Do CCT Programs (Really) Reduce Mortality: 10 Year Evidence from Mexico*

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Abstract

Early work on the impacts of the pioneering program Progresa suggested large, short-term effects of the program to reduce mortality of older adults in Mexico. We re-examine the effects of Progresa on elderly mortality rates after 10 years and find little evidence of lasting impacts of the Progresa program in reducing elderly mortality. We employ difference-in-differences models that exploit geographic variation in program expansion to estimate effects, focusing on high-poverty municipalities. We argue these results may not be surprising. Aging individuals were not generally the recipients in conditional cash transfer programs and the benefits provided were largely conditioned to school enrollment of children in the household. Health conditionalities required aging individuals to attend health clinics only once per year, a relatively minimal requirement. We re-analyze prior evidence suggesting large negative short-term impacts on mortality, and find that these results are somewhat sensitive, becoming smaller and/or insignificant with relatively minor changes in the specification. Combined with our own estimates, we conclude there is little evidence that Progresa reduced aging mortality during its first 10 years of operation.

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*This version: February 2026. The opinions expressed in this paper are those of the authors and do not necessarily reflect the views of the Inter-American Development Bank, its Board of Directors, or the countries they represent, nor of INEGI. All remaining errors are our own. All data used in this study are publicly available from INEGI.

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1 Introduction

Research on the mortality effects of income-support social insurance programs for older adults has generated conflicting results. Some studies suggest important health benefits, others find no effects, and still others find unintended adverse effects potentially linked to pathways such as increased obesity. Furthermore, most evidence has focused predominantly on short-run effects rather than net long-run mortality effects.

Mexico offers an important opportunity to study the longer-term effects of social insurance programs on aging mortality. The Progresa conditional cash transfer (CCT) program, which began in 1997, was renamed Oportunidades in 2001 under the Fox administration, and then renamed as Prospera in 2007 under the Calderon administration. Progresa has drawn considerable attention from researchers and policymakers (Levy and Schady, 2013), and has served as a model for similar programs in more than 60 countries (Baird et al., 2014; Fiszbein and Schady, 2009; Parker and Todd, 2017). There are numerous studies on the short-term health effects of Progresa (Gertler, 2004; Lagarde and Palmer, 2009; Parker and Todd, 2017; Rivera-Hernandez et al., 2016), but little evidence on its long-term effects (Parker and Todd, 2017).

Furthermore, although conditional cash transfer (CCT) programs are widespread, there is remarkably little evidence regarding their effects on well-being and health of older adults. Much research has emphasized the conditionality of transfers tied to children's school attendance; other research has focused on the component of Mexico's conditional cash transfer linked to health clinic attendance for maternal and child healthcare, but few studies have examined healthcare effects among older adults. We are aware of only two studies of health effects in CCT programs among the aging population. One study found that, two years after implementation, the Mexican CCT led to an average 4% reduction in municipal-level mortality rates for those over age 65, primarily due to decreases in infectious diseases but also in diabetes-related death (Barham and Rowberry, 2013). The other study suggested that health utilization outcomes improved for female elderly, but not the male elderly six years after program implementation (Behrman and Parker, 2013). Previous research on non-contributory pensions or unconditional cash transfer programs (UCT) has also shown similarly mixed results. In Mexico, the UCT led to improved mental health 12 months after introduction (Galiani et al., 2016; Salinas-Rodríguez et al., 2014), but greater mortality from cardiovascular and circulatory diseases was explained by changes in diet, increased in body mass index, and hypertension among recipients. In Yucatan of Mexico, the UCT improved verbal recall and lung function and reduced anemia six months after introduction (Aguila et al.,

2015). In South Africa, one study found that a UCT improved self-reported health (Case, 2004), while another found it increased hypertension awareness but did not affect self-reported health or quality of life (Lloyd-Sherlock and Agrawal, 2014). Research in the United States has found that the supplementary security income (SSI) program positively affected elderly recipients' health in the short run (Taubman and Sickles, 1983), but long-term effects are not well understood.[1]

Mexico has high poverty rates, particularly among the elderly. According to the OECD, 24.7% of Mexican adults aged 66 or older had less than half the median household income, partly due to the lack of universal coverage of the social security system (Angel et al., 2017). Furthermore, in 2017, Mexico ranked highest worldwide in the proportion of the population that is overweight and second highest in obesity prevalence, just below the United States (OECD, 2017). Miranda and colleagues found that the proportion of Mexican women who are overweight doubled from 1988 to 2012 and for men increased nearly 10 percentage points from 2000 to 2012 (Miranda et al., 2016). This is especially relevant given that the income transfers from the CCT (Progresa) may have unintentionally increased adult obesity (Fernald et al., 2008; Kronebusch and Damon, 2019).

In this paper, we analyze the effects of Progresa on older adults overall and by sex. Income-support programs may impact mortality through a variety of mechanisms. These include improved financial access to healthcare, especially in a context where many recipients were uninsured in the early years when most program expansions occurred. Increased cash may also affect non-medical pathways such as food consumption, potentially improving health among undernourished older adults, but it could also increase obesogenic food intake in a context marked by rapidly increasing obesity. Indeed, some evidence suggested that Progresa participation was associated with adult obesity (Fernald et al., 2008), while other evidence found that higher cumulative Progresa cash transfers led to worse adult obesity (Fernald et al., 2008). Other mechanisms that might improve mortality outcomes include the conditionalities that promote regular health checkups, leading to better health behaviors and lower mortality. The distribution of resources and bargaining power to women may result in a greater emphasis on using available resources for health and nutrition than other uses. Given this conflicting evidence on mechanisms, and the potential for short-run versus long-run effects, evidence on the time-path of mortality impacts is particularly valuable.

We combine nearly twenty years of nationwide vital statistics on mortality and administrative records on Progresa receipt at the municipality level to estimate difference-in-difference models

[1] A recent survey (Richterman et al., 2023) on the effect of cash transfers on child and elderly mortality notes as follows: "Adults over the age of 60 made up only 1 of our adult dataset. Our findings may therefore not apply to these older age groups."

of the impacts on mortality. INEGI, Mexico's statistical bureau, maintains individual-level vital statistics with detailed information on place of death and residence at the time of death, as well as health insurance coverage at the time of death. These variables allow us to link administrative data on Progresa receipt to the municipality of residence of the deceased.

1.1 Mexico's *Progresa* Conditional Cash Transfer Program

The key feature of Progresa, which began in small rural communities in 1997, is providing monetary transfers to poor families. Some transfers are conditional on children attending school, while others require family members to visit health clinics. Progresa quickly expanded to cover six million families, which is one-fourth of all families in Mexico. Although the program expanded into urban areas, it remained largely rural, with two-thirds of its household beneficiaries living in communities with fewer than 2,500 inhabitants. The average family in Progresa received about MXN $800 (US $90.20 PPP) monthly, which increased household income by more than 25% for many poor households. The program is means-tested, with both geographic and household-level targeting and all grants are given to the female head of the family.

The original program included two main types of grants: those linked to school attendance of children under 22 years of age in the household, and those linked to health and nutrition. The healthcare and nutritional component provides basic health care for all family members, with an emphasis on preventive health care. These services are provided by Mexican public health institutions, including the Ministry of Health and the Mexican Social Security Institute. To receive the fixed health and nutrition transfer, all members of beneficiary families must adhere to a regular schedule of health clinic visits. The calendar of visits varies by the age and sex of each individual, with visits required once per year for adults aged 17 and older, including the aging. Designated beneficiaries, generally mothers, are also required to attend monthly talks at the clinics on topics such as nutrition, hygiene, infectious diseases, immunization, family planning, and the detection and prevention of chronic diseases. In 2006, a pension for the elderly was added to the program, providing a monthly payment to each adult aged 70 or older who is part of a Progresa family.

The majority of elderly individuals in rural households eligible for Progresa live in extended families (Behrman and Parker, 2013). Before the program, about 75% of elderly individuals lived in households with children under the age of 15. In most cases, the elderly individuals are the grandparents of children receiving Progresa educational grants and thus would not directly control its expenditures but still may benefit. In a minority of households where elderly individuals live on

their own, the female elderly would likely be the direct recipient of the Progresa transfers.

The effects of the program on health may differ depending on whether the recipient of the transfer is an elderly member or a daughter/daughter-in-law (or another female member). Households where the elderly individuals live with children eligible to receive educational subsidies are likely to receive higher total transfers from PROGRESA/Oportunidades because these households are eligible for both payments conditional on health clinic visits and payments conditional on school enrollment and attendance. Additionally, who receives the transfer (the elderly person or a younger female) may affect how the expenditure is distributed, impacting the health of the elderly (Behrman and Parker, 2013).

