# The Conditional Cash Transfer: A Policy Model for the World?

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# Contents

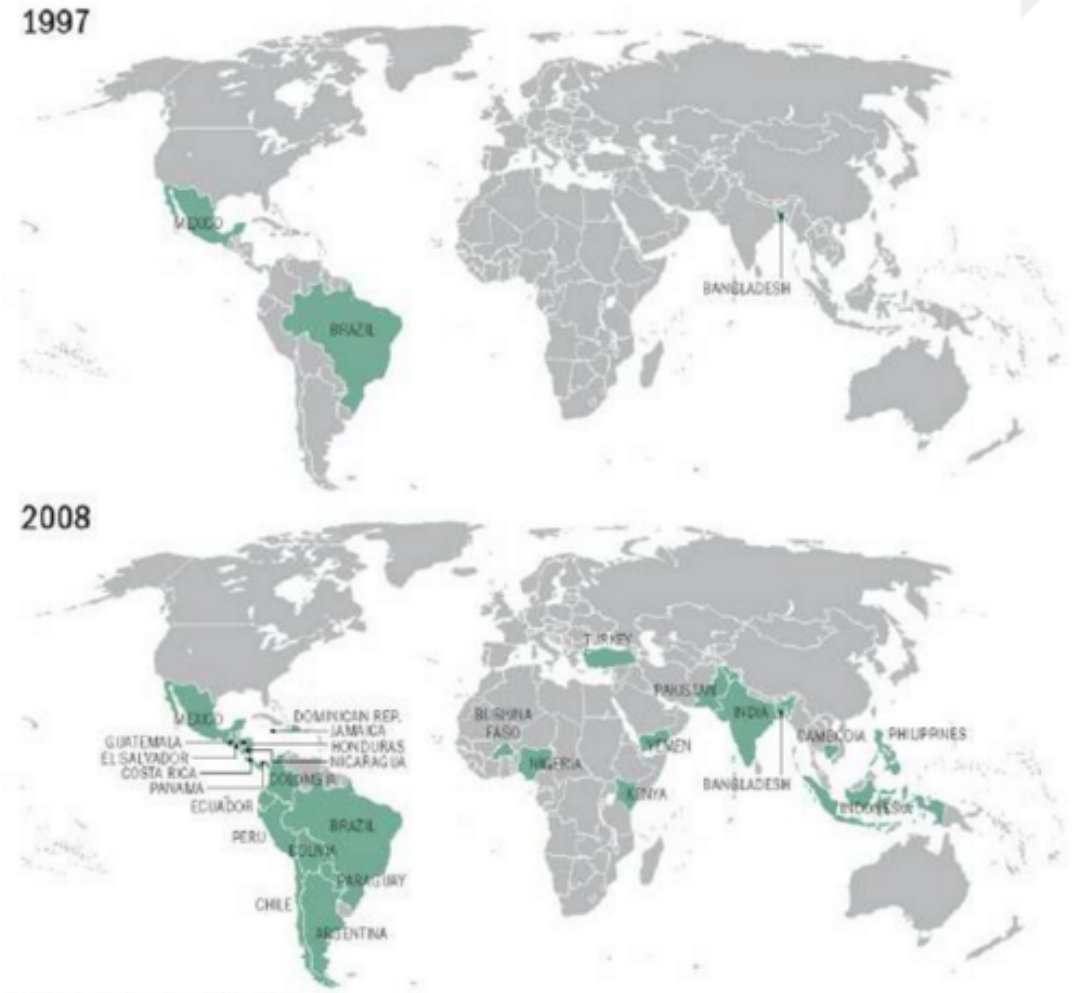
## Introduction

Since 2000, the international community and governments of developing countries have focused on poverty relief. Welfare, development aid, debt relief, and microfinance strategies have been implemented on a wide scale since the United Nations Millienium Development Goals set forth in 1995. In 1997 in Central America, Mexico pioneered a new method of poverty alleviation program called *Oportunidades*. *Oportunidades* transfers money from government to citizen, but with specific stipulations for beneficiaries. This program, beginning on a national scale in 2002, was the first of what would become known as Conditional Cash Transfer Programs (CCTs). All CCTs transfer cash to households on the condition that households comply with certain requirements. This model would go on to be implemented in several other Central and South American countries. In 1998, Mexico and Brazil were the only two nations using the program The rise of CCT programs in the '00s has been coupled with an expansion of existing programs in Mexico and Brazil. Now, over twenty nations all across the developing world have implemented similar programs (see figure one).[1]

My public policy analysis takes a deeper look at *Progresa/Oportunidades* in Mexico and *Bolsa Familia* in Brazil. Several questions drive this analysis. First, how do differences in culture, political institutions, and political attitudes influence the creation public programs? How did Mexico and Brazil converge on a similar poverty policy? What causes the variation in the CCT programs across Mexico and Brazil, and what can we learn about political institutions and governments from the implementation of this public policy? And Finally, How do policymakers evaluate poverty relief policies? Do programs have disproportionate impacts on beneficiaries depending on where the household is located?

[1] Fizbein, Ariel, and Norbert R. Schady. 2009. *Conditional Cash Transfers: Reducing Present and Future Poverty*. World Bank Publications.

**Figure 1 CCTs in the World, 1997 and 2008**




*Source:* World Bank.

[2]

First, I review some important background about CCT programs and review some of its key features and definitions. Second, I review some of the public policy literature on CCT programs. Then, I conduct a comparative analysis between Mexico and Brazil, examining the history, political climate, and economic conditions that brought CCT programs into existence in both countries. Finally, I delve deeper into a quantitative analysis of Mexico's *Progresa*,

[2] Fiszbein, Ariel, and Norbert R. Schady. 2009. *Conditional Cash Transfers: Reducing Present and Future Poverty*. World Bank Publications.

examining the effects of the program on school attendance for children in both cities and rural areas.

## Background

CCTs emphasize human capital development in addition to poverty relief. Human capital, understood in the development context includes factors such as education and health. The defining characteristic of the CCT is the "conditionality." In order for a household to receive a cash transfer from the government they must meet a certain number of human capital goals, or "conditions".

Rawlings and Rubio provide a fairly basic definition of the programs in "Evaluating the Impact of Conditional Cash Transfer Programs" (2005). Many programs target schooling and health care, providing cash as incentive for enrollment, attendance, and doctor's visits. CCTs are unique in that they are a market oriented demand side intervention – they tend to increase poor households demand for health care services. intended to complement supply side investment in schools, health centers, etc. Many human capital development initiatives are supply side, so for example, funding schools and clinics (the suppliers of human capital services). But these supply side programs come with a lot of issues. They have high out of pocket expenses for governments and taxpayers, high opportunity costs for government spending, and difficulty targeting populations most in need. Corruption, limited resources, and ineffective administration might also prevent barriers to good supply side development.

Alternatively, CCTs are demand side programs, using cash transfers to incentivize greater demand for education and health services. CCTs are usually means tested programs, meaning that beneficiaries must qualify based on certain economic indicators like household

income.[3] However, it is important to note that the success of a CCT is dependent on good services. [4] Increased demand does little if the quality of schools and healthcare is limited. Thus the success of each program is inherently dependent on the ability of education and health infrastructure to actually improve human capital.

From pilot programs to massive 11 million person poverty relief policies, all CCTs have an integrated approach to poverty reduction – using both income redistribution and human capital development.[5] The CCT changed the game in a number of ways, first, by flipping the script toward demand side poverty relief. Mexican scholars and academics, notably Santiago Levy, designed the program to fit Mexico's needs. Rawlings and Rubio point out how it differs from the traditional role of social assistance, saying, the traditional role of social assistance was to "redistribute income and resources to the needy, helping them overcome short term poverty in times of crisis." Traditional poverty relief, the authors argue has weak poverty targeting, high administrative and component costs, lack of integration with other initiatives, a history of paternalism, and a short term focus.[6] The CCT is domestically designed and has an intentional long term growth strategy.

CCT programs address many of the traditional issues Rawlings and Rubio outline. First, the direct cash transfer has less overhead than traditional welfare programs. Second, CCTs maximize complementaries between different elements of human capital development (e.g. better nutrition will help children do better in school) by paying to change people's behavior. Third, cash is a flexible and efficient medium for transfer, so households can spend it at their discretion. Some CCT programs also empower women by targeting mothers directly with cash

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[3] Rawlings, Laura B, and Gloria Rubio. "Evaluating The Impact Of Conditional Cash Transfer Programs." *The World Bank Research Observer* 20, no. 1 (2005): 29-55.
[4] IBID

[5] IBID
[6] IBID

transfers. Fourth, the programs have centralized infrastructure and regulation that make it easy to administer.[7]

Despite sharing all these characteristics, CCT programs look different in different contexts. I investigate why this might be in Mexico and Brazil and further, attempt to evaluate whether or not the Mexican program is doing what it intends to do in rural and urban contexts.

