural areas[12], diminish the households' standards of living. The previous indicators provide an overall picture of the bad household welfare status in the neediest households which are the target population of social programs such as CCT. Similarly, upon the interpretation of the given indicators, drinking water without a residential service in urban areas, is found to generate a highly negative effect, being significant at 5 percent level.

On the top of the above finding, the toilet service, particularly when the toilet is private and with a sewer system or septic tank in rural areas, has a strong positive effect on household consumption, being significant at 1 percent level. In some rural areas, a private toilet with a sewer system or septic tank could be considered as a luxury that not everyone can afford, and thus, this variable can illustrates the level of household welfare. Furthermore, this positive effect is still high, being significant at 5 percent level, with regard to urban area. In urban areas, having a private toilet with a sewer system or septic tank is more common. In contrast, when the private toilet is connected to a latrine or pit, the effect of the toilet service on household consumption is still high but negative, is significant at 5 percent level in urban areas and significant at 10 percent level in rural areas. These indicators also explain household welfare, because having a toilet connected to a latrine or pit does not provide the same level of sanitation that is needed when you use a toilet. In particular, such toilets can lead to the exposure to more probabilities of getting sick or to spreading more easily infectious diseases among family members.

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[10] The name of the variable in the PMT model of roof of materials that exclude concrete is *roof of other materials*.

[11] The name of the variable in the PMT model of floor of other materials that exclude ceramic floor is *floor of other materials*.

[12] The name of the variable in the PMT model of drinking water without residential service is *drinking water*.

Lastly, the house size has a strong negative effect on household consumption. The variable used in this study was *household with one room only,* and the results are significant at 1 percent level. This demonstrates that, the level of household welfare is diminished drastically, when the house has one room only. According to *ENCOVI 2011,* the average number of family members, for urban areas 4.49 member, for rural areas 5.37 members and at nationwide 4.91 members. The importance to have more than one room in a house covers mental, health, educational, emotional and privacy aspects. The previous aspects are important in developing a safe environment with all family members, and the lack of space can impact negatively on children's behavior.

In terms of the **Durable Goods** category, as expected, the selected variables both strongly and positively affect household consumption and household welfare. The variables *television* and *internet* are significant at 1 percent level. These variables imply many facts that help to describe the level of household welfare in a more comprehensive way. Both television and internet require electricity, which means the household keeps a certain level of consumption to pay for the service every month. Having the internet service will produce a similar effect as the monthly bill. Moreover, the variable *cell phone,* which is significant at 1 percent level in urban areas, also implies a monthly bill or a constant top-up to use the service, leading to a frequent consumption by the household of the cell phone service and corresponding to the residential power system.

The last category of variables is **Demographic Characteristics**. The indicator, *head of household* reports a positive effect on household consumption, which is significant at 10 percent level. This means that the relationship between the head of the household and the household consumption is still high. In this regard, the age factor can be explained in two ways: firstly, if the head of household is young, he or she is more likely to spend more money on housing and equipment, due to the household founding period in which the family is living;

and secondly, if the head of household is old, he or she is more likely to spend more money on recreation and leisure with the family members. In any case, the head of household factor is a good indicator of household welfare.

Furthermore, the variable, *head of household indigenous,* has a strong negative effect on household consumption, which is significant at 1 percent level. This is due to the high level of discrimination against indigenous people in Guatemala. These indigenous heads often receive the reduced opportunities of getting a well-paid job only because they are indigenous. Usually, indigenous people get the jobs with long working hours, low salary and bad working conditions. The previous elements indeed affect negatively the level of household welfare.

According to UNESCO (2015), education and poverty reduction have a strong relationship. Being poor reduces years of schooling and consequently leads to a marginalized life with lack of opportunities and bad living standards. In this regard, in this study, five education-related variables were included in the multiple linear regression model to verify whether they produce a positive or negative impact on household consumption.

In urban areas, in the case of head of household with superior education complete[13], head of household with secondary education complete[14], and head of household with primary education complete[15], education shows a strong, positive the relationship with household consumption, being significant at 1 percent level. This result means that the highest level of education obtained by the head of household will lead to a better level of welfare in the house. Similar results are found for the cases of head of household with superior education

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[13] The name of the variable in the PMT model of head of household with superior education complete is *head of household with superior complete.*
[14] The name of the variable in the PMT model of head of household with secondary education complete is *head of household with secondary complete.*
[15] The name of the variable in the PMT model of head of household with primary education complete is *head of household with primary complete.*

incomplete[16] and head of household with secondary education incomplete[17], indicating a high, positive relationship with 5 percent level of significance.

Nevertheless, the situation is different in rural areas. In the case of the variable, head of household with secondary education incomplete, the relationship between education and household consumption is still high but negative, with 10 percent level of significance. Usually, in rural areas, starting secondary studies implies a reduction in the number of hours for helping family farms, family crops or any other activities that supports the income of the family. Over time, realizing that the benefits of having a higher level of studies do not return creates, it becomes a diminishing return for the family, and which will negatively impact on household consumption, and thus on household welfare.

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[16] The name of the variable in the PMT model of head of household with superior education incomplete is *head of household with superior incomplete.*
[17] The name of the variable in the PMT model of head of household with secondary education incomplete is *head of household with secondary incomplete.*

Chapter 4

Findings

4.1. Selection of cut-off points

After obtaining the *PMT* scores of the main variables that have a positive or negative effect on household consumption and, as a result, on household welfare, this study determines a cut-off point that identifies who will be the beneficiaries and who are going to be excluded from the CCT program in Guatemala.

In this regard, Narayan and Yoshida (n.d.) concluded that two main factors should be taken into account when cut-off points are decided. Firstly, it is important to define who will be the target group of the social policy to be implemented. This group is usually defined in accordance with the poverty line used in the country. On top of that, however, the authors add that the definition of the target group should also depends on "policy priorities, political realities and budgetary constraints" (Narayan and Yoshida, n.d.). Secondly, the eligible cut-off points should be defined on the basis of the scores obtained through the *PMT* model. In this regard, two elements need to be considered for establishing the optimal cut-off points,

under-coverage and leakage rates. On the one hand, if under-coverage is a main issue, raising the cut-off points will increase the coverage in a given target group, but leakage will be higher. On the other hand, if the government is facing a budget constraint, the benefits that are going to be provided to the target group are going to be reduced along with the high leakage. Given this, Narayan and Yoshida (n.d.) highlight that the selection of a cut-off point is a crucial decision that obeys "policy priorities, and political and budgetary constraints."

Considering the previous insights, this study examines two key factors that are needed to establish the optimal cut-off points in Guatemala. The first one is the poverty level in Guatemala. According to the most recent data from the *National Institute of Statistics*, given in *Table 2,* a significant achievement has been reached concerning the reduction of extreme poverty rate from 2006 to 2011; this reduction is about 1.87 percent. However, an increment in the percentage of poor population in the aforementioned years has been considerable, reaching 4.58 percent.

Table 2

Poverty in Guatemala

Year	Extreme Poor (%)	Poor (%)	Total Poor (%)	Non-poor (%)
2000	15.70	40.30	56.00	44.00
2006	15.20	35.80	51.00	49.00
2011	13.33	40.38	53.71	46.29

Note: Percentages of population
Source: National Institute of Statistics of Guatemala

Furthermore, the percentage of non-poor inhabitants has decreased in a rate of 2.71 percent. All these factors consequently led to an increase of the total percentage of poor people in the country, accounting for a total of 53.71 percent of the population in Guatemala.

Guatemala faces a serious living situation where more than half of its population is living in poverty. This critical issue supports the conclusion of the present study that reform and adjustment of the amount of CCT is indeed necessary. As the national context changes

over time, and the corresponding reforms need to be implemented for the program which, unfortunately, has not achieved its target goals.