We study data up until 2006 because after that, a new component of Progresa was implemented, which provided pension transfers directly to the elderly, fundamentally changing the benefits of the program for the aging. We concentrate only on the program during its first 10 years of operation in order to retain comparability and to estimate the impacts of the conditional cash transfer program rather than the conditional cash transfer program plus the pension for the aging.

1.2 Recent Trends in Over 65 Mortality in Mexico

Figure 1 shows trends in mortality for adults aged 65 and over overall and by sex in non-marginalized (non-poor) and marginalized (poor) areas from 1990 to 2016. In both areas, elderly mortality has been decreasing over time and is slightly higher in non-marginalized areas than marginalized areas. Differences over time in aggregate mortality between marginalized and non-marginalized areas might reflect selective migration, where less healthy individuals migrate to urban areas, for instance, in search of additional health care facilities. However, Beltrán-Sánchez and Wong (2025), using panel data from the Mexican Health and Aging Survey (MHAS) show that mortality by 2015 for those living in rural areas in 2001 (¡2500) is significantly less than those living in more urban areas in 2001, suggesting selective migration does not explain mortality being higher in less urban areas.[2]

[2] Barham and Rowberry (2013) also showed that elderly mortality was lower in Progresa municipalities than for Mexico as a whole (using raw vital statistics for the period 1992-2002).

2 Data and Methodology

2.1 Data Sources

Mortality Data We use individual-level death registries derived from death certificates. These data provide each individual's cause of death, birth year, and sex. It comprises every death in the country between 1992 and 2016, with over three million records. Furthermore, the records include the municipality where the deceased resided, which we use to link to population denominators and program variables. All data is publicly available from the Mexican National Institute of Statistics and Geography (INEGI). INEGI is the national statistical agency and responsible for population censuses, collection of vital statistics, and a host of national surveys.[3]

The expansion of Mexico's public health insurance program, *Seguro Popular*, which continued to grow throughout the roll-out of *Progresa*, may have improved the accuracy of death reporting by reducing financial barriers. This could have led to more accurate and timely documentation of deaths and their causes.[4] To mitigate bias from changes in vital statistics we control for the *Seguro Popular* eligibility of a specific locality given the municipality's rollout, which addresses improvements in death registration during the period of our study.

Population and Household Data We use INEGI population counts disaggregated by sex, municipality, and age estimated from census data (1990, 2000, 2005, 2010, 2020), which are also publicly available in INEGI. These data are used to estimate population exposure and are combined with our deaths records at the municipality level for each age group. To construct annual estimates, we linearly interpolate population counts for each sex and age group cell at the municipality level between 1990 and 2006. Similar information was drawn and interpolated on the number of households at the municipality level.

Progresa Administrative Data To compute our treatment variable, we used the number of enrolled households in *Progresa* by year and by municipality, provided by *Progresa* administrative personnel.

[3] It derives mortality data from a certification system provided by the Mexican Ministry of Public Health. Data quality is a crucial concern when using the vital statistics registry. and Mexico generally maintains high-quality vital statistics (Mahapatra et al., 2007; Mikkelsen et al., 2015)

[4] *Seguro Popular* was introduced in 2002 in select municipalities and expanded in a quasi-random manner across Mexico, reaching full municipal coverage by 2006. However, significant portions of the eligible population remained uninsured, prompting continued enrollment efforts in subsequent years.

Income and Expenditure Data We use the Mexican National Survey of Household Income and Expenditure (ENIGH) from 1992 to 2006. The survey provides a comprehensive overview of household income and expenditure by amount, source, and category; as well as occupational and sociodemographic characteristics, and housing infrastructure and household equipment. Specifically, we use detailed information on individual trimestral income sources (such as wages, independent business earnings, and transfers) and household trimestral spending on food and health, transportation, education, and clothing. Likewise, it has detailed information on household savings and individual non-monetary sources of income. All surveys are publicly available from INEGI.

Additional Controls We also used a municipality-level poverty index, the Margination Index in 1990, constructed by the Mexican Population Council (CONAPO), and interpolated for the years when the data were not available. The Margination Index classified all Mexican municipalities into 5 categories ranging from very low poverty to very high poverty, based on variables such as proportion of households with dirt floors and individual socioeconomic indicators.[5] Second, as previously mentioned, we incorporate administrative data on *Seguro Popular* beneficiaries to include an intensity variable at the municipality level to address coverage by this low-income health insurance program.[6] Finally, we include the locality-level marginality index from the Mexican National Population Council, which serves as a proxy for poverty and socioeconomic conditions.

2.2 Sample Construction and Descriptive Statistics

Our sample is restricted to deaths among individuals aged 65 and older for the mortality data to capture the program's effects. Then, we construct cells representing the number of deaths at the municipality level for each age and year. We combine these data with the population and household counts and the aforementioned time-varying municipality controls. Our sample of analyses focused on marginalized municipalities (high and very high poverty) identified as eligible by Progresa in 1997.

Table 1 reports summary statistics of marginalized and non-marginalized municipalities in Mexico pre-program as well as the proportion of municipalities with Progresa beneficiaries. As the table demonstrates, marginalized municipalities have much poorer living conditions and as expected, a much higher rate of enrollment in Progresa.

[5]The Margination Index was based on the share living in communities with less than 5000 inhabitants, the share earning less than twice the minimum wage, the share illiterate, and the shares with less than primary school, without a toilet, without electricity, without running water, with crowding, and with a dirt floor.

[6]*Seguro Popular* began a staggered rollout in 2002 at the municipal level.

Following the mortality results, we present analyses from the ENIGH household survey data to explore mechanisms that could help illuminate the mortality findings. Specifically, we use the all survey waves available between 1992 and 2006 to examine income and expenditure behaviors, providing three waves before and seven after the start of the *Progresa* program.[7] From these, we create a harmonized repeated cross-sectional dataset at the individual level, selecting adults ages 65 and above. We define three main income outcomes: individual earnings from wages, total household income, and *Progresa* transfer income. Expenditures in the ENIGH are only measured at the household level; thus, we define total household spending, food consumption, and health spending (drugs and medical services). We also define specific categories such as cereals (grain, corn, and starches), meat and dairy, and sugar-related food (pastries, sugars, soft drinks, etc.) to test whether the cash transfer affects consumption of obesogenic foods rich in processed carbohydrates, starches, sugars, and fats. Additionally, we define alcohol and tobacco consumption as these are major risk factors for CVD and CVD-related mortality. From the individual occupation and sociodemographic characteristics, we identify each household member's employment status, and weekly hours worked. All income and expenditure monetary outcomes are converted to monthly values, updated to 2025 Mexican pesos, and then converted to U.S. dollars for comparability.[8]

2.3 Methods

We use a difference in difference estimation strategy, using variation in the proportion of households benefiting from Progresa across municipalities, before and after Progresa began. Following Parker and Vogl (2023), we estimate impacts by comparing beneficiaries incorporated in the early (first) phase of Progresa 1997-1999 with those incorporated in the later, (second) 2000-2005 phase. The earlier phase corresponds to municipalities that enrolled households more intensively under Zedillo (1997–9) versus the later phase corresponds to those that enrolled households more intensively under Fox (2000–5). After 2005, the pattern of enrollment in Progresa changed substantially, moving towards more urban areas.

The key explanatory variable of interest is the municipal proportion of household beneficiaries of Progresa incorporated into the program in the first phase between 1997 and 1999 interacted with a dummy measuring before and after Progresa implementation. We control also for a similar interaction with the proportion incorporated in 2000-2005. Our estimates, therefore, reflect the impacts

[7] The survey is available every two years in the period of analysis, except for an additional survey in 2005.

[8] All yearly consumer price index and exchange rates used are publicly available from the Bank of Mexico webpage.

of being offered the program earlier during the first phase versus during the second phase of the program. Note, this strategy relies on mortality being a cumulative variable, e.g., additional time receiving Progresa should lead to higher impacts on mortality. We also examine the differential impacts of the program by gender.