## Literature Review

Academics have studied CCTs from a number of perspectives. Social science literature outlines the benefits of comparative policy study and lends important background on the history, political attitudes, and policy making processes that produce CCT programs and poverty relief programs like them. This literature provides a framework that I can apply to my particular case study: CCTs in Mexico vs. CCTs in Brazil. The economics literature gives important insight into the tradeoff between efficiency and equity in poverty relief, how the program changes incentives, and potential limitations of the program. I build off these ideas and discuss how policymakers address economic concerns in the program design. Furthermore, the economics literature provides an example of the type of quantitative analysis I will conduct in Part II, where I analyze a randomized controlled trial to measure program outcomes for education.

Scholars discuss a number of factors that have affected the development of poverty relief policy in developing countries. Fried, Hayakawa, and Mendoza and Olfindo discuss the role democracy, clientism, and voter popularity in defining CCT programs around the world. Their insights provide a foundation for understanding how these same issues might play a role in the development of CCTs in Mexico and Brazil.

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[7] IBID

Poverty relief, generally, is electorally favorable. Fried (2011) argues nations like Brazil have a history of reliance on clientelism to win political support. Poverty relief programs, especially poverty relief demonstrated to work can serve an important purpose for raising a country's profile in the international community and winning political support for a party. Fried investigates whether Bolsa Familia distributes benefits evenly across households in need, or whether patronage to certain constituencies plays a role. He finds no significant evidence that political clientism plays a role in the distribution of benefits. This study is of interest because it asks key questions about program design and the influence of politics in creating policy.

Hayakawa(2015) and Mendoza and Olfindo(2016) explores a similar question, asking if the conditional cash transfer works to buy votes. Hayakawa argues that good governing principles, like transparency, openness, accountability, and participation are all emphasized by empowering poor households through conditional cash transfer programs. In the Phillipines, a long history of political dynasties and vote buying undermines the government's ability to effectively and equitably provide public services.[8] Hayakawa hopes that the conditional cash transfer can actually help to improve political participation in the Phillipines in the future. Mendoza and Olfindo (2016), find evidence in Colombia that conditional cash transfers in Colombia make beneficiaries 2.5 percentage points more likely to vote. Democratic participation is another potential benefit of implementing the CCT in Brazil and Mexico.

Some authors argue that demand side interventions might actually be ways for government to appear to help without addressing root causes. Of concern to some critics of CCTs is a problem of institutional design. Rawlings (2005) brings up some important criticisms – saying that CCTs, though a creative approach, actually work around the more challenging

[8] Hayakawa, Motoky. 2015. "How Is the Conditional Cash Transfers Program Changing the Politics of Service Delivery in Philippines?" Text. *Governance for Development*. December 1. http://blogs.worldbank.org/governance/how-conditional-cash-transfers-program-changing-politics-service-delivery-philippines.

objective of changing and improving bad public services. They can "bypass unresponsive bureaucracies" and undermine efforts at broad reform.[9] The programs can also undermine local government authority by centralizing social assistance delivery. By focusing on the demand side, policymakers can avoid harder questions about corruption, institutional change, and inefficiencies in providing services. How the programs are implemented from an institutional perspective, and whether or not it coupled with high quality services is vitally important to its success in Mexico and Brazil.

Policymakers, Briere and Rawlings (2006) point out, must decide whether or not to nationalize programs and what the relationship between levels of government will be in distributing benefits.[10] Briere and Rawlings bring up a question I will address in my analysis: why Bolsa Familia is more decentralized than Progresa in Mexico.

Economists Das, Do, and Özler outline two main goals of CCT programs that sometimes do not always work together. The tradeoff between the efficiency and equity goals provides the framework I use for discussing different policy outcomes in Mexico and Brazil. CCTs seek to create *efficiency* by compensating for market failures. But they also seek to create *equity* by giving resources to poor households. They create efficiency by encouraging investment in human capital like education and health care that are undercompensated for in poor households incentives. They create equity by redistributing resources so the poor get more and the rich get less.[11] This balance is vitally important to policymakers who may have very different goals. For example, experts that want to create a sustainable long term program might favor efficiency and

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[9] Rawlings, Laura B. 2005. "A New Approach to Social Assistance: Latin America's Experience with Conditional Cash Transfer Programmes." *International Social Security Review* 58 (2-3): 133–61. doi:10.1111/j.1468-246X.2005.00220.x.

[10] Briere, Benedicte de la and Rawlings, Laura B. 2006. "Examining Conditional Cash Transfer Programs: A Role for Increased Social Inclusion?" SP Discussion Paper no. 0603.

[11] Das, Jishnu, Quy-Toan Do, and Berk Özler. "Reassessing Conditional Cash Transfer Programs." The World Bank Research Observer 20, no. 1 (2005): 57-80.

politicians that might be looking to win votes might favor equity. The CCT targets specific market failures for human capital in healthcare and education. Markets underprovide public goods like healthcare and education, particularly in developing countries, because they do not account for the positive externalities that education creates for society. Furthermore, markets suffer from information problems. Poor households tend to undervalue long term investments in human capital that might make them more upwardly mobile.[12] As a result they may be forced into tough decisions, like dropping out of school to work so the family has enough to eat, or staying in school to learn. The CCTs efficiency goal seeks to change these inefficient outcomes.

The efficiency/equity tradeoff provides the framework for the comparative analysis between CCTs in Brazil and CCTs in Mexico. But efficiency/equity tradeoffs don't tell the whole story of the effectiveness of a program. Rawlings and Rubio identify another problem in supply issues. Creating conditions for school attendance or health care visits will not have the desired effect if education and health services are inadequate for actually improving human capital.[13] Thus there needs to be concurrent improvement for school conditions and health services in order for the policy to work.[14]

CCTs have received a great deal of praise because some of them, like Mexico's Progresa, are structured to collect good data and be evaluated periodically. I lean on econometric research and the randomized controlled trial as a model for my own quantitative analysis of Progresa and how it differs between urban and rural environments.

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[12] Mullainathan, Sendhil, and Eldar Shafir. 2013. *Scarcity: Why Having Too Little Means So Much*. Times Books.

[13] Rawlings, Laura B, and Gloria Rubio. "Evaluating The Impact Of Conditional Cash Transfer Programs." *The World Bank Research Observer* 20, no. 1 (2005): 29-55.

[14] IBID

There is good reason why evaluation is so important to CCT programs. Evaluation is used to inform program design and expansion.[15] Two Progresa evaluations, in 2005 and 2011, provided the framework for CCT evaluation. Rawlings and Rubio (2005), using the randomized controlled trial method, estimated seven to nine percentage point increases in average enrollment rates for girls and three and a half to six percentage point increases for boys in treatment areas.[16] Behrman, Parker, and Todd (2011) used matched pairing to estimate the effects of cash transfers on school attendance comparing like households that were part of the CCT program and those that were not. They used a 2007 ENCEL survey of rural households, an external evaluation survey of Progresa. Berman, Parker, and Todd found that cash transfers had significant effects on increasing education and future employment. I lean on their methodology in my own analysis of a more recent dataset.

Bauw and Houdinnott construct an analysis intended to model whether the conditionality of school attendance is necessary for cash transfers to perform as intended within the Progresa program. They do this by comparing households that received a monitoring form that explaining the conditionality of the cash transfer with those did not receive such a document and were thus unaware of the conditions of the policy. To do this analysis, the authors use what they call a nearest-neighbor matching technique that compares like beneficiaries of the program that have similar household conditions, ideally isolating the effect of the awareness of conditionality. The authors find that awareness of conditioning has significant positive effects on school attendance for children entering lower secondary school, but much smaller effects on those in primary school.[17] The transition to secondary school is important in development and is also a common

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[15] IBID

[16] Rawlings, Laura B, and Gloria Rubio. "Evaluating The Impact Of Conditional Cash Transfer Programs." The World Bank Research Observer 20, no. 1 (2005): 29-55.

[17] Brauw, Alan De, and John Hoddinott. "Must Conditional Cash Transfer Programs Be Conditioned to Be Effective? The Impact of Conditioning Transfers on School Enrollment in Mexico." *Journal of Development Economics* 96, no. 2 (2011): 359-70

time for kids to drop out in order to work. The question that emerges being: is it the cash or the attendance condition that increases educational outcomes long term? Would households make the decision to send children to school more if they weren't being forced to by the conditions?

