Monetary Transfers and Domestic Violence in Mexico

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Abstract

One of four women experience intimate partner violence in Mexico. We provide evidence of the effects of cash transfers (remittances and conditional cash transfers) on domestic violence by exploiting the state-level variation of these transferences using three waves of a national-state representative survey specialized in domestic violence in Mexico. We find that receiving remittances increases the likelihood of domestic violence by 6.2 percentage points; yet, we do not find evidence that conditional cash transfers affect domestic violence. In addition, we found no evidence that the size of the remittances affect the level of domestic violence. Yet, we find a strong association between households that receive remittances and husbands who do not work. This suggests that spouses, in order to compensate the lack of income within the household, potentially exercise violence to extract part of the remittances in possession of the wives.

Keywords: domestic violence; remittances; PROGRESA

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1 Introduction

In Mexico, 28% women were victims of emotional, economical, physical, or sexual intimate partner violence in 2016 (ENDIREH, 2016). Monetary transfers have been associated with domestic violence; yet, there is not a unified theory regarding the direction of their effects. Farmer and Tiefenthaler (1997), using a noncooperative household model of domestic violence, predict that women's income and other financial support received from outside the marriage increase women's empowerment and decrease intimate partner violence. Yet, Bloch and Rao (2002) explain dowry violence in India using a model where a husband extracts rent from the wife's family using violence as a bargaining instrument. Their model predicts that women from richer families are at a higher level of risk of violence because there are more resources to extract.

In this paper, we analyze the effects of two important kind of monetary transfers on domestic violence for couples living in Mexico: money send by relatives within the country or the USA (remittances), and conditional cash transfers from the PROGRESA program. We use data from three waves of a national-state representative survey regarding intimate partner violence, the National Survey on Relationships within the Household (ENDIREH (2006), ENDIREH (2011), and ENDIREH (2016)). Using fixed effects at the state level, we find that receiving remittances increases the likelihood of domestic violence by 6.2 percentage points. Yet, we do not find evidence that transfers from PROGRESA affect domestic violence. As a robustness test for omitted variable bias, we use a bounding strategy following Altonji et al. (2005) and Oster (2017). The bounding strategy suggest that the results are robust to omitted variable bias.

Our work relates to a literature studying the effects of conditional and unconditional cash transfers in developing countries. Angelucci (2008) using data from a randomized experiment of households participating in the PROGRESA program in rural areas, finds no effect on alcohol-related domestic abuse, on average. Yet, there is evidence that small transfers decrease violence and large transfers increase the aggressive behavior of husbands with traditional views of gender roles and low educational levels.[1] Bobonis et al. (2013) study the effects of PROGRESA on domestic violence in rural areas, and find that women participating in the program are 5 to 7 percentage points less likely to be victims of physical violence, and are 3 to 5 percentage points more likely to be victims of emotional violence. Yet, these effects disappear 5-9 years after the program was implemented (Bobonis et al., 2015).[2] Hidrobo and Fernald (2013), using a randomize control trial that provides unconditional cash transfer to mothers in Ecuador, find that being in the treatment group has no effect on emotional and physical violence. Yet, the program decreases psychological violence against women who have passed the primary school. For women with primary school or less and their education is equal or greater than their partners, the monetary transfer increases emotional violence.[3] To sum up,

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[1] The PROGRESA data does not contain a module of questions regarding domestic violence. Thus, the question used by Angelucci was the following: "while drinking, does this person (referred to the husband) have an aggressive behavior?".

[2] The present paper uses the same data than Bobonis et al. (2015); yet, there are two important differences. The first is that Bobonis et al. (2015) use the ENDIREH 2003, 2006, and 2011 and we use the ENDIREH 2006, 2011, and 2016. For the period 2006-2016, the ENDIREH is representative at the state level, thus we can exploit fixed effects at this level. In the case of Bobonis et al. (2015), they generate a pseudo panel because the ENDIREH 2003 was representative only for 11 states. In addition, for the ENDIREH 2003 the survey asked whether the women received benefits from any government program, not only PROGRESA. The other important difference is that Bobonis et al. (2015) only analyzes the effects of transfers from PROGRESA in rural areas, whereas we also include urban areas and remittances from the USA and from Mexico.

[3] Hidrobo and Fernald (2013) notice that the questions on domestic violence were not restricted

these papers find no effects of monetary transfers on domestic violence on average; yet, there are important heterogeneous effects.

The main contributions of this paper are threefold. First, we provide evidence that the nature of monetary transfers matters in terms of domestic violence. In particular, our results show that unconditional cash transfers in the form of remittances or money send by relatives within the country can generate domestic violence, but it is not the case of conditional cash transfers through PROGRESA. Second, our results suggest that when it is clearly specified who is the owner of the transfers (as in the case of PROGRESA), there are no effects on domestic violence regardless the size of the transfers. Finally, we find evidence that transfers via remittances decrease the probability of men being employed by 10 percent points; yet, there is no evidence that transfers through PROGRESA affects the working conditions for men. This result can partially explain why we find effects on domestic violence in the case of remittances, but not for PROGRESA. It is possible that men who are not working, living in households that receive remittances, exercise domestic violence to extract these resources from their wives.