Because Progresa was preferentially targeted toward more disadvantaged areas, a difference-in-differences design may be confounded by differential underlying trends between more and less disadvantaged municipalities. To mitigate this concern, we first restrict the sample to municipalities in the highest categories of the Mexican government's marginality classification, where program roll-out was most intensive. Second, our specifications allow outcome differences between pre- and post-program cohorts to vary flexibly with cumulative municipal enrollment at the end of the program's second roll-out phase. As a consequence, identification requires parallel trends only between early and late roll-out municipalities, rather than between early roll-out municipalities and all others (Parker and Vogl, 2023). Third, we estimate event-study models that trace dynamic effects and test for differential pre-trends, using data that permit annual comparisons for up to seven years prior to the introduction of Progresa. We estimate the following equation:

$$Mortality_{m,t} = \beta_0\, Post_{m,t} \times Progresa_{m,1999} + \beta_1, Post_{m,t} \times Progresa_{m,2005} + \delta_m + \gamma_t + \chi_{m,t} + \varepsilon_{m,t} \quad (1)$$

where Mortality is the elderly mortality rate (65+) in municipality m in time t. We included interaction terms of Progresa intensity in 1999 or 2005 with Post Progresa dummy (equals 1 for 1997-2006 and 0 for 1991-1996). Fixed effects for municipality (δ_m) and year (γ_t) were included to control for time-invariant unobservable municipality-level confounders and aggregate time trends. Covariate ($\chi_{m,t}$) is the proportion of beneficiaries for Seguro Popular, a nationwide health insurance program for informal sector workers. We provide results for two specifications, one with and one without $\chi_{m,t}$. We also estimate event study specifications.

3 Mortality Impact of the *Progresa* CCT Program

3.1 Results: *Progresa* Effect on Older Adult Mortality

Given the program's delivery of benefits to women, we examine the differential effects of Progresa on mortality for individuals aged 65 and older in marginalized areas, both overall and by sex. Columns (1), (2), and (3) in Table 2 present the program's effect for both sexes combined, male only, and female only, respectively, while controlling for year and municipality fixed effects. Table 2 reports difference-in-differences estimates of the effect of Progresa on elderly (ages 65+) mortality in marginalized municipalities in Mexico between 1991 and 2006. The table presents estimates separately for men, women, and both sexes combined, with results shown for unweighted and population-weighted specifications, and with and without adjustment for the intensity of Seguro Popular.

Panel A shows unweighted estimates without controlling for Seguro Popular. The coefficient on the interaction between the post-program indicator and Progresa intensity is small and statistically insignificant for all three groups. Panel B adds controls for Seguro Popular intensity; the estimated effect of Progresa remains statistically insignificant and similar in magnitude.

Panels C and D present population-weighted specifications, where weights correspond to the size of the elderly population in each municipality. While the weighted estimates suggest more negative point estimates for male mortality, particularly in the post-Progresa period, these estimates remain statistically insignificant and are not mirrored for women or for the pooled sample. Controlling for Seguro Popular in Panel D does not materially alter the estimated effect of Progresa on elderly mortality.

Figures 2 and 3 present event study specifications for the specifications corresponding to Panels A (unweighted) and B (weighted) in Table 3. While relatively noisy, the event study specifications confirm no significant effects of Progresa on mortality of the aging. Pre program coefficients while again noisy in general do not show statistically significant pre program differences, providing support for our empirical strategy. In summary, across all specifications, both the event studies and the regression analysis provide no evidence of significant effects of Progresa on aging mortality over its first 10 years.

Robustness

Our overall findings on Progresa's effects are much less optimistic than a previous study by

(Barham and Rowberry, 2013), which suggested that Progresa reduced municipal-level mortality among adults aged 65 or older by 4%, primarily due to decreases in infectious diseases and also in diabetes-related deaths within two years of program implementation. To explore further, we replicate the specification of Barham and Rowberry (2013):

$$Mortality_{m,t} = \alpha_0 + Progresa_{m,t-2} + \delta_m + \gamma_t + \chi_{m,t} + \varepsilon_{m,t} \tag{2}$$

where Mortality is the elderly mortality rate (65+) in municipality m in time t and Progresa is the second lag of program intensity and carry out several modifications of their specification (Appendix Table 1). Row A reports BBarham and Rowberry (2013)'s results, where a one percentage point increase in 2-year lagged program intensity reduces approximately 0.064 deaths per 1,000 older adults. We replicate the specification, obtaining similar (but not identical) results in row B, with a negative and significant reduction of 0.07 deaths per 1,000 older adults (B). Barham and Rowberry (2013)'s results were unweighted, when we include population weights, statistical and negative significance remains but the size of impacts is attenuated by about 50%. Using 1 year lagged program intensity (row D) or 3 year lagged program intensity (row E), instead of Barham and Rowberry (2013)'s 2 year lagged program intensity, further attenuates results to about one third of the original results and the results also become less precise estimates.

3.2 Mechanisms: The *Progresa* Program Impact on Work, Income and Household Expenditure

For the first time in Mexico, the *Progresa* program provided a fixed amount of income to household heads complying with nationwide.[9] Following its implementation, we do not find detectable effects of the cash transfer on mortality among early older adult living in eligible municipalities compared to later beneficiaries. Following previous literature, we initially hypothesized that analyzing deaths by cause could help illuminate underlying mechanisms. However, this section further investigates potential mechanisms using household income and expenditure survey data to examine whether older adults living in households exposed to the program exhibit income effects and thus also identify the main spending channels through which behavior changes may have occurred.

[9] As previously discussed in section 1.2, in 2006, a pension for the elderly was added to the program, providing a monthly payment to each adult aged 70 or older who is part of a Progresa family.

4 Discussion

This study examines the medium-term effect of a conditional cash transfer program on elderly mortality in poor areas of Mexico. We find no evidence of significant negative effects of the Progresa program to reduce aging mortality during its first 10 years. This is perhaps not surprising. Most of the cash in conditional cash transfer programs are linked to children's school enrollment, effectively providing a subsidy to investing in children. The presence of aging members of the household does not increase the amount of transfers received under Progresa. Further, because most aging individuals in Mexican households live in extended households, they are not likely to be the direct recipients of the cash transfers. Finally, while they are required to attend preventive health clinic visits, the requirement for aging individuals is only one clinic visit, per year. For all of these reasons, large and immediate effects on adult or elderly health and mortality might not be expected, compared with say pension payments to the aging. Mortality furthermore likely reflects cumulative health processes, and the primary channels through which Progresa operated—income smoothing, nutrition, and preventive care—are more likely to affect intermediate health outcomes in the short run.

We conclude that Barham and Rowberry (2013)'s results are sensitive, becoming smaller and/or insignificant with relatively minor changes in the specification such as weighting or including different lags of intensity. Combined with the results presented here, we think the case for large negative effects of conditional cash transfers on adult mortality is not strong.

References

Aguila, E., A. Kapteyn, and J. P. Smith (2015). Effects of income supplementation on health of the poor elderly: The case of mexico. *Proceedings of the National Academy of Sciences 112*(1), 70–75.

Angel, J. L., W. Vega, and M. López-Ortega (2017). Aging in mexico: Population trends and emerging issues. *The Gerontologist 57*(2), 153–162.

Baird, S., F. H. G. Ferreira, B. Özler, and M. Woolcock (2014). Conditional, unconditional and everything in between. *Journal of Development Effectiveness 6*(1), 1–43.

Barham, T. and J. Rowberry (2013). Living longer: The effect of the mexican conditional cash transfer program on elderly mortality. *Journal of Development Economics 105*, 226–236.

Behrman, J. R. and S. W. Parker (2013). Is health of the aging improved by conditional cash transfer programs? evidence from mexico. *Demography 50*(4), 1363–1386.

Beltrán-Sánchez, H. and R. Wong (2025). Sociodemographic links with mortality and survival in the mexican older adult population: Impact of survey attrition in the mexican health and aging study 2001-2015. *Canadian Studies in Population 52*(1), 2.

Case, A. (2004). Does money protect health status? evidence from south african pensions. In *Perspectives on the Economics of Aging*, pp. 287–312. University of Chicago Press.

Fernald, L. C., P. J. Gertler, and X. Hou (2008). Cash component of conditional cash transfer program is associated with higher body mass index and blood pressure in adults. *The Journal of nutrition 138*(11), 2250–2257.

Fernald, L. C., X. Hou, and P. J. Gertler (2008). Oportunidades program participation and body mass index, blood pressure, and self-reported health in mexican adults. *Preventing chronic disease 5*(3), A81.

Fiszbein, A. and N. R. Schady (2009). *Conditional cash transfers: reducing present and future poverty*. World Bank Publications.

Galiani, S., P. Gertler, and R. Bando (2016). Non-contributory pensions. *Labour Economics 38*, 47–58.

Gertler, P. (2004). Do conditional cash transfers improve child health? evidence from progresa s control randomized experiment. *American economic review 94*(2), 336–341.

Kronebusch, N. and A. Damon (2019). The impact of conditional cash transfers on nutrition outcomes: Experimental evidence from mexico. *Economics & Human Biology 33*, 169–180.