The second element to be considered is the cut-off points that the Ministry of Social Development is currently using to determine the eligibility of households to participate in the CCT program. According to the information provided by *Byron Pac, Director of Planning and Programing,* in the aforementioned Ministry, the CCT program is using the following cut-off points:

- **Urban areas:** equal to or less than 8.89381

- **Rural areas:** equal to or less than 8.89392

"Equal or less than" indicates that a family applying to become a beneficiary of the program should have a total score equal to or less than the cut-off point previously established. The database used by the Ministry to select the cut-off points, however, is the *National Survey of Living Conditions 2006 (ENCOVI 2006)* which might produce different outcomes than expected. Several externalities have changed Guatemala over time, and the *National Survey of Living Conditions 2011 (ENCOVI 2011)* can provide a better description of the current situation regarding household consumption and household welfare. This findings support the conclusion that reform in the eligibility criteria of the CCT program is necessary.

Following this line of ideas, using the *PMT* scores obtained in the present study as parameters, new cut-off points can be established, with the new eligibility criteria for the CCT program in Guatemala. The optimal cut-off points were selected on the basis of the "true" household consumption expenditures reported in the data [-*ENCOVI 2011*-] used in the *PMT* model. In line with the information gathered and obtained, the optimal cut-off points were fixed at the 50th percentile of the household welfare distribution, out of the total population used in *ENCOVI 2011*. These cut-off points are the followings:

- **Urban areas:** equal to or less than 9.0697

- **Rural areas:** equal to or less than 9.0216

With that, it is important to emphasize that "the selection of the cutoff point is essentially a policy, and not a technical decision" (Narayan and Yoshida, n.d.).

In addition, it is necessary to test whether the selected cut-off points can reflect the values obtained from the multiple linear regression model. To do so, two hypothetical household cases are used. One of these households is categorized as needy, and the other one non-needy. This test was conducted on urban and rural areas, and the results are presented in *Table 3* and *Table 4* respectively. The main purpose of the test is to assess the level of accuracy of the cut-off point in predicting household consumption of needy and non-needy households. Based on the results, the coefficients obtained from the multiple linear regression model are multiplied by 1 when the condition of the variable is applicable, and multiplied by 0 when the

Table 3

Assesing the Level of Accuracy of the Cut-off Point for Urban Areas in Guatemala

Category	Variable	Non-needy household	Needy household
Housing Characteristics	Walls of concrete, cement	0.0846	0
	Walls of Wood, mud	0	-0.0141
	Roof of concrete	0.138	0
	Roof of other materials	0	-0.0345
	Ceramic floor	0.176	0
	Floor of other materials	0	-0.0351
	Drinking water	0	-0.0534
	Water meter	0.0853	0
	Residential power system	0.0985	0
	Shared toilet with sewer system or septic tank	0	0
	Private toilet with sewer system or septic tank	0.0621	0
	Shared toilet with latrine or pit	0	0.00171
	Private toilet with latrine or pit	0	0
	Garbage collection system	0.147	0
	Household with one	0	-0.0681

Category	Variable	Non-needy household	Needy household
Durable Goods	room only		
	Cell phone	0.105	0
	Internet	0.460	0
	Television	0.160	0
Demographic characteristics	Age of head of household	0.000840	0.000840
	Woman head of household	0	0.0164
	Head of household indigenous	0	-0.146
	Head of household with superior complete	0.228	0
	Head of household with superior incomplete	0	0
	Head of household with secondary complete	0	0
	Head of household with secondary incomplete	0	0
	Head of household with primary complete	0	0.123
Constant		8.976	8.976
Total score of the household		10.72134	8.76675
Cut-off point		9.0697	9.0697

Notes: The values used are the ones obtained in the Proxy Means Test (PMT)
Based on data from *National Survey of Living Conditions, ENCOVI 2011*

Table 4

Assesing the Level of Accuracy of the Cut-off Point for Rural Areas in Guatemala

Category	Variable	Non-needy household	Needy household
Housing Characteristics	Walls of concrete, cement	0.130	0
	Walls of Wood, mud	0	-0.0217
	Roof of concrete	0.130	0
	Roof of other materials	0	-0.0332
	Ceramic floor	0.194	0
	Floor of other materials	0	-0.0378
	Drinking water	0	-0.0514
	Water meter	0.0737	0
	Residential power system	0.151	0
	Shared toilet with sewer system or septic tank	0	0
	Private toilet with sewer system or septic tank	0.150	0
	Shared toilet with latrine or pit	0	0.0193
	Private toilet with latrine or pit	0	0
	Garbage collection system	0.107	0
	Household with one	0	-0.0603

	room only		
Durable Goods	Cell phone	0.0290	0
	Internet	0.591	0
	Television	0.179	0
Demographic characteristics	Age of head of household	0.000694	0.000694
	Woman head of household	0	0.0224
	Head of household indigenous	0	-0.108
	Head of household with superior complete	-0.0692	0
	Head of household with superior incomplete	0	0
	Head of household with secondary complete	0	0
	Head of household with secondary incomplete	0	0
	Head of household with primary complete	0	0.0456
Constant		8.818	8.818
Total score of the household		10.484194	8.593594
Cut-off point		9.0216	9. 0216

Notes: The values used are the ones obtained in the Proxy Means Test (PMT)
Based on data from *National Survey of Living Conditions, ENCOVI 2011*

condition of the variable is not applicable. After that, the value obtained as a constant in the multiple linear regression model is summed with the rest of the scores obtained by the household. The total scores of the two households are compared with the cut-off points, and as expected, non-needy households in urban and rural areas exceeded the cut-off point. In contrast, needy households in urban and rural areas were below the cut-off point, leaving a small margin between the total score of the households and the cut-off point. The test concludes that the selected cut-off points can reflect the socio-economic situation of Guatemalan households in an accurate way.

4.2. Justification of chosen cut-off points

Regarding the reform and adjustment of the amount of CCT, a set of basic indicators at national and international levels should be taken into account, as parameters to fix a new amount. In this section, as previously mentioned, the importance of fixing the amount of

CCT is highlighted as a political decision subject to budgetary constraints. Following this line of ideas, this study finds that the current amount of CCT in Guatemala is *Q300.00 (US\$ 38.75),* and further proposes that this selected amount should be divided into two elements, *Q150.00 (US\$ 19.37)* for education expenses and *Q150.00 (US\$ 19.37)* for health expenses. The total amount of CCT, selected in 2008 on the basis of different factors and indicators, represents 10 percent of the extreme poverty line, 18 percent of the minimum wage, and 16 percent of the price of the basic food basket in the year 2008. This total amount of CCT also indicates a number approximate to US\$ 1.25 per day which was introduced by the World Bank in 2008 as the extreme poverty line the exchange rate at the time was Q7.78 equal to US\$ 1.00, so US\$ 1.25 multiplied by 30 was equal to US\$ 37.50 or Q291.75.