Berman, Parker, and Todd (2005) found that school enrollment improved to a greater degree when children had access to general and technical schools. With only access to long distance, satellite based schools, as is common in rural areas, the effects are less significant. The authors continue to say that effects are larger in areas where student-teacher ratios are lower, indicating that parents may select in or out of the program depending on school choice inputs like the quality of schools. This is important background for studying the difference in program effectiveness between urban and rural environments.

Fizbein and Schady (2009) point to a number of analyses that find big impacts in rural environments.[18] Schulz (2004), Behrman, Sengupta, and Todd (2005), and de Janvry and Sadoulet (2006), find significant effects for rural children entering their first year of secondary school. It also appeared to create positive spillover effects for the rest of rural children who were encouraged to increase attendance because their peers did.[19] Fizbein and Schady suggest different payment levels might be necessary in these environments because of the different conditions, namely, high costs to families and greater effective human capital gains to the transfer.[20]

[18] Fizbein, Ariel, and Norbert R. Schady. 2009. *Conditional Cash Transfers: Reducing Present and Future Poverty*. World Bank Publications.
[19] IBID
[20] IBID

## Methodology

This first part of this paper will use the comparative lens to examine what characteristics of Conditional Cash Transfer Programs make them successful in different environments. The analysis will focus on Mexico's *Oportunidades*, recently rebranded as *Progresa* (will be referred to interchangeably), and Brazil's Bolsa Familia.

Past research has used the comparative case study as the methodology for studying public policy. Rose (2005) in "Learning From Comparative Public Policy," defends the methodology of comparison. He says, "differences in the responses that national governments make to a common problem offer the opportunity to compare the strengths and weaknesses of your own programmes with what other countries are doing."[21] This ethos guides my comparative research in Mexico and Brazil. The comparative method is an opportunity for reflection and an opportunity to identify potential improvement.

Studying comparative public policy also offers the opportunity to study policy convergence.[22] Policy convergence is a phenomenon Bennett describes as the tendency of societies to grow more alike, in structure, processes, or performance.[23] This plays a role in the emulation of CCT policy across borders. The interesting question for those who study policy convergence is that similar problems, but different conditions, produce comparable, yet different policies. I try to identify what structural, cultural, and political norms and mechanisms might drive the creation of CCT policy in the two distinct areas of interest: Brazil and Mexico.

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[21] Rose, Richard. 2004. Learning From Comparative Public Policy: A Practical Guide. Routledge.

[22] Bennett, Colin J. 1991. "What Is Policy Convergence and What Causes It?" *British Journal of Political Science* 21 (2): 215–33. doi:10.1017/S0007123400006116.

[23] Sprinz, Detlef F., and Yael Wolinsky-Nahmias. 2004. Models, Numbers, and Cases: Methods for Studying International Relations. University of Michigan Press. and Kerr, Clark. 1983. *The Future of Industrial Societies: Convergence Or Continuing Diversity?* Harvard University Press.

The comparative method has been used to study Education policy (Zacharia 1979), poverty (Zeller and Sharma(2006) & Deepak and Mynt(1998)), and political economy (Pontusson 1995). The comparative method offers a number of advantages over the normal case study. Of particular interest to my analysis is the ability to take a closer look at institutions, socioeconomic conditions, and different political mechanisms. The comparative case study, "in which isolated configurative studies are brought together to identify common patterns and relationships,"[24] fits extremely well with trying to understand why two different countries might adopt a similar poverty relief strategy.

The policy process model also aids my analysis, providing a framework to discuss how agenas become policy. The policy process model I will lean on is made up of five steps: agenda setting, policy formulation, adoption, implementation and evaluation.[25] In countries around the world, the problems are variable because different contexts, different populations, and different goals of policymakers. I discuss how different conditions in each country – political, social, and geographic, change the way CCT policy was formulated and implemented, and make inferences about the effects on program effectiveness.

Brazil and Mexico make for a particularly interesting comparative case study. Mexico was the first country to implement a CCT; Brazil has the world's largest program. Greater population, less population density, and new social and political conditions make applying the Mexican model difficult in Brazil. The goal of this analysis will be to evaluate the features, methodology, and effectiveness of the two programs. I will also hypothesize as to why the two programs developed differently. The comparative method allows me to get at one of my

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[24] Sprinz, Detlef F., and Yael Wolinsky-Nahmias. 2004. Models, Numbers, and Cases: Methods for Studying International Relations. University of Michigan Press.
[25] Howlett, Michael and Ramesh, M.Toronto: Oxford University Press, 1995, Pp. Viii, 239." *Canadian Journal of Political Science/Revue Canadienne de Science Politique* 29 (1): 169–70. doi:10.1017/S0008423900007423.

research questions, why do CCTs vary across countries? Furthermore it aids me in drawing conclusions about the influence of history, institutions, public opinion, and culture on policy descisions and policy design.

The comparative analysis demonstrates distinct goals: human capital development in Mexico and poverty relief in Brazil (or in Rawlings and Rubio's terminology: efficiency vs. equity goals). Ultimately, unique underlying political and social perceptions around poverty relief between nations shape different CCT program features, methodology, and results.

Rawlings and Rubio identify two types of program evaluation. The first is an experimental design the randomized controlled trial, which involves the assignment of individuals for a treatment group. The second is quasi-experimental, which involves statistical matching. *Progresa* used randomly assigned localities to treatment. Experimental evaluations tend to be more statistically robust, but require a control group.

When this randomization and creation of control groups is not possible statistical matching based on certain economic and household characteristics can enable researchers to observe differences between those who participate and those who do not. Statistical matching techniques create a control group artificially, as opposed to experimental design – the concern is imperfect matching leads to imperfect results. Despite this risk, statistical matching techniques avoid ethical concerns with randomly selecting some to receive a crucial public good while others do not.[26] Quasi-experimental approaches are being used in Brazil and other

[26] Rawlings, Laura B, and Gloria Rubio. "Evaluating The Impact Of Conditional Cash Transfer Programs." The World Bank Research Observer 20, no. 1 (2005): 29-55.

nations where the programs are being implemented quickly on a national scale. Brazil uses a quasi-experimental technique, propensity score matching, in its impact evaluations.[27]

A number of scholars have studied conditional cash transfer programs. I reviewed several different methodologies – randomized controlled trial experimentation, quasi experimental approaches, and two other methods focusing on the size of the transfer and the conditionality of the transfer. My analysis analyzes data from randomized control trial data, with the added nuance of comparing rural and urban settings. I focus on school enrollment outcomes for Progresa participants, testing whether CCT programs are more effective in urban or rural environments. Schools in rural environments provide different barriers to education than those in rural environments. For example, job incentives for children differ by region and may encourage dropouts. Schools may be harder to access or differ in quality between rural and urban environments. These factors might undermine Progresa's ability to change household behavior when it comes to school attendance and enrollment. Understanding the best educational settings for effective policy shapes my commentary on how the program must evolve, spread, and what other similar policies must do to best address the needs of the future.

Part two allows me to explore the following questions: How do policymakers evaluate poverty relief policies and how effective are they at doing so? Do programs have disproportionate impacts on beneficiaries depending on where the household is located? To better understand the evaluation process, I attempt a secondary quantitative analysis myself. In order to craft effective policy for the future, it is important to understand not only how to conduct such an analysis in the best way possible, but also to understand the limitations of such research and what they mean for program impacts.

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[27] Soares, Fábio, Rafael Ribas, and Rafael Osório. "Evaluating the Impacts of Brazil's Bolsa Familia: Conditional Cash Transfer Programs in Comparative Perspective." Latin American Research Review 45, no. 2 (2010): 173-90.

## Analysis - Part One

Mexico and Brazil both implemented the CCT to address a shared development problem: poverty - a condition that contributes to poor health, forces children to drop out of school, and threatens social mobility through education. In this way, Progresa and Bolsa serve as an excellent example of policy convergence. But the two programs, sharing the umbrella name "CCT," differ greatly. Political and economic context in Mexico and Brazil influence Progresa and Bolsa's balance between efficiency and equity goals in their CCT policy.

To explore why policies differ, and the role that institutions, politics, and society play in each country, I explore the history of the programs, their goals, the details of their implementation, and the reported impacts of the programs. Different political climates, government structures, and political attitudes toward poverty relief affect the policy process model. In Mexico and Brazil, these factors created two similar poverty relief policies that were implemented in different ways, and as a result hold different primary objectives.