Lagarde, M, H. A. and N. Palmer (2009). The impact of conditional cash transfers on health outcomes and use of health services in low and middle income countries. *Cochrane Database of Systematic Reviews* (4).

Levy, S. and N. Schady (2013). Latin america's social policy challenge: Education, social insurance, redistribution. *Journal of Economic Perspectives 27*(2), 193–218.

Lloyd-Sherlock, P. and S. Agrawal (2014). Pensions and the health of older people in south africa: is there an effect? *The journal of development studies 50*(11), 1570–1586.

Mahapatra, P., K. Shibuya, A. D. Lopez, F. Coullare, F. C. Notzon, C. Rao, and S. Szreter (2007). Civil registration systems and vital statistics: successes and missed opportunities. *The Lancet 370*(9599), 1653–1663.

Mikkelsen, L., D. E. Phillips, C. AbouZahr, P. W. Setel, D. De Savigny, R. Lozano, and A. D. Lopez (2015). A global assessment of civil registration and vital statistics systems: monitoring data quality and progress. *The Lancet 386*(10001), 1395–1406.

Miranda, A., S. Parker, and J. L. Sindelar (2016). Causes of obesity in mexico, the worlds most obese country. In *ASHEcon 6th Biennial Conference*.

OECD (2017). Obesity update.

Parker, S. W. and P. E. Todd (2017). Conditional cash transfers: The case of progresa/oportunidades. *Journal of Economic Literature 55*(3), 866–915.

Parker, S. W. and T. Vogl (2023). Do conditional cash transfers improve economic outcomes in the next generation? evidence from mexico. *The Economic Journal 133*(655), 2775–2806.

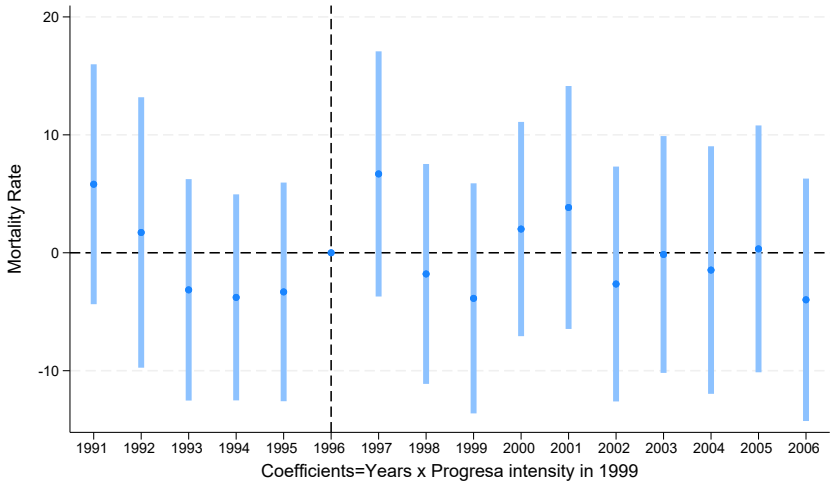
Richterman, A., C. Millien, E. F. Bair, G. Jerome, J. C. D. Suffrin, J. R. Behrman, and H. Thirumurthy (2023). The effects of cash transfers on adult and child mortality in low-and middle-income countries. *Nature 618*(7965), 575–582.

Rivera-Hernandez, M., M. Rahman, V. Mor, and O. Galarraga (2016). The impact of social health insurance on diabetes and hypertension process indicators among older adults in mexico. *Health Services Research 51*(4), 1323–1346.

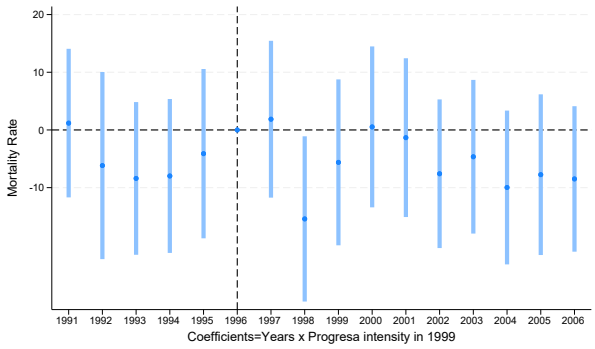
Salinas-Rodríguez, A., M. D. P. Torres-Pereda, B. Manrique-Espinoza, K. Moreno-Tamayo, and M. M. Téllez-Rojo Solís (2014). Impact of the non-contributory social pension program 70 y más on older adults' mental well-being. *PloS one 9*(11), e113085.

Taubman, P. and R. C. Sickles (1983). Supplemental social insurance and the health of the poor.

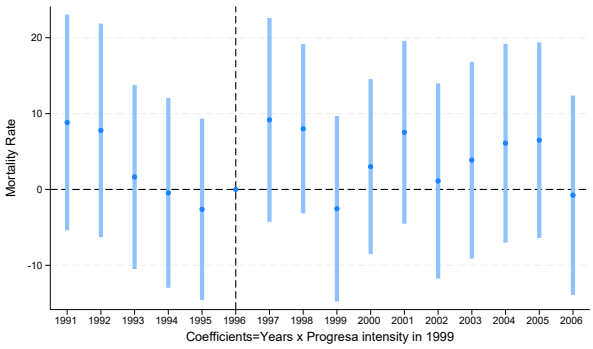
Figure 1: The effects of interaction terms between Progresa in 1999 and years on elderly mortality +65 overall and by sex in marginalized municipalities, Mexico, 1991-2006.



(a) All



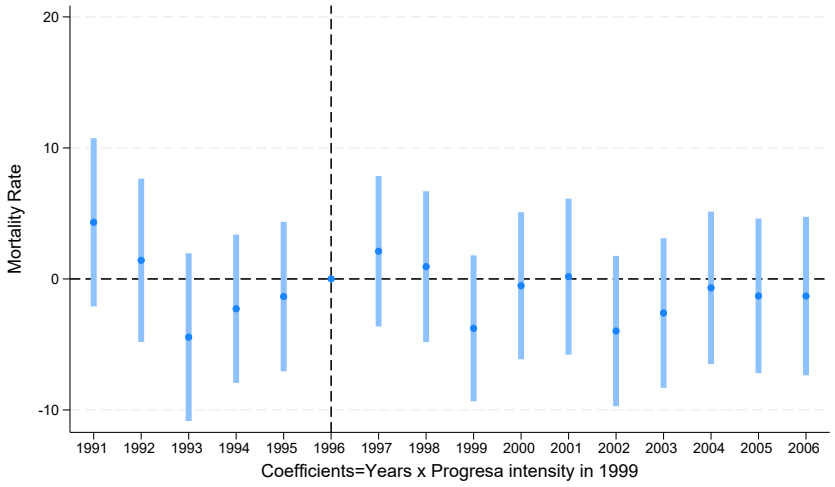
(b) Males



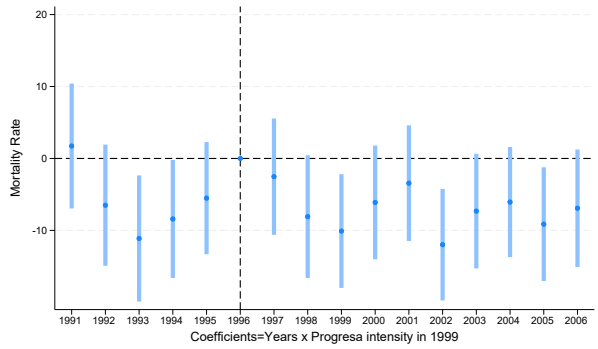
(c) Females

Notes: The data analysis is restricted to only marginalized municipalities, 1991-2006. The plots present the interaction terms between Progresa intensity in 1999 and years. Year and municipality fixed effects are included. Standard errors are clustered at the municipality level. 1996 is a reference year and the regression models are not weighted. Source: Authors' calculations using data on deaths and population from the Instituto Nacional de Estadistica y Geografia and Mexican Census data.

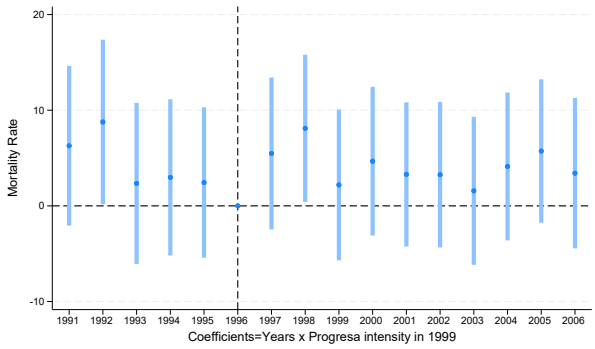
Figure 2: The effects of interaction terms between Progresa in 1999 and years on elderly mortality +65 overall and by sex in marginalized municipalities, Mexico, 1991-2006.