However, since 2008, the Guatemalan context has changed over time, making adoption of dynamic policies necessary for addressing the current needs. On this subject, *Figure 4* illustrates how the poverty lines in Guatemala have changed significantly from 2006 to 2011. In particular, within the given period, the extreme poverty line has recorded an increase of Q1,174.00, and the poverty line Q1,708.90. These changes also support the conclusion that the corresponding reform of the amount of CCT is very much needed. In fact, the targets have been very marginally achieved due to the lack of policies that correspond to the national reality.
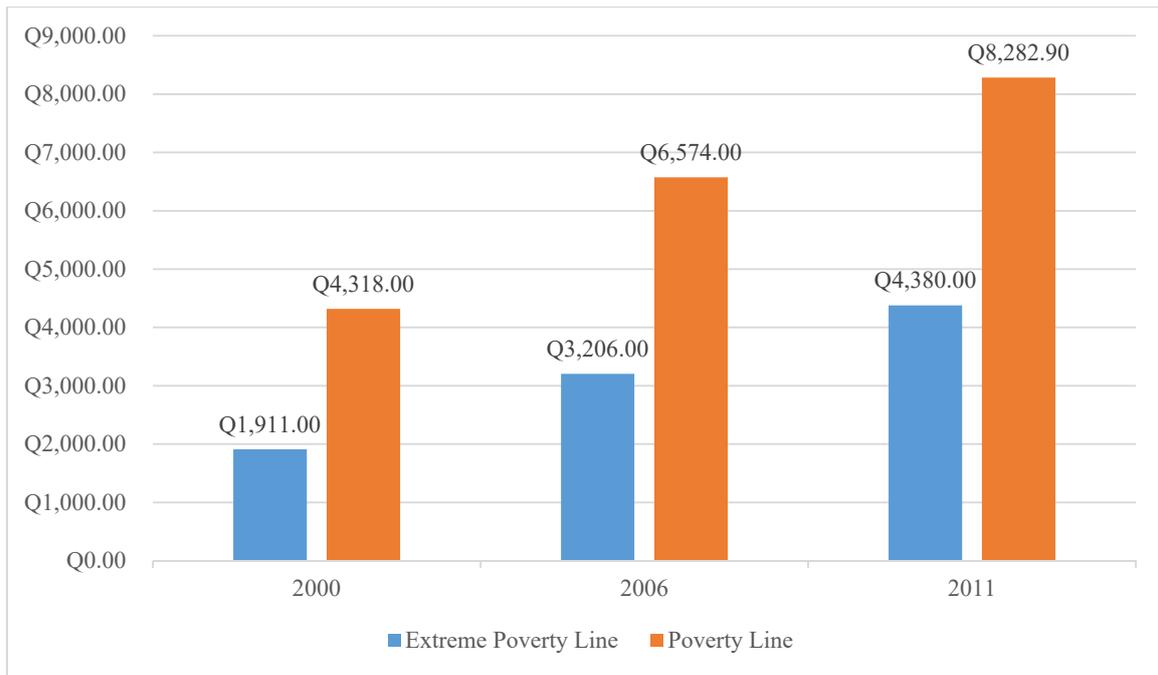
Figure 4. Poverty line in Guatemala
Note: Annual per capita value

Source: National Institute of Statistics of Guatemala

Similarly, the minimum wage and the price of the basic food basket have reported drastic changes over time. *Figure 5* demonstrates these changes, where the minimum wage from 2008 to 2015 has increased by 53.2 percent, and the prices of the basic food basket from 2008 to 2015 have increased by 64.2 percent. Even though the minimum wage has increased significantly the price of the basic food basket has increased even further requiring social policies like the CCT to cover this income gap of Q410.03 and provide a decent standard of life. This analysis, also supports the necessity of reforming the CCT program in Guatemala, especially the amount of cash transfer.

The last factor put under consideration for fixing the amount of CCT in 2008 was the international extreme poverty line introduced by the World Bank in the same year. In late September 2015, however, the World Bank updated the international extreme poverty line to be US$ 1.90 per day in terms of 2011 international prices. This update "incorporates new information on differences in the cost of living across countries (the PPP exchange rates) (World Bank, 2015).
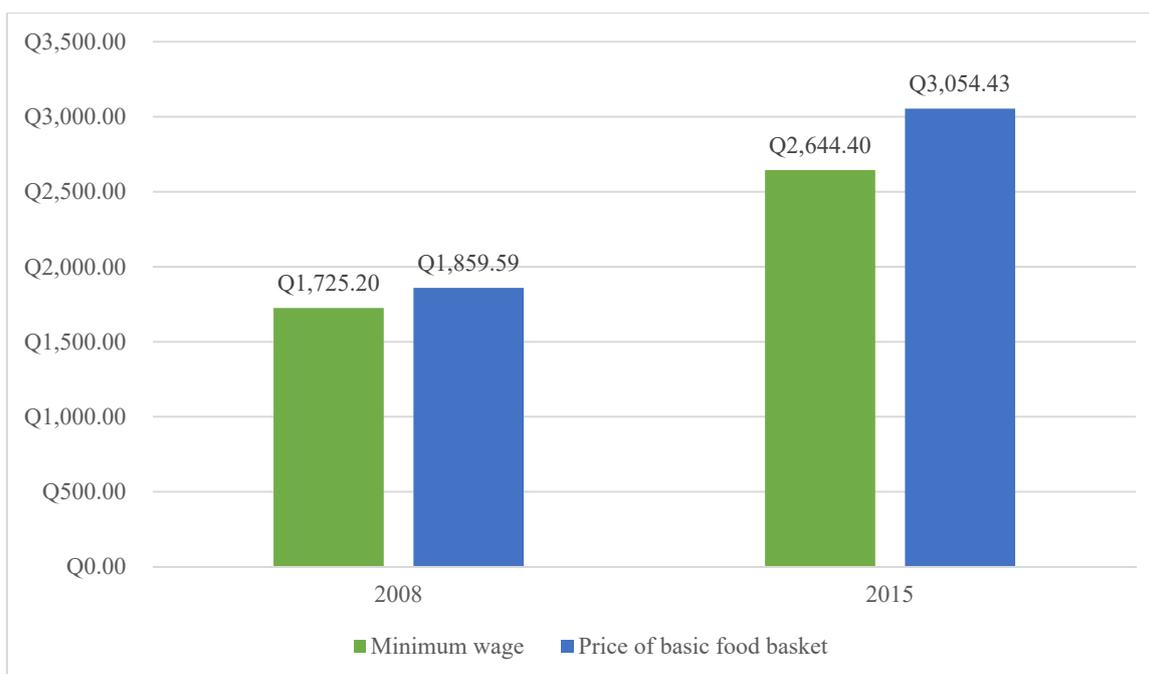
Figure 5. Minimum wage and price of basic food basket in Guatemala
Note: Values are per month

Source: National Institute of Statistics of Guatemala

The use of 2011 international prices by the World Bank as parameters matches with the year of the data used in this study, the *National Survey of Living Conditions (ENCOVI 2011).* Besides, it is only intuitive that if the World Bank as an international finance organization is updates its basic parameters, the CCT program in Guatemala should follow the line of logic to, update its amount of cash transfer.

4.3. Optimal amount of conditional cash transfer in Guatemala

Consequently, taking into account all the factors mentioned so far, this study draws a conclusion that the optimal amount of CCT is *Q450.00 (US$ 58.14),* divided into *Q225.00 (US$ 29.07)* for education expenses and *Q225.00 (US$ 29.07)* for health and nutrition expenses. This conclusion is based on the following arguments:

- The updated international extreme poverty line introduced by the World Bank is US$ 1.90 per day or US$ 57.00 per month. Using the current exchange rate in Guatemala, Q7.74 equal to US$ 1.00, the extreme poverty line becomes Q441.18 per month.

- The gap between the price of the basic food basket and the minimum wage in Guatemala is Q410.00.

- Following the same indicators as the government of Guatemala proposed in 2008, the new amount of CCT would represent: 17 percent of the minimum wage in 2015 (Q449.55), 14.5 percent of the price of the basic food basket in 2015 (Q442.89), and 10.2 percent of the extreme poverty line in 2011 (Q.446.76).

- The decision to round the amount of CCT to Q450.00 is for two main factors: firstly, using a round amount facilitates bank transactions; secondly, due to the dual purpose in the usage of the CCT (education and health-nutrition expenses), having a round amount to divide the cash accurately transferred to the beneficiaries is more practical.