## Program History

*Opportunidades* began in 2002, building off an earlier program named *Progresa* that began in 1997. *Progresa-Opportunidades* was the world's first large scale conditional cash transfer program. Its goal simple was simple: to help poor families in rural and urban communities. But its design is complex. It was he first instance using conditional transfers as a development strategy and Santiago Levy, one of the program's creators, described it as a novel program for its time. The program was first implemented under president Zedillo, under whom it covered 300,000 families. By 2005 the program expanded to cover 5 million people and twenty four percent of the nation's population.

In the 1990s Mexico faced great political instability. Guerrilla uprisings and assassinations had a destabilizing effect on the nations politics. Partly as a result of this, the nation underwent a macroeconomic crisis right as President Zedillo was taking power in 1995.[28] Policymakers in Mexico responded to public outcry that this economic downturn would have devastating effects on the poor. What began as a movement to prevent hunger in a recession became an overhaul of Mexico's social security and development policy. Policymakers agreed that new policy must be based in academic research, but had concerns over the future of the program being used as a political chip, which would make it difficult to change or cut back on. As a result, much effort was made to make *Progresa*, and later *Oportunidades,* independent of presidential party politics.[29] In service of this effort a number of legislative measures were put into place to increase transparency, and accountability.[30] These measures, along with vigilant and methodologically robust evaluation practices helped keep the program out of political debate for the most part. This has remarkable effects for the implementation of the program. Standing independent of politics, the program was able to critically evaluate itself without having to worry about the imbalanced interests that party politics would bring. Independence characterizes Mexico's system and has aided greatly in its success.

The perception of Progresa was of great importance to its leaders. Levy describes a "three pronged" approach when it comes to program information and publicity. The government made huge amounts of information available on the internet about Progresa. The program administrators submitted detailed budgets and evaluations to congress. And to avoid too great of expecations, program advertising and outreach was kept to a minimum and grew slowly over time.[31] This strategy allowed the program to capture the public trust, and cement its

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[28] Levy, Santiago. Progress against Poverty Sustaining Mexico's Progresa-Oportunidades Program. Washington, D.C.: Brookings Institution Press, 2006.
[29] IBID
[30] IBID
[31] IBID

permanence within the political sphere. Mexico's policy is deliberately designed, federalized, and sustainable.

Brazil's Bolsa Familia is a younger program than Progresa. Bolsa Familia started in 2004 under President Lulu da Silva. Bolsa was formed by the horizontal integration of several other federal poverty relief programs: "Bolsa Escola, a minimum income grant related to primary education; *Fome Zero and Bolsa Alimentação*, two income grants related to food security; and *Vale Gás*, a subsidy to help poor households buy cooking gas."[32] It served as a centerpiece of the president's policy initiative and was a big factor in his reelection campaign in 2006. Unlike in Mexico party politics played a big role in Bolsa's creation.

The program enjoys broad public support but has also been a target of political controversy in the past. [33] It has been a hugely successful political campaign weapon. Incumbent President Dilma Yousseff got elected promising to keep benefits coming. Brazil's government however, operates in a way that has interesting implications for how policy is implemented. Brazil's government has a bi-cameral legislature made up of representatives from twenty seven states.[34] It tends to be rather factioned and tumultuous politically, with fifteen different parties vying for power. Federally administered policy often requires the cooperation of state governors and local municipalities who have considerable autonomy. This structure

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[32] Soares, Fábio, Rafael Ribas, and Rafael Osório. "Evaluating the Impacts of Brazil's Bolsa Familia: Conditional Cash Transfer Programs in Comparative Perspective." Latin American Research Review 45, no. 2 (2010): 173-90.

[33] Reel, Monte. "Cash Aid Program Bolsters Lula's Reelection Prospects; Incentives for Families To Help Themselves Spreads Beyond Brazil." *The Washington Post*, October 29, 2006. Accessed December 9, 2015.

[34] Duffy, Gary. "Family Friendly: Brazil's Scheme to Tackle Poverty." *BBC*, May 25, 2010, World News sec. Accessed December 9, 2015. http://www.bbc.com/news/10122754.

perpetuates patronage in local government and power imbalances in municipalities.[35] For Bolsa, this creates uneven coverage and monitoring from state to state.

The program is not only criticized for making poor dependent on handouts, but also making politicians dependent on defending it.[36] The programs popularity has compelled policymakers to continue it, despite inconclusive evidence of its actual success. Critics say it is used to buy votes rather than accomplish real poverty and development aims.

Policy differences which have a huge impact on the features and outcomes of the respective programs, can be traced to the differing political climates in which the two systems are implemented. In Mexico, *Oportunidades* emphasizes transparency and sets itself aside from party politics. It is perceived as an academic and economic initiative, and subsequently was set up with strict rules and close monitoring. Its focus on long term human capital goals reflects the governments commitment to its long term integrity.

Brazil's system, on the other hand, is heavily influenced by the structure of its politics, where localized implementation effects the impact and monitoring of the program on several different levels. The policy is often used as a political tool to win the influence of voters and balance party politics both locally and nationally. This is reflected in its rapid growth as well as emphasis on immediate poverty relief over long-term human capital investment, which tends to be the immediate concern for such a large country.

The history of the creation of Bolsa and Progresa tells an important story These political conditions influenced the details of the program I am about to elaborate on. But these different political

[35] Watts, Jonathan. "Brazil's Bolsa Familia Scheme: Political Tool or Social Welfare Success?" The Guardian, December 19, 2013.
[36] IBID

structures and atmospheres also certainly played a part in Mexico's focus on rigorous human capital development (efficiency) and Brazil's widespread poverty relief (equity).

## Program Design and Policy

In Mexico, conditions for receiving conditional cash transfers focus on education, health, and nutrition.[37] Levy describes in detail some of its features: (1) substitute cash income transfers for targeted food subsidies, (2) condition transfers on specific household behaviors, (3) complement nutritional health and educational benefits together, (4) adopt a life style approach to avoid long term welfare dependence, (5) introduce long term evaluation, (6) impose strict guidelines for selecting beneficiaries, (7) deliver benefits straight to users, not intermediates. An important secondary goal was reducing overhead through the horizontal integration of social assistance programs.[38] The goal of this suite of characteristics is to promote poverty relief at the same time as human capital development. Using this incentive structure puts emphasis on the conditioned factors.

In school, grants are given for attendance and enrollment. The grants require 85% monthly attendance in school for boys and girls from third grade through the end of high school.[39] The amount of the transfer increases with grade level, incentivizing kids to stay in

[37] Parker, Susan. "Case Sudy: The Oportunidades Program in Mexico." World Bank, April 20, 2003, Shanghai Poverty Conference - Scaling up Poverty Reduction sec. Accessed December 10, 2015.
[38] Levy, Santiago. Progress against Poverty Sustaining Mexico's Progresa-Oportunidades Program. Washington, D.C.: Brookings Institution Press, 2006.
[39] IBID

school.[40] Girls, who tend to have higher dropout rates, have bigger grants starting at the secondary level of schooling. According to the World Bank, "the amounts of the monthly grants range from about $10.50 (105 pesos) in the third grade of primary to about $58 (580 pesos) for boys and $66 (660 pesos) for girls in the third year of high school."[41] These rates are indexed for inflation over time. In addition to these, boys and girls receive yearly subsidies for school supplies and those who graduate high school on time receive a one-time transfer in cash.[42]

Nutritional stipends are given in cash to all households equally regardless of their demographic makeup.[43] The world bank specifies: "The nutrition component includes a fixed monetary transfer, equal to about $15.50 (155 pesos) monthly, for improved food consumption as well as nutritional supplements for children between the ages of four months and two years, malnourished children aged 2 to 4, and pregnant and lactating women."[44] Supplements and stipends are contingent upon regular visits to a health clinic.[45]

The health component focuses on preventative care.[46] When households go to clinics to get their stipend and supplements, mothers must attend a series of talks on health and nutrition. Mothers and teenagers alike must attend classes on reproductive health, and drug addiction. [47]

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[40] Parker, Susan. "Case Sudy: The Oportunidades Program in Mexico." World Bank, April 20, 2003, Shanghai Poverty Conference - Scaling up Poverty Reduction sec. Accessed December 10, 2015.
[41] IBID
[42] Levy, Santiago. Progress against Poverty Sustaining Mexico's Progresa-Oportunidades Program. Washington, D.C.: Brookings Institution Press, 2006.
[43] IBID
[44] Parker, Susan. "Case Sudy: The Oportunidades Program in Mexico." World Bank, April 20, 2003, Shanghai Poverty Conference - Scaling up Poverty Reduction sec. Accessed December 10, 2015.
[45] Levy, Santiago. Progress against Poverty Sustaining Mexico's Progresa-Oportunidades Program. Washington, D.C.: Brookings Institution Press, 2006.
[46] Parker, Susan. "Case Sudy: The Oportunidades Program in Mexico." World Bank, April 20, 2003, Shanghai Poverty Conference - Scaling up Poverty Reduction sec. Accessed December 10, 2015.
[47] Levy, Santiago. Progress against Poverty Sustaining Mexico's Progresa-Oportunidades Program. Washington, D.C.: Brookings Institution Press, 2006.