(a) All



(b) Males



(c) Females

Notes: The data analysis is restricted to only marginalized municipalities, 1991-2006. The plots present the interaction terms between Progresa intensity in 1999 and years. Year and municipality fixed effects are included. Standard errors are clustered at the municipality level. 1996 is a reference year and the regression models are not weighted. Source: Authors' calculations using data on deaths and population from the Instituto Nacional de Estadistica y Geografia and Mexican Census data.

Table 1: Summary statistics of non-marginalized and marginalized municipalities, Mexico (%)

	Non-marginalized areas	**Marginalized areas**
A. Progresa program intensity		
1999	0.10 (0.13)	0.44 (0.22)
2005	0.28 (0.19)	0.72 (0.17)
B. Characteristics of municipalities, 1990		
Components of the marginality index		
Illiterate population	13.33 (6.57)	33.33 (13.3)
With less than primary education	45.74 (12.32)	69.56 (9.68)
Without a toilet	25.94 (16.62)	60.30 (18.54)
Without electricity	11.81 (10.29)	36.39 (24.72)
Without running water	19.43 (14.87)	50.65 (24.07)
With crowding	59.84 (9.79)	73.96 (8.24)
With dirt floor	22.05 (14.21)	61.98 (21.58)
In communities with <5,000 inhabitants	60.18 (36.15)	95.50 (13.54)
Earning <2× minimum wage	69.19 (11.60)	85.82 (8.55)
Number of municipalities	1,234	1,119

Notes: Section A reports the mean proportion (%) with standard deviations of municipalities with a ratio of the Progresa beneficiary households to the total number of households in the municipality. Section B presents sample mean (%) of each variable and standard deviations are in parentheses. Marginalized areas include municipalities categorized as high and very high level of the Margination Index, while non-marginalized areas include municipalities categorized as medium, low, and very low level of the Margination Index. "With crowding" is measured by number of rooms divided by household size. Source: Authors' calculations using Mexican Census 1990 and Progresa administrative data on beneficiaries.

Table 2: Effects of Progresa on Elderly Mortality (65+) by Sex, Marginalized Municipalities, Mexico, 1991–2006

	Both sexes	**Male**	**Female**
Unweighted			
Mean in 1996	47.61	47.16	48.14
Post-dummy × Progresa intensity in 1999	0.369	-1.627	1.737
	(1.266)	(1.773)	(1.691)
Unweighted + Seguro Popular			
Post-dummy × Progresa intensity in 1999	0.354	-1.588	1.668
	(1.267)	(1.774)	(1.692)
Seguro Popular intensity	0.519	-1.332	2.311
	(1.474)	(2.064)	(1.969)
Weighted			
Mean in 1996	44.03	45.20	42.86
Post-dummy × Progresa intensity in 1999	-0.777	-2.288	0.592
	(1.094)	(1.491)	(1.447)
Weighted + Seguro Popular			
Post-dummy × Progresa intensity in 1999	-0.719	-2.206	0.620
	(1.095)	(1.491)	(1.448)
Seguro Popular intensity	-1.301	-1.938†	-0.623
	(0.807)	(1.104)	(1.064)

Notes: The analysis is restricted to marginalized municipalities, 1991–2006. Progresa and Seguro Popular intensities are continuous variables. The post-dummy equals 1 for years 1997–2006 and 0 for 1991–1996. Standard errors are clustered at the municipality level and shown in parentheses. All specifications include municipality and time dummies. ***p< 0.01, **p< 0.05, *p< 0.1. (n = 1,119 municipalities; n-years = 17,904) Source: INEGI, CONAPO, and Mexican Census.

Table 3: *Progresa* Effect on Individual Employment and Income Outcomes

	Employment	Hrs Worked	Hrs Worked +	Earnings	Income	Progresa	Transfers
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Panel A: Weighted							
Intensity 1999 x 1997-2006	0.045	12.715	4.852	7.518	-35.699	1.650	1.571
	(0.208)	(10.993)	(13.188)	(43.606)	(62.929)	(1.519)	(1.095)
Panel B: Unweighted							
Intensity 1999 x 1997-2006	-0.171	-4.595	-5.423	-42.352	-94.479	3.276	2.147
	(0.151)	(7.821)	(9.059)	(44.231)	(65.219)	(2.079)	(1.995)
Mean (1992-1996)	0.34	18.00	20.84	42.57	70.38	0.00	0.09
Obs	5,681	5,314	3,357	5,681	5,681	5,681	5,681
No. Mun	363	362	345	363	363	363	363
Year FE	Y	Y	Y	Y	Y	Y	Y
Mun FE	Y	Y	Y	Y	Y	Y	Y
Mun Controls	N	N	N	N	N	N	N
Cluster SE: Mun	Y	Y	Y	Y	Y	Y	Y

Notes: This table shows the results obtained from estimating a difference-in-differences model using individual labor-related outcomes. It includes municipality and year fixed effects. Standard errors are clustered at the level of treatment: municipality. $Intensity_{year} \times Post_{1997–2006}$ captures the intervention effect due to the intensity of the treatment on labor related outcomes, i.e., the effect when 0% of households in a municipality are Progresa beneficiaries goes up to 100% after 1997. The period of analysis is from 1992 to 2006, using survey waves available every two years. It includes highly marginalized municipalities. All regressions are weighted using the survey weights, and excludes upper 1% outliers. All monetary values are inflation-adjusted up to October 2025. ***p< 0.01, **p< 0.05, *p< 0.1

Table 4: *Progresa* Effect on Household Income Outcomes

	Earnings	Income	Expenditure	Progresa	Transfers	Savings	Debt	Household Size
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Panel A: Weighted								
Intensity 1999 x 1997-2006	-168.586	-222.302	-22.674	19.225***	3.329	-27.347	-2.463	-2.243
	(88.662)	(96.893)	(75.494)	(5.521)	(4.470)	(38.722)	(3.115)	(1.728)
Panel B: Unweighted								
Intensity 1999 x 1997-2006	-104.303	-165.297	-80.495	27.133***	4.323	-4.263	-4.240	0.173
	(83.849)	(97.642)	(97.920)	(5.942)	(3.841)	(18.941)	(6.295)	(1.216)
Mean (1992-1996)	211.57	268.74	253.02	0.00	0.84	16.14	1.88	4.51
Obs	4,343	4,346	4,340	4,343	4,343	4,339	4,337	4,343
No. Mun	360	360	360	360	360	360	360	360
Year FE	Y	Y	Y	Y	Y	Y	Y	Y
Mun FE	Y	Y	Y	Y	Y	Y	Y	Y
Mun Controls	N	N	N	N	N	N	N	N
Cluster SE: Mun	Y	Y	Y	Y	Y	Y	Y	Y

Notes: This table shows the results obtained from estimating a difference-in-differences model using household labor-related outcomes. It includes municipality and year fixed effects. Standard errors are clustered at the level of treatment: municipality. $Intensity_{year} \times Post_{1997–2006}$ captures the intervention effect due to the intensity of the treatment on labor related outcomes, i.e., the effect when 0% of households in a municipality are Progresa beneficiaries goes up to 100% after 1997. The period of analysis is from 1992 to 2006, using survey waves available every two years. It includes highly marginalized municipalities. All regressions are weighted using the survey weights, and excludes upper 1% outliers. All monetary values are inflation-adjusted up to October 2025. ***p< 0.01, **p< 0.05, *p< 0.1

Table 5: *Progresa* Effect on Household Food Expenditure Outcomes

	Food	Veggies	Cereals	Meat and D	Sugar	Alcohol	Tobacco	Vice
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Panel A: Weighted								
Intensity 1999 x 1997-2006	29.534	-4.266	-6.996	38.199***	-10.991	2.908	0.134	3.042
	(27.810)	(7.677)	(10.562)	(13.191)	(7.994)	(4.084)	(2.030)	(5.449)
Panel B: Unweighted								
Intensity 1999 x 1997-2006	-3.966	-0.112	-6.276	8.274	-5.766	9.775	3.201	12.975
	(41.105)	(10.044)	(12.415)	(13.762)	(7.934)	(9.682)	(4.313)	(12.882)
Mean (1992-1996)	117.35	28.51	23.87	33.17	13.70	1.58	1.13	2.71
Obs	4,341	4,338	4,331	4,337	4,336	4,377	4,377	4,385
No. Mun	359	360	358	360	360	360	360	360
Year FE	Y	Y	Y	Y	Y	Y	Y	Y
Mun FE	Y	Y	Y	Y	Y	Y	Y	Y
Mun Controls	N	N	N	N	N	N	N	N
Cluster SE: Mun	Y	Y	Y	Y	Y	Y	Y	Y