In order to fix the new amount of CCT, it is also important to know whether the government of Guatemala can implement these change. The budget constraint could be an issue, but the government has the funds needed to do the reform on the amount of CCT. This is because the current program represents less than 0.4 percent of the gross domestic product (GDP) of Guatemala, and raising the amount of CCT to Q450.00 would represent around 0.6 percent of the GDP. Furthermore, according to investigations made by the Office of Guatemala's Public Prosecutor (La Hora, 2015) during the period of former president *Otto Pérez Molina* (January, 14th 2012 – September 3rd, 2015) 40 percent of the annual budget was used in corruption, and in each year of his term he and his close government officials, including the former vice-president *Roxana Baldetti,* took more than Q90 million (US$ 11,627,906.98) from the national treasury. This corruption scandal has shown the economic potential of Guatemala. In other words, the government has the funds to do this reform. What is missing is rather a political will from the decision makers.

Chapter 5

Policy Implications

5.1. Conditional Cash Transfers: The Mexican experience

The above discussions on the update of the eligibility cut-off points and the amount of CCT could lead to a policy implication. This policy implication involves methods and procedures that the government should follow to keep the aforementioned values constantly updated. On this subject, the Mexican CCT program has become, in accordance with the World Bank (2014), an outstanding model that countries must follow in the CCT field. Continuing with the same insights discussed in the literature review of this study, the analysis of the updating system, explained below, provides the recommendations needed on how to apply the same system to the Guatemalan program.

According to the Ministerial Agreement enacted on December 30th, 2014, by the Mexican Ministry of Social Development, the CCT program *PROSPERA (Program of Social Inclusion)* should update its amount of CCT every six months, according to budget availability and based on the accumulated variation on the *Line of Minimum Welfare* for rural and urban areas. This Line of Minimum Welfare is equivalent to the value per month of the basic food basket per person, and is published by the *National Council for Evaluation of Social Development Policy (CONEVAL)*[18]. To update the Line of Minimum Welfare, CONEVAL uses as a reference the *National Consumer Price Index (INPC)*[19] which is a macroeconomic indicator used to measure the changes of the prices of products and services in the Mexican economy by putting the prices observed in the previous month of the study as basis. The INPC is a monthly research conducted by the *National Institute of Statistics and Geography (INEGI)*[20].

After updating all the indicators needed in accordance with the Mexican law, the Ministry of Social Development, if the accumulated variation is positive, updates the amount of CCT and publishes it as an amendment on the Rules of Operation of PROSPERA in the Official Gazette of the Mexican government. However, when the accumulated variation is

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[18] *CONEVAL* is the acronym in Spanish of *Consejo Nacional de Evaluación de la Política de Desarrollo Social*
[19] *INPC* is the acronym in Spanish of *Índice Nacional de Precios al Consumidor*
[20] *INEGI* is the acronym in Spanish of *Instituto Nacional de Estadísitca y Geografía*

negative, the amount of CCT will remain the same as the one used in the previous six months. The previous procedure is better illustrated in *Figure 6*.
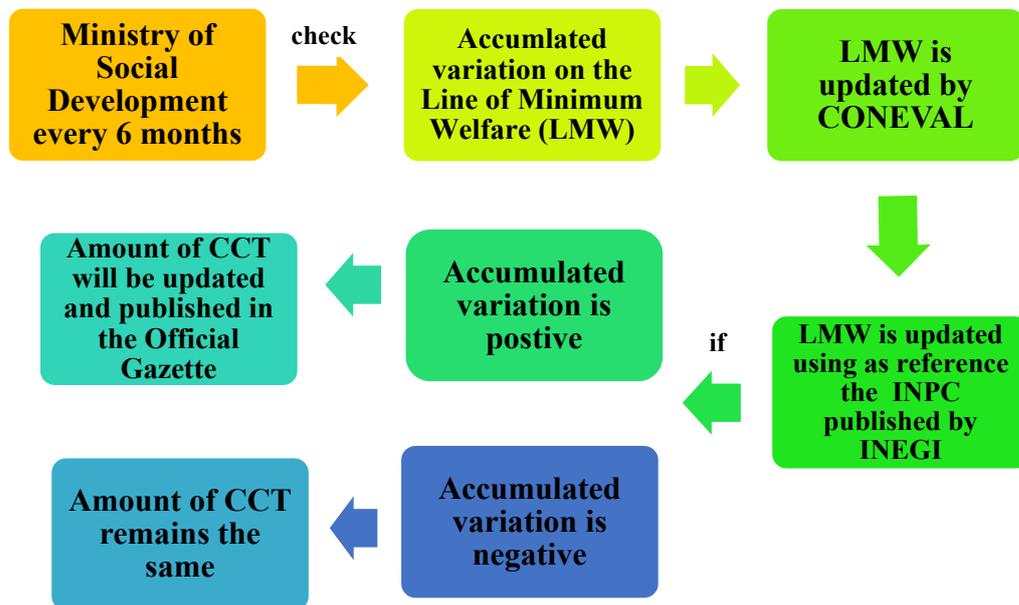
Figure 6. Update procedure of the amount of CCT in Mexico

The update procedure is simple. The Ministry of Social Development only needs to gather the information that other institutions collect and analyze for the Ministry. The main task of the Ministry is to check whether the accumulated variation is positive, and if so, publish it on the Official Gazette. Moreover, this update procedure does not require extra administrative expenses, since the National Council for Evaluation of Social Development Policy and the National Institute of Statistics and Geography are already in charge of keeping the Line of Minimum Welfare and the National Consumer Price Index updated.

Thereby, replicating the same procedure in Guatemala is politically and institutionally feasible. In terms of political feasibility, this procedure does not require huge investment of money for lobbying different decision makers, but need only a consensuses on two factors: (i) how often the update should be conducted and (ii) inclusion of this procedure in the law of the CCT program in Guatemala. Moreover, in terms of institutional feasibility, the existing

institutions are already gathering the information needed for the update procedure, and thus, only institutional cooperation among them is required.

5.2. Policy recommendations to implement on the Conditional Cash Transfer Program in Guatemala

Following the same scheme of the update procedure in the Mexican case, the procedure for Guatemala will be as follows: the Ministry of Social Development should update the amount of CCT every six months, according to budget availability and based on the accumulated variation on the *Price of the Basic Food Basket (CBA)* [21] for rural and urban areas. This Price of the Basic Food Basket is on the equivalent to the value per month of the basic food basket per person, and is published by the *National Institute of Statistics of Guatemala (INE)*[22]. To update the Price of the Basic Food Basket, INE uses as a reference the *Consumer Price Index (IPC)* [23] which is a macroeconomic indicator used to measure the changes of the prices of products and services in the Guatemalan economy, by putting the prices observed in the previous month of the study as basis. The IPC is a monthly research conducted by the *National Institute of Statistics (INE)*.

After updating all the indicators needed in accordance with the law, the Ministry of Social Development, if the accumulated variation is positive, updates the amount of CCT and publishes it as an amendments on the Rules of Operation of *My Safe Bonus* in the Official Gazette of the Guatemalan government.   However, when the accumulated variation is negative, the amount of CCT will remain the same, as the one used in the previous six months.