Families must also undergo a series of health tests that include, "anthropometric measurements of children, vaccinations, and early prevention and treatment of diarrhea, respiratory infections, tuberculosis, high blood pressure, diabetes, and cervical/uterine cancer."[48] The multifaceted approach to human capital development is tested by a unique evaluation system. This commitment to robust evaluation demonstrates Progresa's commitment to its human capital efficiency goals.

Progresa-Oportunidades used external evaluation to make sure the program achieved its goals. Mexico used randomized control trials (RCTSs) to measure program effectiveness. RCTs are defined by Unicef researchers as,

> "A way of doing impact evaluation in which the population receiving the programme or policy intervention is chosen at random from the eligible population, and a control group is also chosen at random from the same eligible population. It tests the extent to which specific, planned impacts are being achieved"[49]

RCTs are particularly effective because they show a strong link of causality by setting up determinants of success before the treatment is applied.[50] It offered evaluators the ability to look at the human capital gains from the program in addition to access to the programs, perceptions about the program, and cost effectiveness of delivery.[51] This methodology provided the Mexican system with robust results that let them tweak the program for the future.

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[48] IBID

[49] White, Howard, Shagun Sabarwal, and Thomas De Hoop. "Randomized Controlled Trials." In Methodological Briefs: Impact Evaluations. Vol. 7. Florence: United Nations Children's Fund (UNICEF), 2014.

[50] Rawlings, Laura B, and Gloria Rubio. "Evaluating The Impact Of Conditional Cash Transfer Programs." *The World Bank Research Observer* 20, no. 1 (2005): 29-55.

[51] Levy, Santiago. Progress against Poverty Sustaining Mexico's Progresa-Oportunidades Program. Washington, D.C.: Brookings Institution Press, 2006.

The designers of the program are particularly interested in the merits of the human capital development program. They staggered implementation of the program on a wide scale in order to run RCTs. Consistent with the goal of long term development in education and health, Mexico prioritized this experiment over widespread poverty relief.

Brazil's program does not demonstrate such a keen interest in correcting market inefficiencies, instead prioritizing redistribution on a wide scale. Soares et. all (2007) comment that since *Bolsa* is a merger of several different programs, it lacks clear goals. These authors however, describe a general perception of its purpose as two part: to alleviate the income deprivation of poor households and to break the intergenerational transmission of poverty.[52]

*Bolsa* is the world's largest CCT program, benefitting over 12 million families in 2010.[53] It now reaches 14 million households, nearly a quarter of the population.[54] The program gives monthly cash transfers to poor households with children under fifteen and pregnant women. This poverty line is set at income of R$120 (US$66) per capita. All of these households qualify for a monthly subsidy of R$ 18 (US$ 10) for each child (up to three) and pregnant woman. Extremely poor households receive monthly transfers regardless of household composition. This "extreme poverty" line sits at income of R$ 60 (US$ 33) per capita. Households classified as extremely poor qualify for the per child/pregnant woman subsidy as well as an additional

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[52] Soares, Fábio, Rafael Ribas, and Rafael Osório. "Evaluating the Impacts of Brazil's Bolsa Familia: Conditional Cash Transfer Programs in Comparative Perspective." Latin American Research Review 45, no. 2 (2010): 173-90.
[53] Duffy, Gary. "Family Friendly: Brazil's Scheme to Tackle Poverty." BBC, May 25, 2010, World News sec. Accessed December 9, 2015. http://www.bbc.com/news/10122754.
[54] "Bolsa Família: Brazil's Quiet Revolution." 2017. Text/HTML. *World Bank*. Accessed April 21. http://www.worldbank.org/en/news/opinion/2013/11/04/bolsa-familia-Brazil-quiet-revolution.

monthly transfer of R$ 58 (US$ 32).[55] The transfer amounts are indexed for inflation over time. The unconditional transfer to the extreme poor is a unique feature of *Bolsa.* It exmplifies Brazil's focus on equity and poverty relief.

Cash transfers are conditioned on two factors related to education and health, detailed by Soares et. all (2007),

> "i) Children 6-15 years old must maintain 85 per cent school attendance;
>
> ii) children up to six years old must have their immunization status confirmed and, together with pregnant women, must have regular health check-ups"[56]

Qualifying for *Bolsa* is means tested. However, this means-testing occurs at the municipal level, which means that beneficiary selection is unverified by a central body. This raises concerns over uneven selection, distortion, and leakage.[57] The monitoring and application process in Brazil is different than other CCT programs. Instead of a proxy-means test for eligibility, beneficiaries are selected based on self-declared income. The application and monitoring process is also very decentralized, and is determined by individual municipalities as the program grows.[58]

Monitoring and evaluation in *Bolsa* is also splintered. Lindert et. all identify some of the characteristics of the Brazilian system that present some particular challenges. First, rapid expansion and universal coverage, two goals of the program, preclude the use control groups. Evaluators use other innovative evaluation techniques like statistical matching. Second, evaluators must control for the effect of previous benefits and their impact under Brazil's former

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[55] Soares, Fábio, Rafael Ribas, and Rafael Osório. "Evaluating the Impacts of Brazil's Bolsa Familia: Conditional Cash Transfer Programs in Comparative Perspective." Latin American Research Review 45, no. 2 (2010): 173-90.
[56] IBID
[57] IBID
[58] IBID

four poverty relief programs, which had differing qualifications. Third, they must control for national poverty relief programs that are implemented in individual states and municipalities. And finally, heterogeneous and decentralized implementation has created dissimilar metrics, surveys, and other monitoring tools across areas.[59]

The relative difficulty of evaluation also indicates of Brazil's policy priorities. Bolsa is not designed for ease of evaluation, instead it is designed for ease of benefits, rapid growth, and widespread coverage. Mexico designed Progresa as a development experiment, primed for expansion if it proved that it could help families educate their kids and improve their health.

Mexico's evaluation and monitoring enables a more focused analysis of the human capital gains the program seeks to incentivize. This aligns with the stated goals of the program. When it comes to the two competing goals of poverty relief versus human capital investment, the Mexican model leans toward fulfilling its long-term human capital goals. The integrity of this design is of the utmost importance to the program's implementers and the features of the policy reflect this methodology. For example, transfer conditions are relatively stricter than its Brazilian counterpart and inclusion rates tend to be lower because of more careful beneficiary selection.

On the other hand, Brazil's *Bolsa Familia* grew at alarming rates to become the world's largetst CCT program. *Bolsa* tends to emphasize poverty relief over human capital investment. This is exemplified by its evaluation methodology. Its use of quasi-experimental techniques allows an extremely fast and universal expansion of the program, while limiting its ability to closely monitor human capital improvements. A less strict application processes as well, the existence of the unconditional transfer for the extreme poor, and high leakage rates exemplify this different policy emphasis. These features emphasize some of the challenges with

[59] Lindert, Kathy, Anja Linder, Jason Hobbs, and Bénédicte De La Brière. "The Nuts and Bolts of Brazil's Bolsa Família Program: Implementing Conditional Cash Transfers in a Decentralized Context." Social Protection, 2007. Accessed December 9, 2015.

implementing a unified national system of poverty relief for such a big population, and with a more fractured government system. The scale on which programs must be implemented, the time window in which they are implemented, and the political atmosphere surrounding the policy will prove to be key differences in how the different programs have fared.

## Program impacts

Mexico's population in 2015 was over 125 million people. Poverty in Mexico has stayed fairly constant over *Progresa-Oportunidades*'s tenure. According to nationally defined poverty lines, the headcount ratio of people in poverty stayed fairly constant, declining slightly from 53.6% to 52.3% from 2000 to 2012. However, significant gains have been made for the extreme poor. Using the world banks line for extreme poverty at $1.90 a day, the ratio of Mexicans in extreme poverty fell from 11% to 2.68% over that same period. It dropped alarmingly from 2000 to 2006 from over eleven percent to under four percent.[60]

But Stephen Levy, one of its creators, argues that poverty reduction is not the program's intended purpose. Instead the more important evaluations, he argue, are in the form of human capital gains. In that area, the Mexican CCT program has provided compelling evidence of positive impact.