Notes: This table shows the results obtained from estimating a difference-in-differences model using household food expenditure outcomes. It includes municipality and year fixed effects. Standard errors are clustered at the level of treatment: municipality. $Intensity_{year} \times Post_{1997–2006}$ captures the intervention effect due to the intensity of the treatment on labor related outcomes, i.e., the effect when 0% of households in a municipality are Progresa beneficiaries goes up to 100% after 1997. The period of analysis is from 1992 to 2006, using survey waves available every two years. It includes highly marginalized municipalities. All regressions are weighted using the survey weights, and excludes upper 1% outliers. All monetary values are inflation-adjusted up to October 2025. ***p< 0.01, **p< 0.05, *p< 0.1

Table 6: *Progresa* Effect on Household Health Expenditure Outcomes

	Health	Medical Visits	Inpatient	Outpatient	Drugs	Drugs Prescribed	Drugs OC	Orthotics
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Panel A: Weighted								
Intensity 1999 x 1997-2006	-6.812	-6.019	3.664	-9.671	-2.187	-3.395	1.218	-0.538
	(7.026)	(3.249)	(2.608)	(2.702)	(3.564)	(2.829)	(1.576)	(1.832)
Panel B: Unweighted								
Intensity 1999 x 1997-2006	-12.466	-10.308	0.636	-10.935	-1.256	-1.072	-0.167	0.192
	(6.875)	(4.007)	(2.100)	(3.432)	(4.170)	(3.937)	(0.985)	(2.182)
Mean (1992-1996)	7.10	1.22	0.41	0.81	4.37	3.39	0.99	1.01
Obs	4,345	4,348	4,340	4,340	4,349	4,341	4,341	4,377
No. Mun	360	360	360	360	359	359	359	360
Year FE	Y	Y	Y	Y	Y	Y	Y	Y
Mun FE	Y	Y	Y	Y	Y	Y	Y	Y
Mun Controls	N	N	N	N	N	N	N	N
Cluster SE: Mun	Y	Y	Y	Y	Y	Y	Y	Y

Notes: This table shows the results obtained from estimating a difference-in-differences model using household health expenditure outcomes. It includes municipality and year fixed effects. Standard errors are clustered at the level of treatment: municipality. $Intensity_{year} \times Post_{1997–2006}$ captures the intervention effect due to the intensity of the treatment on labor related outcomes, i.e., the effect when 0% of households in a municipality are Progresa beneficiaries goes up to 100% after 1997. The period of analysis is from 1992 to 2006, using survey waves available every two years. It includes highly marginalized municipalities. All regressions are weighted using the survey weights, and excludes upper 1% outliers. All monetary values are inflation-adjusted up to October 2025. ***p< 0.01, **p< 0.05, *p< 0.1

Online Appendix

Do CCT Programs (Really) Reduce Mortality: 10 Year Evidence From Mexico

Emma Aguila, William H. Dow, Felipe Menares, Susan Parker, Jorge Peniche, and Soomin Ryu

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Appendix A: Additional Figures and Tables

Table A.1: Barham and Rowberry's results and our replication: Impact of Progresa on elderly mortality 65+, municipalities incorporated in 1998 or 1999

	(1) Both sexes	(2) Male	(3) Female
a. Barham and Rowberry's results			
Mean in 1996	47.5	49.3	46.0
2-year lagged Progresa intensity	-6.37^{***}	-6.42^{***}	-6.46^{***}
	(1.04)	(1.42)	(1.31)
b. Replication			
Mean in 1996	48.2	48.9	47.5
2-year lagged Progresa intensity	-7.061^{***}	-6.889^{***}	-7.426^{***}
	(1.317)	(1.794)	(1.635)
c. Replication with weighting			
Mean in 1996	48.1	49.6	46.6
2-year lagged Progresa intensity	-3.740^{***}	-3.322^{***}	-4.210^{***}
	(0.824)	(0.980)	(1.051)
d. 1-year lag with weighting			
Mean in 1996	48.1	49.6	46.6
1-year lagged Progresa intensity	-3.457^{***}	-2.681^{*}	-4.255^{***}
	(0.933)	(1.124)	(1.094)
e. 3-year lag with weighting			
Mean in 1996	48.1	49.6	46.6
3-year lagged Progresa intensity	-2.071^{*}	-2.357^{*}	$-1.830^{\dagger}$
	(0.809)	(1.003)	(1.006)

Notes: The data analysis is restricted to municipalities incorporated into Progresa in 1998 or 1999. Progresa intensity data are pooled from 1990 to 2000. All regression models include year fixed effects and municipality fixed effects. Standard errors are clustered at the municipality level. The regression model is weighted by the number of population aged +65 for both sexes in (1), only male in (2), and only female in (3).
a. The study period is between 1992 and 2002 (n = 1,961; n-years = 21,571).
b. The study period is between 1992 and 2002 (n = 1,422; n-years = 15,642).
c. The study period is between 1992 and 2002 (n = 1,422; n-years = 15,642).
d. The study period is between 1991 and 2001 (n = 1,422; n-years = 15,642).
e. The study period is between 1993 and 2003 (n = 1,422; n-years = 15,642).
***p< 0.01, **p< 0.05, *p< 0.1.

Table A.2: *Progresa* Effect on Individual Employment and Income Outcomes

	Employment	Hrs Worked	Hrs Worked +	Earnings	Income	Progresa	Transfers
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Panel A: Weighted							
Intensity 1999 x 1997-2006	-0.005	2.826	-4.801	-58.204	-185.357	-2.626	0.023
	(0.361)	(17.043)	(19.183)	(110.599)	(148.386)	(3.342)	(2.280)
Intensity 2005 x 1997-2006	0.055	11.020	10.815	73.046	166.168	4.753	1.720
	(0.334)	(15.198)	(17.425)	(108.593)	(151.602)	(3.643)	(2.188)
Panel B: Unweighted							
Intensity 1999 x 1997-2006	-0.123	0.712	1.263	-88.589	-40.247	-2.176	-1.526
	(0.278)	(12.868)	(14.833)	(84.898)	(128.170)	(3.575)	(4.116)
Intensity 2005 x 1997-2006	-0.053	-5.906	-7.432	51.355	-60.221	6.055*	4.080
	(0.270)	(13.137)	(14.384)	(71.095)	(126.453)	(3.458)	(3.634)
Mean (1992-1996)	0.34	18.00	20.84	42.57	70.38	0.00	0.09
Obs	5,681	5,314	3,357	5,681	5,681	5,681	5,681
No. Mun	363	362	345	363	363	363	363
Year FE	Y	Y	Y	Y	Y	Y	Y
Mun FE	Y	Y	Y	Y	Y	Y	Y
Mun Controls	N	N	N	N	N	N	N
Cluster SE: Mun	Y	Y	Y	Y	Y	Y	Y

Notes: This table shows the results obtained from estimating a difference-in-differences model using individual labor related outcomes. It includes municipality and year fixed effects. Standard errors are clustered at the level of treatment: municipality. $Intensity_{year} \times Post_{1997–2006}$ captures the intervention effect due to the intensity of the treatment on labor related outcomes, i.e., the effect when 0% of households in a municipality are Progresa beneficiaries goes up to 100% after 1997. The period of analysis is from 1992 to 2006, using survey waves available every two years. It includes highly marginalized municipalities. All regressions are weighted using the survey weights, and excludes upper 1% outliers. ***p< 0.01, **p< 0.05, *p< 0.1

Table A.3: *Progresa* Effect on Individual Employment and Income Outcomes by Sex

	Employment	Hrs Worked	Hrs Worked +	Earnings	Income	Progresa	Transfers
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Panel A: Females							
Intensity 1999 x 1997-2006	0.761*	16.435	31.557	47.525	-0.857	-5.071	-4.241
	(0.402)	(13.503)	(27.882)	(37.005)	(85.316)	(4.238)	(3.758)
Intensity 2005 x 1997-2006	-0.840	-23.981	-42.166	-51.738	-62.759	11.745**	3.750
	(0.324)	(10.851)	(24.901)	(32.074)	(88.707)	(5.108)	(3.869)
Mean (1992-1996)	0.18	7.86	9.85	14.14	33.39	0.00	0.03
Obs	2,858	2,568	1,115	2,858	2,858	2,858	2,858
Panel B: Males							
Intensity 1999 x 1997-2006	-0.165	24.901	27.620	-60.956	-140.843	-2.731	2.007
	(0.516)	(28.317)	(22.305)	(189.044)	(209.153)	(4.290)	(2.454)
Intensity 2005 x 1997-2006	0.126	0.913	-8.039	61.877	128.520	2.600	1.583
	(0.388)	(25.483)	(21.906)	(169.101)	(198.770)	(4.539)	(2.171)
Mean (1992-1996)	0.49	28.24	30.67	72.08	108.46	0.00	0.16
Obs	2,770	2,694	2,145	2,770	2,769	2,770	2,770
No. Mun	328	327	235	328	328	328	328
Year FE	Y	Y	Y	Y	Y	Y	Y
Mun FE	Y	Y	Y	Y	Y	Y	Y
Mun Controls	N	N	N	N	N	N	N
Cluster SE: Mun	Y	Y	Y	Y	Y	Y	Y