The rest of the paper is organized as follows: in Section II, we describe the data and empirical methods; in Section III, we present the results; and, Section IV is the conclusion.

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to a specific time period of reference; yet, the questions were phrased in the present instead of past tense.

2 Data and Empirical Methods

2.1 Description of Data

To estimate the impact of cash transfers on domestic violence we use the National Survey on Relationships within the Household (ENDIREH) of 2006, 2011, and 2016. ENDIREH is a national and state level representative survey which collects data regarding domestic violence within the household for women aged 15 or older being in a relationship (married or cohabiting), who were previously married (divorced, separated, or widowed), and single women. For this paper, we restrict our sample to only women living with their husbands (married or cohabited) and aged between 15 and 60 years old. Thus, we get 65,892, 63,767 and 54,494 women interviewed in 2006, 2011, and 2016, respectively.

ENDIREH provides information for 30 items regarding intimate partner violence, which are classified in four categories: emotional, economical, physical, and sexual. In particular, we use questions on domestic violence when they refer to an incident of violence in the last twelve months. For the 30 items[4], it takes the value of 0 if a woman replies never and 1 if a woman replies sometimes or frequently. Then, we construct a general measure of domestic violence and four categories of violence (emotional, economical, physical, and sexual), taking the value of one if the woman has experienced any violent item in the last 12 months and zero otherwise.

Over time, the rate of intimate partner violence has declined (Figure 1). The

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[4]Table 8 in the Appendix presents the prevalence of each violent item for 2006, 2011, and 2016

incidence of domestic violence was 39.6% in 2006, decreased to 34.4% in 2011, and 28.6% by 2016. Regarding the percentage of women reporting their household received transfers from PROGRESA, it has increased for the period of analysis (13.5% in 2006, 15.6% in 2011, and 18.8% in 2016). Yet, there are important differences of the program in rural and urban areas (Figure 2). It is observed a decrease for the period of analysis in rural areas (48.0% in 2006, 43.4% in 2011, and 40.4% in 2016); while it is observed an increase in urban areas (6.3% in 2006, 8.6% in 2011, and 10.9% in 2016). In the case of remittances, it is observed a decrease from 2006 to 2011, but then an increase from 2011 to 2016 (5.2% in 2006, 2.1% in 2011, and 2.8% in 2016, see Figure 2).

Sample means regarding domestic violence within the three periods are presented in Table 1, Panel A. In a purely descriptive manner, it illustrates how women who receive remittances suffer more domestic violence (41%) than women in PROGRESA (33%) or those who does not receive cash transfers[5] (35%). Panel A also presents information on the four categories of domestic violence analyzed in the data (emotional, economical, physical, and sexual). Women who receive remittances suffer more emotional and economic domestic violence than those who do not receive transfers or receive transfers from PROGRESA (Panel A). Regarding physical and sexual violence, women who receive remittances suffer more from these types of violence, followed by women in PROGRESA, and then for women who does not receive transfers (Panel A).

For purposes of comparison, in Columns 1, 2, and 3 of Table 1, we also present information regarding the women and their partners depending on whether they

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[5]It refers to women who do not receive other financial support from outside the marriage

receive remittances, transfers from PROGRESA, and no cash transfers, respectively. Women who do not receive remittances are young, more educated, with lower probability of being indigenous, and less likely to have suffered violence during their childhood than those who receive remittances or transfers from PROGRESA (Panel B). The partners who live in households that do not receive cash transfers are younger, more educated, with lower probability of being indigenous, and have a higher probability of being employed than those who receive remittances or transfers from PROGRESA (Panel C). It is observed that couples participating in PROGRESA have a higher probability of cohabiting and more children than those couples who receive remittances or that do not receive cash transfers (Panel C). Finally, Panel D includes information regarding other characteristics that potentially can affect domestic violence at the state level, including, homicides, sex ratio, gross domestic product per capita, inequality (measured by the Gini coefficient), and whether they live in a state where unilateral divorce law applies.

2.2   Empirical Strategy

To estimate the effect of cash transfers from remittances and PROSPERA on domestic violence we use a fixed effects strategy at the state level, and check the robustness of the results using a bounding methodology proposed by Oster (2016). The fixed effects regression is as follows:

$$Y_{ist} = \beta_0 + \beta_1 Remittances_{ist} + \beta_2 PROGRESA_{ist} + \beta_3 X_{ist} + \theta_s + \gamma_t + e_{ist}$$

where Y_{ist} is a variable measuring intimate partner violence for women i, in state s and year t; $Remittances_{ist}$ is a dummy variable equals to one when the

household receives transfers from the USA or from within Mexico; $PROGRESA_{ist}$ is a dummy variable regarding whether or not the household participates in PRO-GRESA; X_{ist} is a vector of controls; θ_s is a set of state-fixed effects and γ_t is a set of year dummies. Standard errors are clustered at the state level to correct for autocorrelation of the outcome measure across years within a state. The coefficients of interest are β_1 and β_2, which represent the effect of monetary transfers on the likelihood of suffering domestic violence.