In summarizing the results of the first RCT evaluation, the World Bank quotes one of the head evaluators:

> "The results of the evaluation of IFPRI show that after only three years, poor Mexican children living in the rural areas where Oportunidades operates have

[60] "World Development Indicators: Data." The World Bank. 2015. Accessed December 9, 2015. http://data.worldbank.org/data-catalog/world-development-indicators.

> increased their school enrollment, have more balanced diets, are receiving more medical attention, and are learning that the future can be very different from the past."[61]

After just a few years of the program, Rawlands and Rubio (2005) reported secondary school attendance for boys increased to 73% and 67% percent for girls. For boys this was a three to five percent increase. A seven to nine percent increase showed a particularly substantial impact on young girls. Household food consumption went up by ten percent, overall consumption increased by over thirteen percent, calorie intake increased by nearly 8 percent, and illness declined by nearly 5%. They also note however, some negatives. The program had much greater effects on school enrollment than attendance for eligible families. They also found that almost nine of every 100 dollars allocated to the program is lost to administrative costs.[62] Furthermore, delivery deficiencies go unaccounted for in RCT models. One statistic reported that 27% of the eligible population had not received benefits after two years.[63]

Brazil is a much larger country than Mexico, with over 200 million people. Since the inception of *Bolsa Familia*, poverty has declined in Brazil. The World Bank reports that the poverty rate according to national poverty lines dropped from 17% in 2006 to under 9% in 2013. Furthermore, the rate of extreme poverty, defined by the World Bank as $1.90 a day dropped from nearly 8% to under 5% over that same period. Declining poverty in Brazil was largely influenced by huge economic growth over that period.[64] However, politicians in Brazil frequently argue that poverty relief programs helped.

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[61] IBID

[62] Rawlings, Laura B, and Gloria Rubio. "Evaluating The Impact Of Conditional Cash Transfer Programs." *The World Bank Research Observer* 20, no. 1 (2005): 29-55.

[63] IBID

[64] "World Development Indicators: Data." The World Bank. 2015. Accessed December 9, 2015. http://data.worldbank.org/data-catalog/world-development-indicators.

Rawlings and Rubio reported, in albeit early days of the Bolsa Familia program, no real effect on current poverty levels, and no significant effect on child labor, which is a particularly urgent problem in Brazil, and an issue which conditional transfers are keen to address.[65] In terms of its human capital goals, Brazil has shown some mild progress. For food consumption, education, and child clothing, "monthly expenditures went up by R$ 23.18, R$ 2.65 and R$ 1.34, respectively"[66] However, there was a subsequent reduction in spending on adult health and clothing at rates of R$ 6.80 and R$ 0.74. Nevertheless, overall consumption of these goods went up, and beneficiaries tended to prioritize the needs of children with the cash transfers. Soares et. all (2007) found no significant positive impact of the program on school attendance. In fact they raised concerns that it increases the number of under-achieving students in class, which slows down student achievement. They also found no significant effect on immunizations and check-ups, which they suspect is partially due to supply-side obstacles. They also found no evidence of increased child nutrition for beneficiaries.[67]

An impact found in both countries has been a reduction in inequality. Inequality, measured by the GINI index, declined 4.7% in Brazil from 1994-2004 and 5% in Mexico from 1996 to 2004. Income redistribute from CCT programs could have played an important role. Another important area to look at is inclusion and coverage. The ratio of non-beneficiary poor to beneficiary poor was 70% in Mexico and 59% in Brazil. This means that a huge percentage of Bolsa beneficiaries fall below the poverty line. Leakages and gaps in coverage are more of a problem in Brazil, where almost half of beneficiaries are non-poor compared to 36% in Mexico.[68]

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[65] Rawlings, Laura B, and Gloria Rubio. "Evaluating The Impact Of Conditional Cash Transfer Programs." *The World Bank Research Observer* 20, no. 1 (2005): 29-55.

[66] Soares, Fábio, Rafael Ribas, and Rafael Osório. "Evaluating the Impacts of Brazil's Bolsa Familia: Conditional Cash Transfer Programs in Comparative Perspective." Latin American Research Review 45, no. 2 (2010): 173-90.

[67] IBID

[68] IBID

Brazil and Mexico demonstrate differing impact results when looking at this short term evaluations. In general, Mexico tended to perform better on human capital related conditioning goals. These are objectives like education, health, and nutrition. However, Brazil saw greater reductions in overall poverty. These results reflect a common thread – the balance between the efficiency and equity goals. Mexico made efficiency its priority from the beginning. The program goals, methodologies, and specific policies emphasize the importance of the human capital side of the CCT. Brazil's Bolsa focused on equity in the form of a widespread redistributive policy. As a result they've seen larger headline changes in income, and less advancement in human capital.

## Discussion

Brazil, larger by population and geographically, created a more decentralized program. It also created a program more focused on widespread relief as opposed to human capital development. Mexico used a nationalized program because they valued the ability to evaluate the program over time and prioritized developing human capital among the needy as opposed to wide poverty relief.

Program impacts, methodology, and features reflect distinctly different sociopolitical climates surrounding poverty relief in the two countries. As a result Mexico focuses on correcting inefficiencies The programs, often thought of as closely related, are in practice used for different purposes: one to correct market failures and the other to create greater equality of income.

CCT programs are changing the way the world looks at poverty relief. Mexico's example provides a refreshing new look at poverty relief, one that was carefully designed in service of long term sustainability, adaptability, and sound principles. This original intent, however, is

distorted when the CCT model is implemented in different political and social environments. Brazil presents an excellent example of how differing political structures, values, and immediate goals change the fashion in which policy is implemented across national boundaries. These fundamental differences make it impossible to directly apply policy to a new environment.

However, CCT programs make an important step in recognition on of this problem. Fundamental to the CCT model is a commitment to monitoring and assessment, a process that allows policy to adapt to new conditions. CCT programs may not bring a global revolution in poverty relief. Instead CCT's legacy might lie in its advocacy for recognition of comparative differences, and a necessity for careful design and assessment in creating good policy for the future.

## Analysis - Part Two

Rural poverty also remains a significant issue in Mexico. Rapid urbanization has helped reduce poverty, but incredible numbers of Mexicans still live in poverty all over the country. These challenges are particularly steep in rural areas. The economist reports that nearly fifty percent of the population still lives in poverty, and another quarter is at risk of slipping back into poverty as of 2015.[69] Rural poor in Mexico spend half of their budget on food alone. Rural poor lack access to the institutions, services and opportunities that could contribute to their economic mobility. Globalization has affected a minority of city dwellers and made their lives a whole lot better, but a majority of Mexicans remain stuck by slow growth – a rate of only 1% since the passing of NAFTA in 1994.[70]

Academic literature has evaluated Mexico's Progresa program, but few have focused on regional effects. The following quantitative analysis will test the effect of the cash transfer on educational attainment, comparing the impact between rural and urban environments. *Progresa's* randomized control trials were the first of their kind used on a large scale government program. Evaluations have several purposes, as Rawlings and Rubio describe: (1) evaluating administrative adequacy, (2) measuring access of poor households, (3) the presence and size of impacts, (4) beneficiaries perceptions about the program, and (5) the cost-effectiveness of delivery mechanisms. Most data is collected through census data and

[69] "The Two Mexicos." The Economist. 2015. Accessed December 08, 2016. http://www.economist.com/news/leaders/21665027-its-combination-modernity-and-poverty-mexico-provides-lessons-all-emerging.
[70] IBID

households surveys, though different programs have implemented different evaluations.[71] Mexico's is administered through the ENCEL survey.

I examine data from an ENCEL survey randomized control trial for two purposes. First, it gives me the opportunity to recreate the type of quantitative analysis that policymakers often rely on to adopt and change policy. Secondly, it gives me the opportunity to reflect on two of my key research questions, first, how are poverty relief programs like CCTs are evaluated? And secondly, how might the impact of poverty relief programs change with geography and different levels of urbanization?

## Data and Methods

The data comes from four externally administered household surveys evaluating *Progresa* program impacts between 2007 and 2009. Specifically, these study the effects of *Progresa* on rural and urban households. I match survey results from two children's surveys and two household surveys by using the household identification numbers.

There are two rural and two urban surveys. For each pair, one measures household level data and provides most of the socioeconomic information that are necessary controls for the regression. This survey contains our variable of interest – whether or not the household currently receives a Progresa payment.

The second survey is a survey of young people and this contains our outcome – whether or not children will be attending school in the next year. The survey only includes data from the first child listed in the survey in order to be able to pair observations between two different

[71] Rawlings, Laura B., and Gloria M. Rubio. 2005. "Evaluating the Impact of Conditional Cash Transfer Programs." *The World Bank Research Observer* 20 (1): 29–55. doi:10.1093/wbro/lki001.

surveys. The two most important variables in the model are dummy variables with a value of one indicating yes and a value of 0 indicating no. The first is our independent variable (cct), which is a yes or no answer to the survey question “did this household receive a progresa transfer in the past 12 months?” The independent variable is a dummy as well, and is the answer to a question from the young person’s survey “are you attending school next year?” In the rural survey, the question differs slightly “are you continuing your education”

The data includes over 5,000 children in both urban and rural environments. On the whole, 80 percent of rural households and 60 percent of urban households in the dataset receive Progresa transfers and 90 percent of rural students and 40 percent of urban students plan to continue school.

The model will also control for several other factors including household consumption, a per capita measure of how much a household consumes in a year; the size of the household, defined by a series of dummy variables (low 1-5 persons, mid 5-10 persons, big 10+ persons); literacy, a dummy for whether or not the child can read and write; grade level, a series of dummy variables for primary, secondary, high school, or beyond; and finally work, demined by whether or not a child has contributed to household income in the past 12 months. Individual data comes from the young people survey and household data comes from the household survey.

I ran several regressions to see if rural and urban household CCT transfers affect whether or not children go to school. I then compare the results of these two regressions to make claims about where Progresa-Oportunidades has been most effective and where the focus should be in the future.

## Results

Econometric Model:

$$attend_i = \beta_0 + \beta_1 cct_i + \beta_2 sizemid_i + \beta_3 sizebig_i + \beta_4 consumption_i + \beta_5 literacy_i + \beta_6 secondaryschool_i + \beta_7 highschool_i + \beta_8 graduated_i + \beta_9 work_i + \beta_{10} workmissing_i + \varepsilon_i$$

The dependent variable is binary – whether or not the child will be attending school in the following year. As a result the model will be run as a linear probability model, a probit, and a logit model to identify the best fit. Because of similar results across models, my selected identification strategy was a linear probability model because of the ease of interpretation on coefficients. (see probit and logit regression tables in Appendix one).

I hypothesized that households that receive Oportunidades transfers (CCT) will have a higher probability of attending school in the following year. I expected the marginal effect on the variable of interest to be positive for both rural and urban households. I also hypothesized that rural households will show a lesser increase in probablility. A number of factors would weigh into this decision. First, rural areas experience a number of barriers to attendance including distance and transportation to schools, school quality differences, and higher incentives and returns to students dropping out and working to support families (particularly in agriculture based communities). Therefore the marginal effect of the transfer on the likelihood that a child goes to school will be lower. The coefficients on the effect of CCT on attendance are as follows:

| VARIABLE | RURAL | | | URBAN | | |
|---|---|---|---|---|---|---|
| ATTENDING SCHOOL NEXT YEAR? | Coef. | Std. Err. | obs | Coef. | Std. Err. | obs |
| RECEIVING A CCT? | -0.00209 | (0.01134) | 5,655 | 0.003973 | (0.009594) | 5,626 |
| MID SIZED HOUSEHOLD | -2.76E-02* | (0.009307) | 5,655 | -7.50E-06 | (1.78E-05) | 5,626 |
| LARGE HOUSEHOLD | -0.04809** | (0.014081) | 5,655 | 0.006399 | (0.010141) | 5,626 |
| CONSUMPTION PER CAPITA | -6.40E-07 | (8.49E-06) | 5,655 | -0.006 | (0.024784) | 5,626 |
| LITERATE? | 0.02802 | (0.069423) | 5,655 | 0.117825** | (0.0209) | 5,626 |
| SECONDARY SCHOOL | 0.0461** | (0.014054) | 5,655 | 0.108387** | (0.0305) | 5,626 |
| HIGH SCHOOL | 0.063269** | (0.015245) | 5,655 | 0.034002 | (0.031704) | 5,626 |
| GRADUATED | 0.112988** | (0.018527) | 5,655 | -0.49895** | (0.030768) | 5,626 |
| WORKING | -0.00705** | (0.01122) | 5,655 | -0.07678** | (0.016934) | 5,626 |
| WORK MISSING | 0.099487** | (0.008252) | 5,655 | -0.23908** | (0.013083) | 5,626 |
| _CONS | 0.845207 | (0.07166) | 5,655 | 0.66499 | (0.036999) | 5,626 |

Robust standard errors reported in parentheses. Significance at the 5% level indicated with *. Significance at the 1% level indicated with **.

Primary school level is omitted. Small size household is omitted. Not going to work is omitted.

## Analysis

According to model children in rural households that have received Oportunidades payments in the past twelve months are -.2 percentage points less likely to continue attend school. Children in urban households that have received Oportunidades payments in the past twelve months are .3 percentage points more likely to attend school the following year.[72]

[72] An important note here – the data on household CCT transfers does not specify the type of transfer, nor does it specify that is the educational conditional cash transfer. Therefore, this statistic measures whether or not the household, generally, being a program participant has a positive effect on attendance rates

$$\beta_1(ruralcct) = -.00209$$

$$\beta_1(urbancct) = .003973$$

The hypothesis test on our coefficient of interest, proves insignificant in both rural and urban environments, with p values of .854 and .679 respectively, less than the threshold for statistical significance at five percent (.05). Thus I would fail to reject a null hypothesis that receiving a CCT transfer would make children more likely to continue to attend school in the future. I would also reject the hypothesis that there is a statistically higher impact of the transfer on attendance rates in urban environments vs. rural environments.

Some other important coefficients to look at are significant effects of larger family size, grade level, and whether or not the child works in both rural and urban regressions. Students that work are less likely to feel the effect of the transfer on attendance, and children in larger households are similarly negatively impacted. The regression also confirms a finding of some previous literature (Rawlings and Rubio 2005) that the level of schooling is greatly important to the success of the transfer. Relative to primary school, families who receive transfers while their children are in secondary, and high schools see greater increases in the likelihood that they continue school.

The insignificant results in both regressions indicate some of the model's limitations. This model may suffer from omitted variable bias. One key variable that may be omitted could be gender. The survey data did not include gender for children. This omission could affect the outcome because school attendance rates may differ between gender. Child gender could be correlated with a family's choice to opt into the program or not. If a child's gender affects likely they are to drop out to work in a family business or help around the house then my results will be biased. For example, if females are more likely to drop out to go to work or help at home, the gender makeup of offspring might change a family's decision to accept the transfer. As a result

the model would be underestimating the effect because of the negative correlation with both the outcome and the explanatory variable.

In addition, results change with the addition of more data from all children in household. When regressing only the first child in a matched household, urban centers showed statistically significant results (See appendix two). When matching all household children to their household CCT data, the statistical significance vanishes, perhaps indicating that the program is effective for the first child in each household, but not subsequent children.

There are some structural program aspects that I believe better explain the problems in the data. First is program expansion. The data in this study comes from 2007-2009, nearly a decade after the program's original inception. During that time the program has grown substantially. The program now covers a huge number of poor households in Mexico and 25% of the total population.[73] With the expansion of the program, comparisons using randomized controlled trials become more difficult because those most in need are already covered. That huge proportion of the population means that there are fewer eligible households with similar household characteristics to compare CCT households to. And, as the program is unrolled, the more and more poor households are covered, followed by households closer to the middle class. So, additional households in the program might have decreasing returns for educational impact because they were already more likely to go to school. Furthermore, with such a large program, households not included in the original program might have already felt the positive externalities from more of their peers in school. Then, when they are included in the program, the relative impact of the transfer will be less.

This might explain why significant results were found in earlier studies like Berman, Parker, Todd, and others who published in 2004. The newer data includes program expansion

[73] "A Model from Mexico for the World." 2017. Text/HTML. *World Bank*. Accessed April 21. http://www.worldbank.org/en/news/feature/2014/11/19/un-modelo-de-mexico-para-el-mundo.

that has changed the nature of evaluation. The paradox being that they expanded the program because early evaluations showed such positive results. But it may be the case that the bigger the program, the less of a marginal impact.

Another explanation is that, simply, the program, now greatly expanded, is not significantly effective anymore. Perhaps the conditional cash transfer system works for specific communities in dire need, but not on a broad national level. Progresa has evolved from a targeted intervention to a widespread redistributive poverty relief policy. And much of the program's expansion is due to its success in small trials.

## Discussion

These results differ from those in prior literature – but a key difference lies in the time at which the data was collected. Behrman, Parker, and Todd found significant results of Oportunidades transfers on children's enrollment five years after the program's inception. They stratify results by grade level and gender, but find similarly significant results for both adolescent girls and boys, showing percent increases in schooling from two to seven percent depending on grade level. There are some key differences between this study and the above. First is the distinction between girls and boys, an important piece of data that was not available in the dataset used above, and a possible sources of bias in my regression. The program demonstrated disproportionate positive impacts on students entering secondary school, a result that the above model does not confirm, as none of the coefficients on secondary school were significant.

Attansio, Meghir, and Santiago also find significant results of Progresa grants. Their difference estimate of the impact of Progresa on school enrollment demonstrates significant impacts across multiple age levels. They look at data from the first years of the program, and

find that the program becomes more effective with increases in age, particularly around the transition from primary to secondary school. Their results are significant at the 5% level for ages 10-16. Again, a difference between this study and the results above is the division by gender. These particular results were only for boys. Nevertheless they show a similar trend of positive program impact.

Because of the limitations of my data analysis toolkit, weaker data, and a changing landscape of poverty relief in Mexico I cannot offer a robust conclusion to some of the questions I hoped to. Because of program expansion, it is difficult to tell if the program maintained its effectiveness over the long term and if it remains effective even when expanded. Further than that, it's hard to tell whether an increase in school attendance will actualy create human capital growth.

## Conclusion

I have examined the Conditional Cash Transfer from a number of different angles – discussing its political proliferation across borders, the institutional structures in which it has developed and evolved, public response to the program, revisions of the program, and academic research into the effectiveness of the program.

I examined how federal control, centralized administration, and a top down approach created Progresa – a system dedicated to correcting market iniefficiencies by incentivizing human capital development. I showed how popularity, political transitions, and fractured administration created a Brazilian program that prioritizes sweeping cash benefits over health and education requirements. But I also learned how policy can converge and diverge across borders to solve similar problems. Finally I explored how policymakers evaluate poverty relief

policies, a process that revealed the considerable difficulty of finding good data and the necessity of intentional program design to get good evaluation results.

Ultimately, I believe the CCT is a step in the right direction when it comes to development policy. I am encouraged by its inception – brought to the table by practical policymakers within the country to outline a development strategy. The evolution of the CCT represents an active effort on the part of developing governments to fight poverty, incentivize their human capital institutions to improve their services, and build a culture that values health and education for all its citizens. They monitor their own progress and shape themselves to best fit the needs of policymakers and constituents. It also represents a noble goal for developing countries looking to create more stable, better educated, and stronger communities through the power of education and better health. Programs like the CCT consider these factors intelligently to drive social and cultural change and improve lives.

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# Appendices

## Appendix 1:

Marginal Effects for Probit (left) and Logit (right) in Rural Survey

| | dy/dx | Delta-method Std. Err. |
|---|---|---|
| cct | -.0023027 | .0120439 |
| sizemid | -.0299372 | .0106216 |
| sizebig | -.0478779 | .0136999 |
| conspcap | -4.91e-07 | 9.20e-06 |
| literacy | .02076 | .0543044 |
| secondary | .0396317 | .0112508 |
| highsch | .0574693 | .0134199 |
| grad | .132097 | .0296702 |
| work | -.0066588 | .0107152 |
| workmissing | 0 | (omitted) |

| | dy/dx | Delta-method Std. Err. |
|---|---|---|
| cct | -.0026069 | .0122001 |
| sizemid | -.0308405 | .0110083 |
| sizebig | -.0488428 | .0137912 |
| conspcap | -7.47e-07 | 9.44e-06 |
| literacy | .0219114 | .0512993 |
| secondary | .0382839 | .0108082 |
| highsch | .0568209 | .0132583 |
| grad | .1397665 | .0340448 |
| work | -.006775 | .0106719 |
| workmissing | 0 | (omitted) |

** the coefficients on the probit and logit models do not differ significantly from the linear probability model

Marginal Effects for Probit (left) and Logit (right) in urban survey

| | dy/dx | Delta-method Std. Err. |
|---|---|---|
| cct | .0057572 | .0095581 |
| conspcap | -.000013 | .0000177 |
| sizemid | .0066905 | .0100777 |
| sizebig | -.0122374 | .0250389 |
| literacy | .2027312 | .0424605 |
| secondary | .08094 | .0226427 |
| highsch | .0218367 | .0229959 |
| grad | -.3421695 | .0211582 |
| work | -.060868 | .014226 |
| workmissing | -.1995214 | .0094831 |

| | dy/dx | Delta-method Std. Err. |
|---|---|---|
| cct | .0054545 | .0095166 |
| conspcap | -9.49e-06 | .0000178 |
| sizemid | .0065331 | .0100038 |
| sizebig | -.0079414 | .0247801 |
| literacy | .183322 | .0422918 |
| secondary | .0768526 | .0217574 |
| highsch | .0194259 | .021923 |
| grad | -.3239025 | .0200255 |
| work | -.0575747 | .0140661 |
| workmissing | -.1982559 | .009183 |

** all our marginal effects remain insignificant with the probit and logit models

## Appendix 2:

Urban household regression using only the first child from each household

| | (1) Linear Probability | (2) Probit | (3) Logit | (4) Linear Interaction |
|---|---|---|---|---|
| VARIABLES | Attend | Attend | Attend | Attend |
| CCT | 0.0407*** | 0.192*** | 0.319*** | .00354 |
| | (0.0142) | (0.0640) | (0.115) | (.0211) |
| Marg effects | 0.0407*** | 0.0419*** | 0.0386*** | .0417*** |
| | (0.0142) | (.01399) | (0.014) | (.0141) |
| Conspcap | -5.66e-06 | -2.60e-05 | -6.01e-05 | -9.39e-06 |
| | (3.60e-05) | (0.000136) | (0.000296) | (3.61e-05) |
| Sizemid | -0.0360** | -0.166*** | -0.290** | -0.0809*** |
| | (0.0145) | (0.0639) | (0.117) | (0.0245) |
| Sizebig | -0.0883** | -0.381** | -0.715** | -0.196*** |
| | (0.0355) | (0.174) | (0.314) | (0.0420) |
| Literacy | 0.165*** | 1.483*** | 2.521*** | 0.162*** |
| | (0.0278) | (0.378) | (0.744) | (0.0284) |
| Secondary | 0.0527 | 0.173 | 0.321 | 0.0540 |
| | (0.0464) | (0.176) | (0.309) | (0.0466) |
| Highsch | -0.0373 | -0.166 | -0.269 | -0.0361 |
| | (0.0476) | (0.175) | (0.304) | (0.0478) |
| Grad | -0.527*** | -1.652*** | -2.804*** | -0.525*** |
| | (0.0470) | (0.172) | (0.300) | (0.0472) |
| Work | -0.0617*** | -0.210** | -0.346** | -0.0623*** |
| | (0.0233) | (0.0875) | (0.153) | (0.0233) |
| Workmissing | -0.263*** | -0.977*** | -1.746*** | -0.265*** |
| | (0.0186) | (0.0651) | (0.117) | (0.0186) |
| Sizemid X CCT | | | | .0666** |

| | | | | |
|---|---|---|---|---|
| | | | | (.0285) |
| Sizebig X CCT | | | | .1642***<br>(.0614) |
| Constant | 0.680***<br>(0.0552) | -0.359<br>(0.411) | -0.602<br>(0.799) | 0.708***<br>0.0567 |
| **F-Statistics and P-Values on Hypotheses** | | | | |
| CCT ($\beta_1 \neq 0$) | 0.004*** | 0.003*** | 0.006*** | 0.003*** |
| Size F test<br>($\beta_4, \beta_5 \neq 0$) | -- | -- | -- | F=5.04<br>p=.0065*** |
| Adjusted $R^2$ | 0.5009 | -- | -- | 0.5021 |
| Sensitivity | -- | 80% | 79.52% | -- |
| Specificity | | 85.72% | 86.46% | -- |
| Correctly Classified | -- | 83.25% | 83.45% | -- |
| Observations | 2,877 | 2,877 | 2,877 | 2,877 |