Notes:

Table A.4: *Progresa* Effect on Individual Employment and Income Outcomes - Barham and Rowberry

	Employment	Hrs Worked	Hrs Worked +	Earnings	Income	Progresa	Transfers
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Panel A: Weighted							
Lagged Intensity (1999)	-0.129	7.274	-6.673	-39.189	-50.977	2.401**	1.965***
	(0.103)	(6.073)	(7.728)	(21.701)	(46.053)	(1.006)	(0.680)
Panel B: Unweighted							
Lagged Intensity (1999)	-0.252	-0.438	-13.739	-53.226	-25.258	3.701***	1.342***
	(0.087)	(4.583)	(5.720)	(20.900)	(30.522)	(0.893)	(0.464)
Mean (1992-1996)	0.27	14.90	18.27	53.02	111.07	0.00	0.04
Obs	6,553	6,663	4,087	6,553	6,506	6,553	6,553
No. Mun	497	497	461	497	496	497	497
Year FE	Y	Y	Y	Y	Y	Y	Y
Mun FE	Y	Y	Y	Y	Y	Y	Y
Mun Controls	N	N	N	N	N	N	N
Cluster SE: Mun	Y	Y	Y	Y	Y	Y	Y

Notes: 1992-2002

Table A.5: *Progresa* Effect on Household Income Outcomes

	Earnings	Income	Expenditure	Progresa	Transfers	Savings	Debt	Household Size
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Panel A: Weighted								
Intensity 1999 x 1997-2006	-276.498	-389.219	13.545	20.223**	-8.061	-147.568	-2.136	-2.136
	(229.400)	(261.298)	(165.477)	(10.282)	(12.845)	(58.021)	(5.485)	(2.704)
Intensity 2005 x 1997-2006	120.192	186.040	-40.372	-1.111	12.686	134.375**	-0.366	2.115
	(213.841)	(235.020)	(159.279)	(10.904)	(12.470)	(62.087)	(4.317)	(2.185)
Panel B: Unweighted								
Intensity 1999 x 1997-2006	-131.113	24.372	53.012	18.731*	-3.938	-52.432	4.900	-1.733
	(183.647)	(217.101)	(272.589)	(10.704)	(8.073)	(36.812)	(10.821)	(2.070)
Intensity 2005 x 1997-2006	30.297	-214.217	-150.765	9.494	9.335	54.426	-10.337	2.153
	(177.570)	(229.209)	(242.992)	(9.092)	(7.590)	(39.357)	(7.168)	(1.638)
Mean (1992-1996)	211.57	268.74	253.02	0.00	0.84	16.14	1.88	1.88
Obs	4,343	4,346	4,340	4,343	4,343	4,339	4,337	4,343
No. Mun	360	360	360	360	360	360	360	360
Year FE	Y	Y	Y	Y	Y	Y	Y	Y
Mun FE	Y	Y	Y	Y	Y	Y	Y	Y
Mun Controls	N	N	N	N	N	N	N	N
Cluster SE: Mun	Y	Y	Y	Y	Y	Y	Y	Y

Notes:

Table A.6: *Progresa* Effect on Household Income Outcomes by Sex

	Earnings	Income	Expenditure	Progresa	Transfers	Savings	Debt	Household Size
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Panel A: Females								
Intensity 1999 x 1997-2006	-271.912	-345.303	-584.456	29.913	-5.423	-40.513	16.513	-4.332
	(381.765)	(551.400)	(473.842)	(23.718)	(15.887)	(98.056)	(29.223)	(6.137)
Intensity 2005 x 1997-2006	179.929	41.821	472.753	-6.652	12.179	-6.923	-25.842	-2.748
	(382.880)	(599.004)	(550.783)	(25.895)	(11.004)	(113.726)	(23.993)	(6.575)
Mean (1992-1996)	178.96	262.53	237.01	0.00	1.79	14.16	2.30	3.39
Obs	975	976	973	975	975	971	968	975
Panel B: Males								
Intensity 1999 x 1997-2006	-115.718	-155.375	86.577	18.528	-5.690	-185.426	-5.173	-4.157
	(241.223)	(243.504)	(191.742)	(12.083)	(13.604)	(71.515)	(6.548)	(2.882)
Intensity 2005 x 1997-2006	-129.716	-46.784	-152.540	0.863	11.255	182.372***	4.083	3.085
	(249.370)	(235.746)	(193.300)	(13.622)	(13.468)	(66.502)	(5.178)	(2.432)
Mean (1992-1996)	214.28	266.96	255.10	0.00	0.69	16.21	1.56	1.56
Obs	3,278	3,280	3,277	3,278	3,278	3,278	3,278	3,278
No. Mun	206	206	206	206	206	206	205	206
Year FE	Y	Y	Y	Y	Y	Y	Y	Y
Mun FE	Y	Y	Y	Y	Y	Y	Y	Y
Mun Controls	N	N	N	N	N	N	N	N
Cluster SE: Mun	Y	Y	Y	Y	Y	Y	Y	Y

Notes:

Table A.7: *Progresa* Effect on Household Income Outcomes - BR 2013

	Earnings	Income	Expenditure	Progresa	Transfers	Savings	Debt	Household Size
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Panel A: Weighted								
Lagged Intensity (1999)	-142.142	-183.318	19.172	8.901**	11.219***	-30.724	-2.920	-1.854
	(89.406)	(95.699)	(65.625)	(3.590)	(3.499)	(21.772)	(2.302)	(0.941)
Panel B: Unweighted								
Lagged Intensity (1999)	-229.436	-134.569	-27.197	15.511***	9.275***	-15.792	-5.474	-1.396
	(75.618)	(80.425)	(60.861)	(3.218)	(2.553)	(16.215)	(3.207)	(0.691)
Mean (1992-1996)	280.59	381.37	365.25	0.00	0.83	19.31	2.00	4.15
Obs	5,028	5,003	5,036	5,028	5,028	5,051	5,017	5,028
No. Mun	492	491	491	492	492	491	490	492
Year FE	Y	Y	Y	Y	Y	Y	Y	Y
Mun FE	Y	Y	Y	Y	Y	Y	Y	Y
Mun Controls	N	N	N	N	N	N	N	N
Cluster SE: Mun	Y	Y	Y	Y	Y	Y	Y	Y

Notes:

Table A.8: *Progresa* Effect on Household Food Expenditure Outcomes

	Food	Veggies	Cereals	Meat and D	Sugar	Alcohol	Tobacco	Vice
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Panel A: Weighted								
Intensity 1999 x 1997-2006	35.540	-10.638	-32.970	65.658**	-19.936	9.016	7.295	16.309
	(81.659)	(22.326)	(23.973)	(29.595)	(13.051)	(8.105)	(4.810)	(11.450)
Intensity 2005 x 1997-2006	-6.696	7.105	29.056	-30.661	9.961	-6.836	-8.016	-14.848
	(80.652)	(22.410)	(20.793)	(29.854)	(12.191)	(6.709)	(4.144)	(8.892)
Panel B: Unweighted								
Intensity 1999 x 1997-2006	-62.034	-15.562	-32.251	-1.711	-13.101	35.336	11.044	46.375
	(95.615)	(21.407)	(19.532)	(27.806)	(13.143)	(29.410)	(8.104)	(34.560)
Intensity 2005 x 1997-2006	65.614	17.432	29.327*	11.337	8.245	-28.869	-8.858	-37.720
	(81.544)	(18.804)	(15.994)	(24.339)	(11.738)	(25.384)	(5.934)	(28.904)
Mean (1992-1996)	117.35	28.51	23.87	33.17	13.70	1.58	1.13	2.71
Obs	4,341	4,338	4,331	4,337	4,336	4,377	4,377	4,385
No. Mun	359	360	358	360	360	360	360	360
Year FE	Y	Y	Y	Y	Y	Y	Y	Y
Mun FE	Y	Y	Y	Y	Y	Y	Y	Y
Mun Controls	N	N	N	N	N	N	N	N
Cluster SE: Mun	Y	Y	Y	Y	Y	Y	Y	Y