State-fixed effects account for unobserved time-invariant characteristics across states; yet, it is still possible that unobserved time-variant characteristics affect our results. To check the robustness of our results, we use a bounding approach proposed by Altonji et al. (2005) and refined by Oster (2016). Altonji et al. (2005) observed that a common approach to evaluate robustness to omitted variable bias is to include additional control variables on the right hand side of the regression. If such additions do not affect the coefficient of interest, then this coefficient can be considered to be unlikely biased. This strategy implicitly assumes that selection on observables is informative about selection on unobservables. Oster formalizes this idea, and provides conditions for bounds and identification. In addition, Oster points out that it is not only necessary to add controls, but to observe the movements in the R-squared.

Oster shows that a consistent estimator of the parameter of interest can be obtained; yet, it is a function of two parameters unknown by the econometrician: (1) the R-squared for a hypothetical model that contains both the observable and unobservable variables; and, (2) the proportion of selection of unobservables on

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observables. In particular, Oster defines R_{max} as the overall R-squared of the model, that is the R-squared that would be obtained from a regression of the dependent variable (Y) on the variable of interest (T), observables(X_1), and unobservables (X_2). Also, Oster defines δ to be a parameter that ensures the equality $\frac{Cov(T,X_2)}{Var(X_2)} = \delta \frac{Cov(T,X_1)}{Var(X_1)}$, i.e. this relationship formalizes the idea that the magnitude and sign of the relationship between T and X_1 provides some information about the magnitude and sign of the relationship between T and X_2. Oster argued that selection on unobservables should not be greater than selection on observables. Thus, the lower bound of δ is zero and the upper bound is one. To determine R_{max}, Oster tested the robustness of treatment parameters from randomized control studies published in top economic journals between 2008 and 2013 by using $R_{max} = min\{\pi \tilde{R}, 1\}$ with various values of π and $\tilde{R}$ being the R-squared of regressing Y on T and X_1. Oster found that only 20% of results were robust when $R_{max} = 1$ while using $R_{max} = 1.3\tilde{R}$ (or $\pi = 1.3$) reproduced 90% of randomized results. Thus, Oster suggests that β^* (the parameter of interest) be calculated for the following ranges of δ: $0 \leq \delta \leq 1$. This allows one to construct the set $[\beta^*(\delta = 0), \beta^*(\delta = 1)]$ assuming $R_{max} = 1.3\tilde{R}$. If this set excludes zero, the results from the controlled regressions can be considered to be robust to omitted variable bias. In other words, the results indicate that $\beta^* \neq 0$.

Finally, in addition to estimate the average effect of cash transfers (remittances and PROGRESA) on intimate partner violence (IPV), we estimate the heterogeneous effects with respect to cohabiting, women's education, and men's education. The equation that we estimate is as follows:

$$Y_{ist} = \beta_0 + \beta_1 Remittances_{ist} + \beta_2 Remittances_{ist} \times T_{ist} + \beta_3 PROGRESA_{ist} +$$

$$\beta_4 PROGRESA_{ist} \times T_{ist} + \beta_5 X_{ist} + \theta_s + \gamma_t + e_{ist}$$

where T_{ist} is an indicator that equals one if the couple is cohabiting (or one of the spouses have secondary education or more). Notice that β_1 and β_3 measures the effect of the omitted category, while $\beta_1 + \beta_2$ and $\beta_3 + \beta_4$ measures the effect of remittances and transfers from PROGRESA for couples that are cohabiting (or when one of the spouses have secondary education or more).

3 Results

3.1 Fixed Effects

The Fixed Effects results of monetary transfers on intimate partner violence (IPV) are presented in column 1 of Table 2, and we control for female characteristics, partner and household characteristics, and state characteristics.[6][7] We find that receiving remittances increases the incidence of intimate partner violence in 6.2 percentage points; yet, we do not find evidence that receiving transfers from PRO-GRESA increases the likelihood of domestic violence. Then we analyze the effects of monetary transfers depending on the type of intimate partner violence (IPV), i.e. emotional, economical, physical and sexual on columns 2, 3, 4, and 5, respectively. The results show that receiving remittances increases the likelihood of IPV by 6.2, 4.4, 1.8, and 1.4 percentage points for emotional, economical, physical, and

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[6]Female characteristics include age, education, speak an indigenous language, and violence within family of origin. Partner and household characteristics include partner's age, education, and speaking an indigenous language. In addition, we include children less than 20 years old and cohabiting status. State characteristics include homicides per 100,000 inhabitants, sex ratio, log (GDP per capita), inequality (Gini coefficient), unilateral divorce, and living in a rural area.

[7]Table 9 reproduces Table 2 presenting the coefficients associated to the controls.

sexual violence, respectively. On the case of PROGRESA, the results show no effect on emotional and economical IPV; yet, there is a positive minimum effect on physical and sexual IPV of 0.6 and 0.4 percentage points, respectively.

3.2 Robustness Checks: Bounding Methodology and Pairs Cluster Bootstrap-t Procedure

Although fixed effects control for time-invariant omitted variables, it does not eliminate time-variant omitted variables. Thus, we estimate the range of estimated parameters using a bounding methodology proposed by Oster (2016). Regarding the effects of remittances, the parameter bounds for all outcomes (general IPV and the four categories) do not include the zero and include positive ranges, suggesting that our results are robust (see Table 3). In the case of PROGRESA, our results confirm the results presented using Fixed effects. For the case of general IPV, emotional, and economical violence, the bounds include the zero; and the parameter bounds for physical and sexual do not include the zero. To sum up, we find evidence that receiving remittances impact general IPV, emotional, economical, physical and sexual violence. In the case of receiving transfers from PROGRESA, we do not find evidence that it affects general IPV, emotional, and economical violence; and, it has minimal effects on physical and sexual violence.

Cameron et al. (2008) notice that with a few (five to thirty) number of clusters, the cluster-robust standard errors are downward biased. While we have 32 clusters at the state level, we conducted a pair cluster bootstrap-t procedure described in

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Cameron et al. (2008). This procedure is recommended in order to obtain accurate inference about the statistical significance of a parameter when the data is clustered with a small number of clusters. Table 4 reproduce Table 2 using this method. It is observed an increase on the standard errors, but the statistical significance of the results presented in Table 2 are maintained.

3.3   Heterogeneous Effects

Table 5 presents heterogeneous effects of cash transfers (remittances and PROGRESA) on intimate partner violence (IPV) with respect to cohabiting, women's education, and men's education. In order to compare with previous research in the literature, we present the results separated by urban and rural areas. The variable regarding cohabiting is a dummy variable that takes the value of one when the wife reports they are not married (cohabiting), and zero otherwise. The variables regarding women's education and men's education are dummy variables that take the value of one when they report having a secondary education or more, and zero otherwise.

The heterogeneous results regarding rural areas for cohabiting, women's education, and men's education are presented in Table 5 columns 1, 2, and 3, respectively. Remittances increase the likelihood of domestic violence for women who are not cohabiting (3.2%), women with less than secondary education (4.3%) and when their partners have less than secondary education (4.3%). Yet, there is no evidence (at the 5 percent level) that remittances affect domestic violence for couples who are cohabiting, women with more than secondary education, and

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when their partners have more than secondary education. Regarding the transfers from PROSPERA, there is no evidence of heterogeneous effects for the variables analyzed.

The heterogeneous results regarding urban areas for cohabiting, women's education, and men's education are presented in Table 5 columns 4, 5, and 6, respectively. Remittances have a positive effect on intimate partner violence (IPV) for women who are not cohabiting (6.4%), women with less than secondary education (6.2%), and when their partner have less than secondary education (5.5%). In addition, it is observed that women who are cohabiting suffer more domestic violence (9.9%). Finally, for both the wives and husbands there is no evidence at the 5 percent level of significance that having secondary education or more affects the level of violence. Considering the case of transfers from PROGRESA in urban areas, there is no evidence of heterogeneous effects regarding the variable of cohabiting. In the case of women who have less than secondary education, we observe a decrease on violence (2.1%); and for women with more than secondary education, we observe an increase of violence (2.7%). Finally, it is observed that when the men have less than secondary education, there is a decrease on violence (1.7%); and for men with secondary education or more, there is an increase on violence (2.6%).

3.4 Why remittances have an effect on domestic violence but not transfers via PROGRESA?

A possible explanation of why remittances are affecting the levels of domestic violence, but not transfers through PROGRESA, can be related to the size of the transfers. For the years 2011 and 2016 the remittance average transfers was $1,792 pesos, while PROGRESA transfers was $662 pesos.[8] Table 6 column 1 analyzes the effects of the size of the transfers on domestic violence. In the case of remittances, the size of the transfers is statistically significant at the level of 10%, but its effect is minimal (.00000036). In the case of PROGRESA, there is no evidence that the size of the transfers affects the probability of domestic violence. Likewise, we analyze if there is a difference between the results at the rural and urban levels. For the rural case (column 2), the size of the transfer is statistically significant, but its effect is minimal (.00000037). In the case of PROSPERA, we find no evidence that the size of the transfers affects the level of domestic violence. Finally, for urban areas, there is no evidence that the size of remittances or transfers via PROGRESA affect the probability of suffering domestic violence. In summary, the presented evidence does not favor the hypothesis that the size of remittances are the mechanism by which we observe a positive effect on domestic violence.

An alternative to confirm that the size of transfers does not affect the levels of domestic violence is using transfers via pensions. Using data from 2006 and 2011, we found that approximately 2% of women received money via pensions with an average transfer of $7,748 pesos. A woman may be pensioned because she suffered

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[8]In 2006, the survey asked globally for other types of transfers, so that we cannot break down which part corresponds to remittances and which to PROGRESA

an accident that no longer allows her to work,[9] among other possibilities. Table 6 column 4 reproduces column 1, but adding a dummy variable referring to whether the woman receives pensions and a variable that interacts receiving pensions with the size of the transfer. We found no evidence that pensions or the size of the pensions affect the level of domestic violence. A possible explanation to the observed results is that when the rights over the transfers are clearly specified (as in the case of pensions or PROGRESA) there are no effects on domestic violence regardless the size of the transfer.

Another alternative is related to the effects of monetary transfers on the working conditions of men. Table 7 column 1 presents evidence that transfers via remittances decrease the probability that a man will work by 10 percentage points; yet, there is no evidence that the transfers through PROGRESA affect the working conditions for men. We cannot infer whether remittances reduce men's labor supply or that households receive remittances because men cannot work. Yet, it is possible that men exercise domestic violence to keep a greater share of remittances. Finally, the results are maintained for rural areas (column 2) and urban areas (column 3). Although, in the case of PROGRESA in urban areas, it has a negative effect on the working condition of men (1.4%).

Finally, we reviewed the possibility that the transfers affected the working conditions of women. On the one hand, transfers can improve the power of women within the household, but on the other hand they can reduce their labor supply and empowerment. Table 7 column 4 shows that remittances reduce women's probability of working by 10.2%, while transfers via PROGRESA do so at 5.9%.

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[9]women who are part of our analysis are between 15 and 60 years of age

Yet, we observed important differences when comparing urban and rural areas. In rural areas, the effect of remittances is almost identical to that of PROGRESA at approximately 6% (see column 5). Yet, for urban areas, we observe that remittances reduce the probability of women being employed by 12.1% and receiving transfers from PROGRESA by 6.2 %.

In summary, we found no evidence that the size of remittances or amount of PROGRESA transfers affect the levels of domestic violence. The results suggest three potential alternative explanations: (1) when the rights over the transfers are clearly specified (as in the case of pensions or PROGRESA) there are no effects on domestic violence regardless the size of the transfer; (2) when the rights are not clearly specified, such as the case of remittances, the men may exercise violence against women to extract part of the remittances received; and (3) the transfrs affect the labor supply of women, reducing their empowerment within the household, and increasing the risk of suffering violence.

4 Conclusion

This paper analyzes the effects of conditional cash transfers (PROGRESA) and unconditional cash transfers from the United States and within Mexico (remittances) on domestic violence for couples living in Mexico. Using fixed effects at the state level, we find that remittances increase by 6.2 percentage points the probability of suffering domestic violence; yet, we do not find that transfers through PROGRESA have an impact on domestic violence. These results are robust when we control for omitted variables that are time-variant using a bounding methodology proposed by Oster (2016).

Additionally, the data allows us to understand in greater detail what type of violence is being affected via remittances. In particular, the results show that receiving remittances increases the likelihood of IPV by 6.2, 4.4, 1.8, and 1.4 percentage points for emotional, economical, physical, and sexual violence, respectively. We found no evidence that the size of the transfers affect the level of domestic violence. Yet, we find a strong association between households that receive remittances and husbands being not employed. This suggests that husbands, in order to compensate this lack of income, potentially exercise violence to extract part of the remittances in possession of the wives.

In terms of public policy, there is an important debate about the potential unintended consequences of monetary transfers as potential mechanism to increase domestic violence against women. The results presented here suggest that when the ownership and objective of the transfer is clearly defined (like in the case of PROGRESA), then the potential of suffering domestic violence is reduced. Yet,

with our data, we cannot infer if this result is a consequence of having clearly identified who is the owner of the transfer, or it is a consequence of clearly labeling the objective of the transfer, or both. A randomized experiment could be an alternative to know the exact mechanism.

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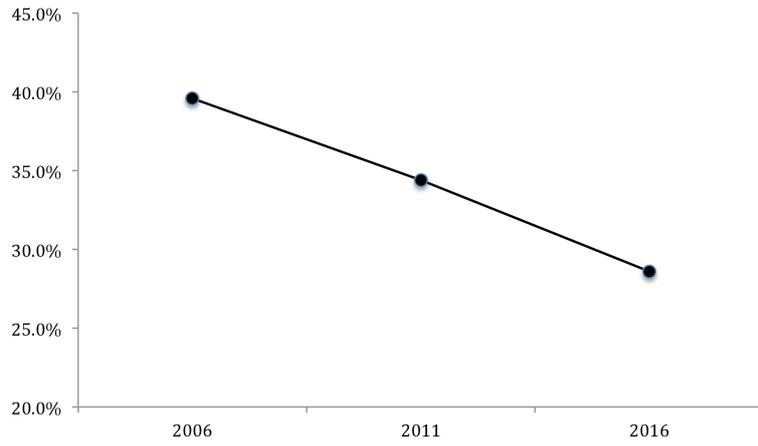# 5   Appendix

Figure 1: Incidence of intimate partner violence

Figure 2: Percentage of households receiving transfers from PROGRESA and re-mittances
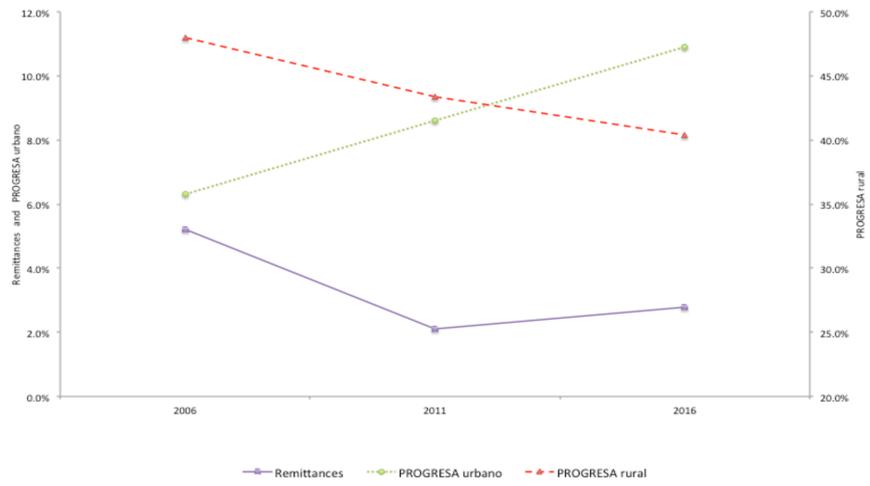
Table 1: Descriptive Statistics

	Remittances %	PROSPERA %	No Cash Transfers %
Panel A. Domestic violence			
Intimate Partner Violence (IPV)	0.41	0.33	0.35
Emotional IPV	0.34	0.27	0.29
Economic IPV	0.23	0.17	0.18
Physical IPV	0.11	0.09	0.07
Sexual IPV	0.06	0.05	0.03
Panel B.Female characteristics			
Woman's age	45.51	39.13	38.76
Woman's Education: 1 Secondary or more 0 Primary or no schooling	0.40	0.37	0.71
Indigenous Woman	0.08	0.21	0.04
Women's work	0.28	0.26	0.45
Blows in your family of origin	0.33	0.33	0.27
You were beaten in your family of origin	0.44	0.40	0.37
Insults in your family of origin	0.34	0.33	0.29
Number of times married	1.13	1.11	1.11
Panel C. Partner and household characteristics			
Partner's age	49.93	43.12	42.09
Partner's Education: 1 Secondary or more 0 Primary or no schooling	0.40	0.33	0.72
Indigenous Partner	0.09	0.22	0.05
Partner's work	0.78	0.92	0.93
Children less 20 years old	1.26	2.42	1.54
Cohabiting couple	0.21	0.27	0.23
Rural: 1 Yes 0 No	0.30	0.59	0.14
Panel D. State characteristics			
Homicides per 100,000 inhabitants	17.19	18.66	18.44
Sex ratio (males to females)	103.22	104.27	103.04
Log (GDP Per Capita)	11.67	11.61	11.74
Inequality (Gini coeffcient)	0.47	0.48	0.47
Unilatral Divorce: 1 Yes 0 No	0.09	0.12	0.12

Source: National Survey on Relationships within the Household

Table 2: FE Estimates: Effects of Cash Transfers on Domestic Violence

	(1) IPV	(2) Emotional	(3) Economic	(4) Physical	(5) Sexual
Remittances	0.062***	0.062***	0.043***	0.020***	0.014***
	(0.007)	(0.007)	(0.005)	(0.004)	(0.003)
PROSPERA	-0.002	-0.002	-0.002	0.006***	0.004***
	(0.004)	(0.003)	(0.004)	(0.002)	(0.002)
Female characteristics	Yes	Yes	Yes	Yes	Yes
Partner/household	Yes	Yes	Yes	Yes	Yes
State characteristics	Yes	Yes	Yes	Yes	Yes
State/Year FE	Yes	Yes	Yes	Yes	Yes
R^2	0.09	0.07	0.06	0.04	0.03
Observations	181974	181966	181956	181964	181928

Note: Standard errors clustered at the state level in parentheses. Female characteristics include age, education,speak an indigenous language, being pensioned, number of times married, blows, beaten, and insults in her family of origin. Partner and household characteristics include partner's age, education, and speaking an indigenous language. In addition, children less than 20 years old and cohabiting status. State characteristics include homicides per 100,000 inhabitants, sex ratio, log (GDP per capita), inequality(Gini coefficient), unilateral divorce, and rural. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 3: Bounding Methodology: Effects of Cash Transfers on Domestic Violence

	(1) IPV	(2) Emotional	(3) Economic	(4) Physical	(5) Sexual
Remittances	[0.062,0.062]	[0.061,0.063]	[0.042,0.044]	[0.017,0.022]	[0.010,0.018]
PROSPERA	[-0.007,0.006]	[-0.008,0.006]	[-0.004,0.002]	[0.001,0.017]	[0.001,0.006]
Female characteristics	Yes	Yes	Yes	Yes	Yes
Partner/household	Yes	Yes	Yes	Yes	Yes
State characteristics	Yes	Yes	Yes	Yes	Yes
State/Year FE	Yes	Yes	Yes	Yes	Yes
R^2	0.09	0.07	0.06	0.04	0.03
Observations	181974	181966	181956	181964	181928

Note: Female characteristics include age, education,speak an indigenous language, being pensioned, number of times married, blows, beaten, and insults in her family of origin. Partner and household characteristics include partner's age, education, and speaking an indiginous language. In addtion, children less than 20 years old and cohabiting status. State characteristics include homicides per 100,000 inhabitants, sex ratio, log (GDP per capita), inequality(Gini coefficient), unilateral divorce, and rural. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 4: FE Estimates: Effects of Cash Transfers on Domestic Violence - Wild Cluster Bootstrapped Standard Errors

	(1) IPV	(2) Emotional	(3) Economic	(4) Physical	(5) Sexual
Remittances	0.062***	0.062***	0.044***	0.018***	0.014***
	(0.008)	(0.008)	(0.006)	(0.005)	(0.003)
PROSPERA	-0.001	-0.002	-0.002	0.006***	0.004***
	(0.004)	(0.003)	(0.005)	(0.002)	(0.002)
Female characteristics	Yes	Yes	Yes	Yes	Yes
Partner/household	Yes	Yes	Yes	Yes	Yes
State characteristics	Yes	Yes	Yes	Yes	Yes
State/Year FE	Yes	Yes	Yes	Yes	Yes
R^2	0.09	0.07	0.06	0.04	0.03
Observations	181915	181907	181897	181905	181869

Note: Wild cluster bootstrapped standard errors in parentheses. Female characteristics include age, education,speak an indigenous language, being pensioned, number of times married, blows, beaten, and insults in her family of origin. Partner and household characteristics include partner's age, education, and speaking an indigenous language. In addition, children less than 20 years old and cohabiting status. State characteristics include homicides per 100,000 inhabitants, sex ratio, log (GDP per capita), inequality(Gini coefficient), unilateral divorce, and rural. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 5: Heterogeneous Effects of Cash Transfers on Domestic Violence with respect to cohabiting, women's education, and men's education

| | Rural | | | Urban | | |
	(1) Cohabiting	(2) Woman Education	(3) Men Education	(4) Cohabiting	(5) Woman Education	(6) Men Education
Remittances	0.031*** (0.011)	0.042*** (0.014)	0.042*** (0.012)	0.064*** (0.011)	0.062*** (0.011)	0.055*** (0.010)
Remittances × Cohabiting	0.015 (0.030)			0.036** (0.016)		
Remittances × Woman's Education: 1 Secondary or more 0 Otherwise		-0.031 (0.032)			0.021 (0.016)	
Remittances × Partner's Education: 1 Secondary or more 0 Otherwise			-0.043* (0.026)			0.033* (0.017)
PROSPERA	0.003 (0.005)	0.003 (0.007)	0.002 (0.007)	0.002 (0.006)	-0.021** (0.009)	-0.017** (0.008)
PROSPERA × Cohabiting	-0.008 (0.010)			0.004 (0.008)		
PROSPERA × Woman's Education: 1 Secondary or more 0 Otherwise		-0.005 (0.010)			0.048*** (0.012)	
PROSPERA × Partner's Education: 1 Secondary or more 0 Otherwise			-0.001 (0.012)			0.042*** (0.010)
Female characteristics	Yes	Yes	Yes	Yes	Yes	Yes
Partner/household	Yes	Yes	Yes	Yes	Yes	Yes
State characteristics	Yes	Yes	Yes	Yes	Yes	Yes
State/Year FE	Yes	Yes	Yes	Yes	Yes	Yes
R^2	0.08	0.08	0.08	0.09	0.09	0.09
Observations	38791	38791	38791	143183	143183	143183

Note: Standard errors clustered at the state level in parentheses. Female characteristics include age, education,speak an indigenous language, being pensioned, number of times married, blows, beaten, and insults in her family of origin. Partner and household characteristics include partner's age, education, and speaking an indigenous language. In addition, children less than 20 years old and cohabiting status. State characteristics include homicides per 100,000 inhabitants, sex ratio, log (GDP per capita), inequality(Gini coefficient), unilateral divorce, and rural. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 6: Mechanisms: Effects of Cash Transfers on Domestic Violence

	(1) IPV	(2) IPV	(3) IPV	(4) IPV
Remittances	0.069***	0.036***	0.091***	0.069***
	(0.011)	(0.011)	(0.016)	(0.011)
Remittances × Size transfer	-0.000*	-0.000***	-0.000	-0.000*
	(0.000)	(0.000)	(0.000)	(0.000)
PROSPERA	0.003	-0.010	0.016	0.003
	(0.005)	(0.007)	(0.010)	(0.005)
PROSPERA× Size transfer	0.000	0.000	-0.000	0.000
	(0.000)	(0.000)	(0.000)	(0.000)
Pensioned				0.008
				(0.014)
Pensioned × Size transfer				-0.000
				(0.000)
Female characteristics	Yes	Yes	Yes	Yes
Partner/household	Yes	Yes	Yes	Yes
State characteristics	Yes	Yes	Yes	Yes
State/Year FE	Yes	Yes	Yes	Yes
R^2	0.08	0.07	0.08	0.08
Observations	116862	27427	89435	116858

Note: Standard errors clustered at the state level in parentheses. Female characteristics include age, education,speak an indigenous language, being pensioned, number of times married, blows, beaten, and insults in her family of origin. Partner and household characteristics include partner's age, education, and speaking an indigenous language. In addition, children less than 20 years old and cohabiting status. State characteristics include homicides per 100,000 inhabitants, sex ratio, log (GDP per capita), inequality(Gini coefficient), unilateral divorce, and rural. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 7: Mechanisms: Effects of Cash Transfers on Labor

	Men			Women		
	(1)	(2)	(3)	(4)	(5)	(6)
	Total	Rural	Urban	Total	Rural	Urban
Remittances	-0.103***	-0.076***	-0.117***	-0.102***	-0.057***	-0.121***
	(0.007)	(0.009)	(0.009)	(0.007)	(0.010)	(0.009)
PROSPERA	-0.005	-0.001	-0.014***	-0.059***	-0.060***	-0.062***
	(0.003)	(0.004)	(0.003)	(0.004)	(0.006)	(0.007)
State characteristics	Yes	Yes	Yes	Yes	Yes	Yes
State/Year FE	Yes	Yes	Yes	Yes	Yes	Yes
R^2	0.08	0.04	0.09	0.06	0.04	0.03
Observations	182192	38823	143369	182904	38930	143974

Note: Standard errors clustered at the state level in parentheses. Controls includ age, education, speak an indigenous language, and number of children less than 20 years old. State characteristics include homicides per 100,000 inhabitants, sex ratio, log (GDP per capita), inequality(Gini coefficient), unilateral divorce, and rural. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 8: Prevalence of IPV by type

	Remittances %	PROSPERA %	No Cash Transfers %
Physical IPV			
pushed you or pulled your hair?	0.08	0.07	0.06
tied you up?	0.00	0.00	0.00
kicked you?	0.02	0.02	0.01
thrown any object at you?	0.03	0.02	0.02
beaten you with his hands or any object?	0.06	0.05	0.04
tried to hang or choke you?	0.01	0.01	0.01
assaulted you with a knife or blade?	0.01	0.01	0.00
fired a weapon at you?	0.00	0.00	0.00
Emotional IPV			
shamed, underestimated or humilliated you?	0.11	0.10	0.09
ignored or not show you affection?	0.12	0.08	0.09
said you cheat on him?	0.08	0.07	0.06
made you feal fear?	0.07	0.06	0.05
threatend to leave you, hurt you, take your childen away or kick you out?	0.09	0.08	0.06
locked you in, forbidden you from going out or being visited?	0.04	0.03	0.02
turned your children or relatives against you?	0.03	0.02	0.02
have spied on you?	0.03	0.02	0.02
threatened you with a weapon?	0.02	0.02	0.02
threatened to kill you, himself or the children?	0.02	0.02	0.01
destroyed, thrown away or hidden things belonging to you or the household?	0.04	0.03	0.03
stopped talking to you?	0.21	0.14	0.18
got angry because household chores are not done like he wants?	0.11	0.09	0.09
Economic IPV			
complained about how you spend money?	0.11	0.09	0.11
been stingy with the household expenses, even though he has money?	0.10	0.06	0.07
not given you the unkeep or threatened you to not giving it?	0.07	0.05	0.04
spent money needed for the household?	0.08	0.06	0.05
appropiated or taken money or possessions from you?	0.01	0.01	0.01
forbidden you to work or study?	0.08	0.06	0.06
Sexual IPV			
demanded you to have sexual relations?	0.06	0.04	0.03
forced you to have sexual things you do not like?	0.02	0.02	0.01
used physical strength to force you to have sexual relations?	0.02	0.02	0.01

Source: National Survey on Relationships within the Household

Table 9: FE Estimates: Effects of Cash Transfers on Domestic Violence

Variables	Treatment	Control	Difference
Number of members of the HH	4.67	4.09	0.58***
Computer	0.02	0.28	−0.26***
Stove	0.44	0.95	−0.51***
Washing machine	0.04	0.54	−0.50***
Refrigerator	0.26	0.74	−0.48***
DVD	0.23	0.40	−0.17***
TV	0.55	0.89	−0.34***
Water heater	0.16	0.44	−0.28***
Cellphone	0.30	0.66	−0.36***
Microwave	0.02	0.20	−0.18***
Toaster	0.00	0.12	−0.12***
Internet	0.01	0.25	−0.24***
Piped water	0.85	0.56	0.29***
Toilet inside hh	0.71	0.86	−0.15***
Electricity	0.98	0.99	−0.01
Landline	0.21	0.32	−0.11***
Cable TV	0.17	0.22	−0.05*
Car	0.05	0.28	−0.23***
Number of observations	328	334	

Note: Chicahuaxtla (Tlaola) and Xaltepec (Huauchinango) are treatment municipalities while Palmar de Bravo and Juan C. Bonilla form the comparison group

Source: Survey of Social Mobility in Disaster Zones

*** p<0.01, ** p<0.05, * p<0.1