The procedure is simplified in the Guatemalan case because the process only concerns two institutions, as *Figure 6* shows. Having an easy institutional cooperation, the update

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[21] *CBA* is the acronym in Spanish of *Canasta Básica Alimenticia*
[22] *INE* is the acronym in Spanish of *Instituto Nacional de Estadística*
[23] *IPC* is the acronym in Spanish of *Índice de Precios al Consumidor*

procedure for the Guatemalan case is not difficult to be implemented. However, during this reform process three main obstacles could be faced.
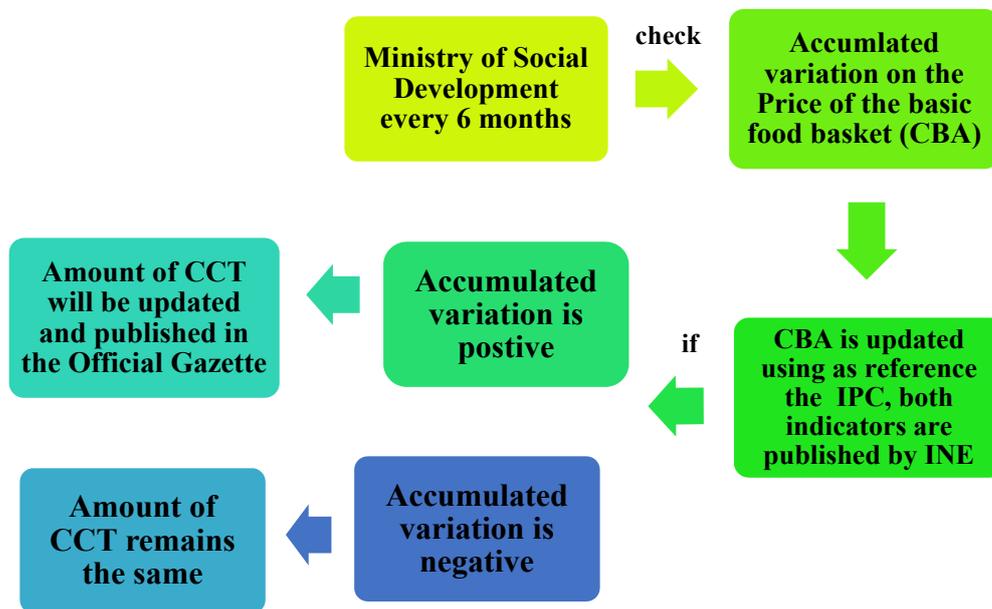
Figure 7. Update procedure of the amount of CCT in Guatemala

The first obstacle is *the burden cost and sharing benefits.* The cost of the inter-institutional agreement will be borne by the central government, but the benefits of this agreement are shared and not sufficiently high. The National Institute of Statistics is already doing the job that is required for updating the amount of CCT, and the only element that is missing is inter-institutional cooperation. Due to such reasons, the central government might not conceive the importance of facilitating an inter-institutional agreement as previously mentioned, and rather invest its budget on other policies as national priorities.

Under such conditions, both authorities, the Ministry of Social Development and the National Institute of Statistics, lose key privileges, and in turn, need to take responsibility for the results. One of these privileges is the financial support that they get from the central government. Since only the inter-institutional agreement is missing, the central government might suggest those two authorities to use the current budget to implement the reform and to delegate to specific departments the task of collecting the data required and actualizing the

parameters used as indicators for the amount of CCT. This might lead to an opposition from the authorities to accept the reform and its implementation, due to the potential workload.

The second obstacle is the *conflict between authorities.* Each institution that would be involved in the agreement has its own structure, legal framework, regulations, procedures and legal timeframe. Hence, to sign an inter-institutional agreement both authorities, firstly, need to find some points in common needed joining forces and improving its efficiency, and secondly, to identify whether they have overlapping functions. In this case, they should reach a consensus on how these institutions should delegate the aforementioned activities among themselves and how should support and cooperate with each other through an agreement.

This unrest between authorities could lead to a misunderstanding where one institution could take a higher hierarchal position as compared to the other institution. This is why it is important for the inter-institutional agreement to highlight that its main purpose is to facilitate the flow of information, and to require them to work in cooperation at the same hierarchical level. If this issue is not clarified from the beginning, an attempt to reform could be undermined by the reduced efficiency arising from institutional competitions.

The third obstacle is the *difficulties in the process of decentralization.* The redistribution of roles and activities is the key element to have a successful reform that designs the best way of implementation. Both authorities want to centralize the operations that are needed to carry out the reform. Centralizing the tasks will provide more financial support from the central government, which will beneficiate in the long term the main institution who will be in charge of the reform. However, this scenario would affect the efficacy of the work to be done, due to the different lines of work that each institution will utilize. Making cooperation between the two institutions, the Ministry of Social Development and the National Institute of Statistics necessary would greatly increase the effectiveness of the CCT program in Guatemala.

In reaching an agreement between the institutions, the central government should be included in the discussion. The central government can revise the overall policy to be implemented, can study the direction of the reform and its design, can provide the technical and financial support that the authorities will need. Also, the central government should be informed of all the data that will be shared between the institutions, monitoring and evaluating the effectiveness of this reform. Finally, the central government can make a decision on approving this decentralization of functions between the Ministry of Social Development and the National Institute of Statistics.

Overcoming the obstacles described before, the first step to implement the updated procedure of the amount of CCT is to create a legal framework that will regulate the reform. In this case, the legal framework means an agreement on inter-institutional cooperation. Having a detailed legal framework will provide the base of the updated procedure and the legal certainty needed for each activity to be conducted. In this regard, the agreement of inter-interinstitutional cooperation between the Ministry of Social Development and the National Institute of Statistics must regulate at least the following points:

- The details on the updated procedure of the amount of CCT briefly described in *figure 7.*

- Which departments are going to be in charge of the collection and analysis of the data.

- Which departments are going to bridge between the institutions involved in this agreement.

- How the main authorities of both institutions are going to take decisions together.

- What will be the role of the central government in this agreement.

- The importance of horizontal cooperation between the institutions.

- How the tasks are going to be divided between the institutions.

- How the costs are going to be divided between the institutions.

- What are going to be the main responsibilities of each institution.

- What indicators are needed to be updated every six months.

- The legal timeframe to send and share the data and information between the institutions.

- When the updated amount of CCT should be published on the Official Gazette.

After having the legal framework, the second step will be to fix the legal timeframe to conduct the updating of the indicators needed to know whether the amount of CCT should be increased or remains the same. In this regard, the main task of the National Institute of Statistics is to publish a new study. Currently, *INE* publishes a monthly report that shows the variation on prices of the basic food basket, based on the consumer price index. Now, the new study that this institution should publish should show the average of the previous six months. For instance, in the second week of July, after publishing the study of prices in June, *INE* should conduct a study about the variations on the prices of the basic food basket. By gathering all the information already analyzed from January to June, an average can be obtained. Thereby, in the third week of July, *INE* could share this information with the Ministry of Social Development. The procedure will be repeated in January by using the similar legal timeframe, so as to gather the information published from July to December in the second week of January, and to publish and share the final report with the Ministry in the third week of January.

Once the Ministry of Social Development has the information analyzed by *INE,* the last step to implement the update procedure of the amount of CCT will be conducted. The Ministry can compare the obtained information with their previous numbers and indicators

used during the previous six months. If any change is reported, the amount of CCT should be adjusted to fill the gap generated by the variation on the commodity prices. After this, the Ministry should fix what will be the new amount of CCT that will solve this variation, and then, refer this information to the central government. The central government then studies the variation found by the Ministry, and decides whether the budget availability can support the update of the amount of CCT. The central government, if having the budget availability, will approve the updated amount of CCT and refer it to the Ministry for its publishing the corresponding amount on the Official Gazette.

On the other hand, even if the indicators published by *INE* do not report a variation from the indicators used by the Ministry of Social Development for the previous six months, the Ministry will send a report to the central government regardless. This report will explain that there is no variation on the prices of the basic food basket, and thus, no change of the amount of CCT is needed. This report has the purpose of demonstrating to the central government that the update procedure is being applied, and that cooperation between the institutions is good despite the absence of reported variation. In this case, the central government will study the report and will refer it to the Ministry for publishing the outcome on the Official Gazette. This procedure is to indicate in the official report that the amount of CCT will remain the same for the following six months, due to no variation on the prices of the basic food basket.

Following this line of ideas, the benefits of having such kind of procedure are not just applied to the CCT program. This procedure allows a better flow of information between the Ministry of Social Development and *INE* to facilitate the collection and analysis of household and individual data, which can later lead to the design and implementation of new social policies to reduce and prevent poverty and extreme poverty. Furthermore, it is imperative to keep in mind that through reforms on social programs and social policies, the welfare of the

population that still need support can be boosted and be integrated into the growth process of a given country.

Finally, it is important to highlight that, further researches should be conducted focusing on studying up to which level Mexico and Guatemala can increase the amount of CCT that they provide to the beneficiaries of the programs. Determining the threshold point of each country would help to evaluate what is the next step to be done regarding conditional cash transfers.

References

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Baker, J., & Grosh, M. (1994). Poverty reduction through geographic targeting: How well does it work? *World Development*, 22(7), 983−995. Retrieved September 12, 2015, from http://www.sciencedirect.com/science/article/pii/0305750X94901430

Benavides, J. (2013, March). *Conditional cash transfers program in Guatemala. Policy simulation and cost effectiveness analysis.* Global Development Network. Retrieved September 4, 2015, from http://gdn.int/admin/uploads/editor/files/GDN_PEMRP_FUNDESA_PS_Education_Health.pdf

Cabrera, M., Delgado, M., & Guzmán, V. (2009). Guatemala: Choques económicos, vulnerabilidad y políticas de protección social. [Guatemala: Economic shocks, vulnerability and social protection policies]. Instituto Centroamericano de Estudios Fiscales ICEFI. Retrieved August 29, 2015, from http://icefi.org/wp-content/uploads/2012/08/boletin12_28JULIO.pdf

Central Bank of Guatemala. (2015). *Exchange rate.* Retrieved September 5, 2015, from http://www.banguat.gob.gt/cambio/en-default.asp

Currie, J., & Gahvari, F. (2007). *Transfers in cash and in kind: Theory meets the data* (NBER Working Paper 13557). Retrieved September 25, 2015, from http://www.nber.org/papers/w13557.pdf

Fiszbein, A., Schady, N., Ferreira, F., Grosh, M., Kelleher, N., Olinto, P., & Skoufias, E. (2009). *Conditional cash transfers: Reducing present and future poverty.* Washington, DC: World Bank. Retrieved September 4, 2015, from https://openknowledge.worldbank.org/bitstream/handle/10986/2597/476030PUB0Cond101Official0Use0Only1.pdf?sequence=1

Gammage, S. (2011, November 30). *Conditional cash transfers and time poverty: An example from Guatemala.* Paper presented at the Forty-sixth meeting of the Presiding Officers of the Regional Conference on Women in Latin America and the Caribbean in Santiago de Chile, Chile. Retrieved September 4, 2015, from http://www.cepal.org/mujer/noticias/noticias/1/43711/GAMMAGE_Conditiona_Cash_Transfers_and_Time-Poverty_03102011.pdf

Grosh, M. (1992). Belize: *Sliding fee scales for Health Ministry Medical Services. From Platitudes to Practice: Targeting Social Programs in Latin America. . Volume II: Case Studies.* (Latin American and the Caribbean Technical Department, Regional Studies Program Report No. 21.). Washington, D.C.: World Bank. Retrieved September 13, 2015, from http://www-wds.worldbank.org/servlet/WDSContentServer/WDSP/IB/1994/01/01/000009265_3970128111710/Rendered/PDF/multi0page.pdf

Grosh, M., & Baker, J. (1995) Proxy means tests for targeting social programs. *The Living Standards Measurement Study*, 118. The World Bank, Washington D.C. Retrieved September 10, 2015, from http://www-wds.worldbank.org/external/default/WDSContentServer/WDSP/IB/1995/07/01/000009265_3961219105617/Rendered/PDF/multi_page.pdf

Handa, S (2001). *Notes on a proposed scoring formula for a Proxy Means Test in Jamaica.* Washington, D.C.: Inter-American Development Bank.

Hernández, M. (2015, September 28). Caso "La Línea": Eco declara y vincula a Pérez y Baldetti [Case "La Línea" Eco declares, linking Perez and Baldetti]. La Hora. Retrieved October 16, 2015 from http://lahora.gt/caso-la-linea-eco-declara-y-vincula-a-perez-y-baldetti/

Lavinas, M., & Székely, M. (2011). Ejercicio de apreciación sustantiva: Mi familia progresa (MIFAPRO) Guatemala. [Exercise of substantive assessment: My Family Progresses (MIFAPRO) Guatemala]. United Nations Development Programme Guatemala. Retrieved August 29, 2015, from http://biblioteca.oj.gob.gt/digitales/42534.pdf

Levy, S., & Rodríguez, E. (2004). *Economic crisis, political transition and poverty policy reform: Mexico's Progresa/Oportunidades program.* Washington, D.C.: Inter-American Development Bank.

Method of identification and permanence of poor households, PROSPERA Program of Social Inclusion [Método de identificación y permanencia de hogares en situación de pobreza de PROSPERA Programa de Inclusión Social]. (n.d.). *Ministry of Social Development.* Mexico. Retrieved June 5, 2015 from https://www.prospera.gob.mx/swb/es/PROSPERA2015/Documentos_Normativos

Ministerial Agreement of rules of operation of PROSPERA Program of Social Inclusion, for the fiscal year 2015 [Acuerdo por el que se emiten las Reglas de Operación de PROSPERA Programa de Inclusión Social, para el ejercicio fiscal 2015]. (2014, December 30). *Ministry of Social Development.* Mexico. Retrieved June 5, 2015 from http://www.dof.gob.mx/reglas_2015/SEDESOL_30122014_14.pdf

Monroy, G. (2011, June). Evaluación externa y preliminar del programa "Mi Familia Progresa". [External and preliminary evaluation of the program: "My Family Progresses"]. DCM Consultores Guatemala. Retrieved August 29, 2015, from http://www.dmcconsultores.com/doc/EvaluacionMifapo-AC%202011.pdf

Narayan, A., & Yoshida, N. (n.d.). P*roxy means test for targeting welfare benefits in Sri Lanka*. (South Asia Poverty Reduction & Economic Management, World Bank). Washington, DC. Retrieved July 13, 2015 from http://siteresources.worldbank.org/EXTSAREGTOPPOVRED/Resources/493440-1102216396155/572861-1102221461685/Proxy+Means+Test+for+Targeting+Welfare+Benefits.pdf

National Institute of Statistics of Guatemala. (2011, November). Encuesta Nacional de Condiciones de Vida, -ENCOVI 2011-. [National Survey of Living Conditions, -ENCOVI 2011-]. Retrieved June 4, 2015, from http://www.ine.gob.gt/index.php/encuestas-de-hogares-y-personas/condiciones-de-vida

National Institute of Statistics of Guatemala. (2015, September). Índice de precios al consumidor -IPC- y costo de la canasta básica alimentaria y vital, agosto 2015. [Consumer price index -CPI- and basic food basket prices, August 2015]. Retrieved

September   4,   2015,   from
http://www.ine.gob.gt/sistema/uploads/2015/09/08/tfvISxnPTQehsQ6Hj5PmMidTK7
9wyfSr.pdf

O'Donoghue, T., & Rabin, M. (1999). *Doing it now or later*. American Economic Review
89   (1),   103–24.   Retrieved   September   15,   2015,
http://www.uibk.ac.at/economics/bbl/lit_se/lit_se_ss06_papiere/now_or_later.pdf

Peralta, E. (2015, September 3). Guatemalan president resigns, is jailed amid corruption
scandal.   *The   two-way.*   Retrieved   October   16,   2015   from
http://www.npr.org/sections/thetwo-way/2015/09/03/437158681/guatemalan-
president-otto-p-rez-molina-resigns-amid-corruption-scandal

Persaud, A. (26 October 2005). *Constructing a proxy mean test using survey data – an
exposition of the methodology.* Paper presented at the Thirtieth Meeting of the
Standing Committee of Caribbean Statisticians in Kingston, Jamaica. Retrieved
September   10,   2015,   from
http://www.caricomstats.org/Files/Meetings/SCCS30/Paper28.pdf

Reuters. (2015, September 8). Guatemala's ex-president ordered to stand trial amid
corruption scandal. *The Guardian.* Retrieved October 16, 2015 from
http://www.theguardian.com/world/2015/sep/08/guatemala-ex-president-stand-trial-
graft-scandal

Tally, E., & Ochaeta Aguilar, R. (2012). Los programas de transferencias monetarias
condicionadas (PTMC) y "Mi Familia Progresa"/"Mi Bono Seguro" en Guatemala
[The conditional cash transfer programs (CCTP) and "My Family Progresses"/"My
Safe Bonus" in Guatemala].   Guatemala: Acción Ciudadana/Transparency
International.   Retrieved   July   27,   2015,   from
http://www.ziglaconsultores.com/eela2/bajar/Guatemala%20_Estado%20del%20Arte.
pdf

UNESCO. (2015). Poverty reduction. *Education*. Retrieved September 11, 2015, from
http://www.unesco.org/new/en/education/themes/leading-the-international-
agenda/education-for-sustainable-development/poverty-reduction/

United States Department of Agriculture, Food and Nutrition Service. (2015, August 21).
Supplemental nutrition assistance program (SNAP). Retrieved September 26, 2015,
from http://www.fns.usda.gov/snap/supplemental-nutrition-assistance-program-snap

Valencia Lomelí, E. (2008). Conditional cash transfers as social policy in Latin America:
An assessment of their contributions and limitations. *Annual Review of Sociology,*
(34), 475-499.

World Bank. (2011). *Overview*. Poverty Analysis. Retrieved August 20, 2015 from
http://web.worldbank.org/WBSITE/EXTERNAL/TOPICS/EXTPOVERTY/EXTPA/0
,,contentMDK:22397595~pagePK:210058~piPK:210062~theSitePK:430367,00.html

World Bank. (2014, November 19). A model from Mexico to the world. *World Bank News.*
Retrieved   August   6,   2015,   from

http://www.worldbank.org/en/news/feature/2014/11/19/un-modelo-de-mexico-para-el-mundo

World Bank. (2015, October 4). World Bank forecasts global poverty to fall below 10% for first time; major hurdles remain in goal to end poverty by 2030. Retrieved October 15, 2015 from http://www.worldbank.org/en/news/press-release/2015/10/04/world-bank-forecasts-global-poverty-to-fall-below-10-for-first-time-major-hurdles-remain-in-goal-to-end-poverty-by-2030

World Bank. (2015). Poverty headcount ratio at $1.90 a day (2011 PPP) (% of population). Retrieved October 15, 2015 from http://data.worldbank.org/indicator/SI.POV.DDAY

World Bank Data. (2014). *Guatemala.* Retrieved August 29, 2015, from http://data.worldbank.org/country/guatemala

World Bank & Carter Center. (1997). *From civil war to civil society: The transition from war to peace in Guatemala and Liberia.* Retrieved August 29, 2015, from http://www.cartercenter.org/documents/1200.pdf

APPENDIX

CONDITIONAL CASH TRANSFERS:
COMPARISON OF PROGRAM AND DESIGN

	Guatemala	Mexico	Paraguay	Chile
Name of the Program	**Mi Bono Seguro**	**Prospera -Programa de Inclusión Social-**	**Tekoporã**	**Bono de Protección Familiar -Chile Solidario-**
Objective	The program aims at reducing rural poverty with the focus on households in poverty and extreme poverty, by facilitating conditions that support breaking the intergenerational cycle of poverty through human capital formation. The program also provides children aged between 0 and 15 years with access to health, and children aged between six and fifteen years with education	The program articulates and coordinates the institutional provision of various social policies, programs and actions, including those related to productive development, income generation, economic welfare, financial and labor inclusion, education, nutrition and health, catered to the population in a situation of extreme poverty. A system of responsibility enables families to improve their living conditions and ensures the enjoyment of their social rights and access to social development and equal opportunities	The program facilitates the access of children to safe and adequate food and nutrition, essential for developing their learning skills in the present and future conditioning; to strength the retention of children and adolescents in their educational levels; and to care good nutrition and health of pregnant women and the disabled persons	The program operates as Social Protection System, with an integrated approach that combines assistance and development to reduce extreme poverty It is a benefit granted by the State as direct support to individuals and families with low income, particularly targeting the most vulnerable people in order to overcome extreme poverty. It operates through programs that work in a personalized way in social and workplace, promoting the development and autonomy of the family, and further enhancing their capacities to join the workforce. These programs are associated with the delivery of bonus pursuant to recognition of

				achievement and fulfillment of duties in the areas of health, education and work
Design	Mi Bono Seguro is a Conditional Cash Transfer Program which promotes a demand for health services and education; asides from promoting early childhood development, school enrollment and attendance of children and adolescents aged from 0 to 15 years	Prospera is a coordinated program that articulates incentives for education, health and nutrition, in order to promote the development of capacities of families in extreme poverty	Tekoporã is established on the basis of the average GDP per capita at the country level, which corresponded, at the time of measurement, to \$10 per person. The program adopts a transfers combined method consisting of a fixed contribution equivalent to \$14 per household, and a contribution per child attending school (up to 14 years old) in the amount of \$7 per person, up to a maximum of 4 children	The benefited families are invited to formally participate in the program by signing a commitment to the government. Chile Solidario System gives these incorporated families the preferences of receiving a guaranteed set of benefits and social programs to which the State has access. System components are: a) psychosocial support b) monetary incentive c) monetary subsidies d) preferential access to social promotion programs and employee benefits and welfare
Conditions	**Health Bonus:** Given to families who meet the responsibility of caring for the health of their members. The requirements are: • Having children aged 0 to 15 years. • Assisting the health services and give health checkups for	The program uses the cash support to improve family welfare, particularly nutrition, health and education of children. In addition, it supports school-age family members to attend regular classes and supports with lack of educational exposure to be	Every housewife agrees that family members attend medical services and are fed in order to improve their human capital during the 36-month of stay under the program for each household	Comply with the conditions mandated in the Commitment of Participation. To meet this requirement, the beneficiaries must have fulfilled at least one dimension or component of the category regarding

	their children. • Taking control of the mothers in pregnancy or lactation. **Education Bonus:** Given to families who meet the responsibility of enrolling their children to school; the requirements are: • Having children aged from 6 to 15 years • Take the kids to school and avoid absences • Comply with 90% attendance in preschool and elementary levels	incorporated into adult education services		psychosocial support
Who and where (targeting)	**Health Bonus:** Given to families who have children aged from 0 to 5 years. **Education Bonus:** Given to families who have children aged from 6 to 15 years.	Given to families in extreme poverty; direct monetary support is given to a designated person of the families, usually the mother of the families, who must be aged of 15 years or more	Families living in extreme poverty and vulnerability, composed of children and teenagers 0-18 years of age, disabled and/or pregnant women	Families and their members in extreme poverty, who desire to join social networks and access to better living conditions. Each family or person, to be qualified in extreme poverty, must meet the condition of having a score on the CAS card, at the time of entry into Chile Solidario
When (how often, how long)	Bimonthly payment	The National Coordinator is responsible for delivering bimonthly monetary support	Payment is made in cash every two months, for 36 months. It is assumed that	Payment is be made monthly, and families and beneficiaries of Bono de

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		through settlement institutions, in a form of direct deposit cash or personal accounts, at the delivery points installed in the branches of such institutions or in places temporarily set up for this purpose	at the end of that period, the household will develop mechanisms to compensate for the disruption of the CCT	Protección who had received the financial support during the consecutive period of 24 months and should comply with the conditions of the system, according to the rules of law and its regulations; access to a Bono de Egreso, which lasts for three years after the end of the aforementioned period
What (level of benefits)	**Health Bonus:** • Assisting the health services and giving health checkups for their children. • Taking control of the mothers in pregnancy or lactation. **Education Bonus:** • Taking kids to school and avoid absences • Complying with 90% attendance at school	Nutrition, health and education for children aged between zero and nine years and for senior citizens	Health, food and education for children, and health and nutrition to pregnant women	The minimum quality standards of life consist of minimum targets to be met by the beneficiaries incorporated into Chile Solidario, and are in related to the following seven dimensions or categories of family life: Identification, Health, Education, Family Dynamics, Habitability, work and Income. The program also provides psychosocial support, in order to promote the development of personal skills and help family meet the minimum quality

				standards of life
How (methods of payment)	Depositing to beneficiaries' savings account	Direct deliveries by cash or deposits in personalized accounts	Cash paid directly to mothers	Financial assistance is granted in cash by the Institute of Social Welfare, to women who are over 18 years old. Only in the cases of families where no adult is senior female over 18 years old, the Bono de Protección may be assigned to an adult male family member
Financing options	Budget for the program is made annually in the State Budget	The program budget is allocated by three ministries: Ministry of Social Development, Ministry of Public Health, and Ministry of Public Education	The program is primarily funded through reprogramming of the state budget and external sources of credit granted by the Inter-American Development Bank	Budget for the program is made annually in the State Budget
Program administration	The Ministry of Social Development is in charge of the program administration	The Ministry of Social Development is in charge of the program administration	The Ministry of Social Action is in charge of the program administration	The Ministry of Development is in charge of the program administration
Monitoring	The Ministry of Social Development is in charge of monitoring	The Ministry of Social Development is in charge of monitoring	Social technicians called "Family Guide" are responsible to visit homes to verify the families' compliance with responsibilities and to provide guidance linked preferably to habitat improvement like hygiene	The Executive Secretariat Chile Solidario, the Social Division and regional ministries of Planning and Coordination, within their respective competences, are in charge of monitoring.

			habits, ideas and actions for improving the quality of food and health, and to household access to various utilities. School attendance is checked every two months and, in some areas, is checked monthly; health is checked every three to four months depending on the area. Also, the **Tekoporã** program currently reaches more than 100,000 families, which is the goal of the year 2014. The social program has greater coverage and is part of the National Program for Poverty Reduction "Sembrando Oportunidades"	Monitoring will allow to verify the performance of family support, depending on the degree of compliance with the assigned tasks and goals, and quality of work performed. Supervision of the Family Support includes deemed at least the followings: **a)** Care for individuals and families assigned under their responsibility. **b)** Update the information of individuals and families assigned under their responsibility.
Evaluation	The Ministry of Social Development is in charge of evaluation	The Ministry of Social Development has established delegations in each state, responsible for the care of benefited families, as well as the operation and monitoring of the program in the respective entities. The governments of the states, and delegations and		Process measuring the changes occurred during implementing the system for the benefit of individuals and families in extreme poverty, shall be exercised under the authorities of Chile Executive Secretariat Solidarity, the Social Division and Regional

		representatives of the federal programs, if any, are responsible for operating and providing education services, with a particular attention to population health, nutrition, productive inclusion, employment creation, income, self-employment and training. For deploying their actions and to ensuring efficient, effective, equitable and transparent operation, the program is supported by the joint commitment of the governments of the states and the Government of the Republic		Ministries of Planning and Coordination, within their respective competences. The evaluation seeks to measure the intermediate and final results achieved by families and individuals, attributable to Chile Solidario, and to propose necessary changes conducive to perfecting the system.
Grievance Systems	For questions, suggestions or complaints, dial 1514. The call is free, and the information is confidential. Otherwise, mothers can also visit the headquarters of the Ministry, departmental and municipal offices, or electronically use the website of the program	Prospera has different ways in which beneficiaries can raise concerns, requests, complaints, denunciations, suggestions and surveys related to PROSPERA: mail, email, telephone, hearing where PROSPERA staff personally attend to beneficiaries; PROSPERA mailboxes, and fixed and mobile mailboxes where beneficiaries can place their letters	The program participants are mothers who are chosen as representatives to the neighborhood, and designated as "Leader Mother"; they are in charge of grievance systems, which channel community concerns and support the work of the "Family Guide"	The program has a system for recording and monitoring online; Family Support working with families enters the information contained in each of the working sessions, on the system, allowing to meet online complaints and suggestions of each one of the families and to establish the priorities of benefits that should be available to them

				by the service institutions
Issues	Figures from the social program "Mi Bono Seguro" do not match the figures provided by the Chair of the Executive, the Ministry of Social Development, the opposition parties and expert analysis. "Mi Bono Seguro" program was not in operation during 2013 Q150 million (US\$ 18.75 million), which would have represented the delivery of Q300 (US\$ 38.75) for each of 750,000 beneficiaries	Some communities were removed from the beneficiaries in 2004 without any prior notification. Political use of social programs in different parts of the country. Through social programs, the government has sought to break the intergenerational cycle of poverty by providing access to health, education and medication, but has not been successful. Furthermore, no specific instruments were included to end inequality. The assumption that young people could have a job by breaking the intergenerational cycle of poverty through having access to education and health is not fulfilled	After nine years, the program has not taken off from the experimental stage in terms of its implementation, as it only covers less than 10% of its target population. This is due to the low budget allocation since its pilot phase. Another disadvantage of the program is the fact that it operates in geographical areas of political preference and falls under the Network of Social Protection and Promotion as a sub program. This tends to undermine the importance and magnitude of Tekoporã, as it is intended to serve the entire population living in extreme poverty in rural and peri-urban areas of the country. The biggest problems are observed in the provision of primary health care, as communities where the program acts constitute the neglected periphery of the national	In 2007, surveys were done in neighborhood councils rather than in houses. Twenty daily queries were applied, which gave no time for them to complete surveys well. A year after fault in data was detected, ten officers were dismissed. It was found that municipal officials benefited some residents and managed his own records. Ten people were found to be unrelated to the municipality. In 2010, some residents complained that enumerators charge US\$8 to put low economic conditions on the form. In 2009, workers of Programa Puente, indicated that many people lie about their socioeconomic conditions when responding the Form of Social Protection (SPF). In 2011 the former Ministry of Development

			public health system. Often the program has to dispatch the health units to the communities where the beneficiaries meet on the days of payment transfers, in order to ensure that people's. Lastly, the most serious problem is the deficiency in information about the height and weight of children in all districts covered by Tekoporã, which is fundamental to measuring child malnutrition. Such absence of reliable information is identified during the program execution. These measurements should be systematically carried out by the health staffs who are not always present at the time of payment of the conditional cash transfer	(Ministry of Planning and Cooperation) counted 4,000 incurred in delivering false information in the Form of Social Protection to achieve some social benefits.