Notes:

Table A.9: *Progresa* Effect on Household Food Expenditure Outcomes by Sex

	Food	Veggies	Cereals	Meat and D	Sugar	Alcohol	Tobacco	Vice
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Panel A: Females								
Intensity 1999 x 1997-2006	-91.410	-32.105	-43.869	-21.130	-43.039	-6.709	3.741	-3.009
	(204.863)	(39.232)	(37.677)	(72.263)	(41.415)	(8.437)	(4.735)	(9.777)
Intensity 2005 x 1997-2006	45.449	-7.728	38.383	31.330	40.234	10.035	-5.644	4.444
	(213.782)	(44.252)	(36.687)	(67.327)	(37.739)	(12.570)	(4.826)	(13.220)
Mean (1992-1996)	98.37	22.15	23.14	31.74	13.89	0.64	0.42	1.06
Obs	970	970	970	970	974	980	980	983
Panel B: Males								
Intensity 1999 x 1997-2006	77.252	-5.639	-34.130	76.516**	-25.138	1.235	6.607	7.842
	(83.927)	(25.163)	(32.408)	(37.099)	(14.056)	(8.253)	(5.163)	(10.260)
Intensity 2005 x 1997-2006	-49.890	8.565	25.697	-46.305	13.736	-2.102	-6.952	-9.053
	(88.234)	(26.935)	(27.874)	(36.912)	(14.394)	(6.036)	(4.341)	(6.905)
Mean (1992-1996)	119.74	29.70	24.16	32.25	13.47	1.80	1.18	2.97
Obs	3,280	3,276	3,269	3,277	3,273	3,307	3,307	3,312
No. Mun	205	204	204	206	206	206	206	206
Year FE	Y	Y	Y	Y	Y	Y	Y	Y
Mun FE	Y	Y	Y	Y	Y	Y	Y	Y
Mun Controls	N	N	N	N	N	N	N	N
Cluster SE: Mun	Y	Y	Y	Y	Y	Y	Y	Y

Notes:

Table A.10: *Progresa* Effect on Household Food Expenditure Outcomes - BR (2013)

	Food	Veggies	Cereals	Meat and D	Sugar	Alcohol	Tobacco	Vice
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Panel A: Weighted								
Lagged Intensity (1999)	3.848	13.729**	2.947	8.706	1.092	-3.567	1.876	-1.673
	(22.867)	(6.421)	(6.385)	(10.724)	(4.495)	(2.492)	(2.221)	(3.428)
Panel B: Unweighted								
Lagged Intensity (1999)	10.576	11.326**	8.368*	13.185	-0.765	-4.041	-0.095	-4.123
	(19.688)	(5.652)	(5.021)	(9.160)	(4.188)	(3.409)	(2.562)	(5.265)
Mean (1992-1996)	144.82	33.29	29.51	51.95	15.06	1.48	2.28	3.76
Obs	4,941	5,084	5,075	4,954	5,021	5,131	5,131	5,138
No. Mun	490	492	491	491	491	492	492	492
Year FE	Y	Y	Y	Y	Y	Y	Y	Y
Mun FE	Y	Y	Y	Y	Y	Y	Y	Y
Mun Controls	N	N	N	N	N	N	N	N
Cluster SE: Mun	Y	Y	Y	Y	Y	Y	Y	Y

Notes:

Table A.11: *Progresa* Effect on Household Health Expenditure Outcomes

	Health	Medical Visits	Inpatient	Outpatient	Drugs	Drugs Prescribed	Drugs OC	Orthotics
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Panel A: Weighted								
Intensity 1999 x 1997-2006	-14.259	-15.647	-11.375	-4.293	5.753	3.062	2.670	0.200
	(13.849)	(10.319)	(9.044)	(5.089)	(7.402)	(6.484)	(2.568)	(2.890)
Intensity 2005 x 1997-2006	8.344	10.788	16.852	-6.027	-8.884	-7.224	-1.625	-0.826
	(16.051)	(12.743)	(11.394)	(5.085)	(6.926)	(6.196)	(2.442)	(2.115)
Panel B: Unweighted								
Intensity 1999 x 1997-2006	9.179	-1.981	-4.626	2.633	19.058**	17.128*	1.913	2.976
	(15.811)	(7.715)	(4.282)	(5.827)	(9.688)	(9.215)	(1.534)	(3.163)
Intensity 2005 x 1997-2006	-24.390	-9.380	5.927	-15.284	-22.936	-20.550	-2.348	-3.144
	(15.425)	(7.956)	(4.576)	(6.012)	(9.353)	(9.051)	(1.471)	(3.261)
Mean (1992-1996)	7.10	1.22	0.41	0.81	4.37	3.39	0.99	1.01
Obs	4,345	4,348	4,340	4,340	4,349	4,341	4,341	4,377
No. Mun	360	360	360	360	359	359	359	360
Year FE	Y	Y	Y	Y	Y	Y	Y	Y
Mun FE	Y	Y	Y	Y	Y	Y	Y	Y
Mun Controls	N	N	N	N	N	N	N	N
Cluster SE: Mun	Y	Y	Y	Y	Y	Y	Y	Y

Notes:

Table A.12: *Progresa* Effect on Household Health Expenditure Outcomes by Sex

	Health	Medical Visits	Inpatient	Outpatient	Drugs	Drugs Prescribed	Drugs OC	Orthotics
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Panel A: Females								
Intensity 1999 x 1997-2006	-50.894	-7.183	-1.469	-5.916	-1.223	1.413	-2.821	-16.644
	(35.750)	(14.231)	(12.467)	(6.042)	(12.084)	(10.770)	(4.672)	(13.072)
Intensity 2005 x 1997-2006	72.087*	28.317	26.312	2.261	7.419	-2.084	9.733	11.473
	(38.465)	(21.409)	(19.492)	(6.297)	(12.941)	(11.116)	(7.611)	(9.265)
Mean (1992-1996)	5.26	0.59	0.10	0.49	3.90	2.76	1.14	0.26
Obs	976	975	972	972	979	976	976	980
Panel B: Males								
Intensity 1999 x 1997-2006	-16.897	-20.476	-15.062	-5.429	6.130	2.702	3.406	1.772
	(17.252)	(12.489)	(10.949)	(6.082)	(8.605)	(7.856)	(2.916)	(2.239)
Intensity 2005 x 1997-2006	3.865	12.547	18.923	-6.343	-12.417	-8.814	-3.562	-1.752
	(19.849)	(15.673)	(13.920)	(6.272)	(7.984)	(7.503)	(2.734)	(2.614)
Mean (1992-1996)	7.36	1.32	0.48	0.83	4.32	3.33	0.99	1.20
Obs	3,279	3,283	3,278	3,278	3,279	3,274	3,274	3,307
No. Mun	206	206	206	206	205	205	205	206
Year FE	Y	Y	Y	Y	Y	Y	Y	Y
Mun FE	Y	Y	Y	Y	Y	Y	Y	Y
Mun Controls	N	N	N	N	N	N	N	N
Cluster SE: Mun	Y	Y	Y	Y	Y	Y	Y	Y

Notes:

Table A.13: *Progresa* Effect on Household Health Expenditure Outcomes

	Health	Medical Visits	Inpatient	Outpatient	Drugs	Drugs Prescribed	Drugs OC	Orthotics
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Panel A: Weighted								
Lagged Intensity (1999)	5.923	2.574	2.763	-0.184	-0.225	-0.482	0.238	4.231
	(6.322)	(2.882)	(2.526)	(1.609)	(2.664)	(2.642)	(0.766)	(2.644)
Panel B: Unweighted								
Lagged Intensity (1999)	3.518	1.111	1.268	-0.161	0.895	1.069	-0.191	3.145
	(5.621)	(1.921)	(1.233)	(1.477)	(2.365)	(2.227)	(0.554)	(2.240)
Mean (1992-1996)	11.67	1.78	0.39	1.39	4.98	3.90	1.08	2.54
Obs	5,054	5,060	5,053	5,053	5,010	5,003	5,003	5,131
No. Mun	492	492	492	492	491	491	491	492
Year FE	Y	Y	Y	Y	Y	Y	Y	Y
Mun FE	Y	Y	Y	Y	Y	Y	Y	Y
Mun Controls	N	N	N	N	N	N	N	N
Cluster SE: Mun	Y	Y	Y	Y	Y	Y	Y	Y

Notes: