

Collective Remittances and the State: The 3x1 Program in Mexican Municipalities

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Abstract

The Mexican 3x1 Program for Migrants is a matching fund scheme that seeks to direct the money sent by hometown associations abroad (collective remittances) to productive uses. The federal, state and municipal governments contribute to the program multiplying by three the contributions sent by migrants abroad. Using municipal level data on program participation for the period 2002-2006, we evaluate the program's capacity to target the poorest municipalities. Since migration has a nonlinear relationship with poverty and marginality, a program that unconditionally responds to project initiatives from migrant organizations is bound to be regressive due to self-selection bias. Indeed, poorer municipalities are less likely to participate and they also receive lower amounts and fewer projects than relatively richer localities. Moreover, we find evidence of a partisan bias: states and municipalities ruled by the PAN are significantly more likely to participate in the program, and electoral support for the PAN is associated with more funds or projects awarded. We argue that substantial changes should be implemented for the program to be a truly progressive poverty reduction tool.

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1. Introduction

Remittance sending is a crucial aspect of the migratory phenomenon. In a large number of countries, they are a substantial proportion of countries' wealth and are located among the most important sources of countries' foreign exchange. For instance, in Mexico, remittances are the second source of revenues after oil exports. They surpass the revenues from tourism and foreign direct investment. Whereas Mexico is the third largest remittance recipient in the world in absolute flows (behind India and China) remittances only amount to some 2.5% of GDP. On the contrary, in other countries, remittances are just a vital source of income: they amount to 27% of Moldova GDP, 16% of El Salvador GDP and 13% of Philippines wealth. The top 19 remittance world recipients receive more than 10% of their GDP in remittances (World Bank 2006).

Given the enormous importance of these capital flows and their potential to contribute to development, governments of sending and receiving countries and international organizations are designing public policies to encourage remittance sending. States are also encouraging the so-called productive use of remittances, so that remittances are not only devoted to current consumption but are also directed to the improvement of living conditions in sending countries. As opposed to individual remittances, whose private character makes them difficult to monitor and influence, collective remittances are in principle apt to be used as a tool to improve the provision of social and productive infrastructure in backward communities.

The Mexican *3x1 Program for Migrants* is one such policy. Indeed, it is taken to be an international reference in the area of collaborative development between *diasporas* abroad and their communities of origin (World Bank 2006; De Castro, García and Vila 2006). The municipal, state and federal governments enter into the picture by tripling the amount of money sent by hometown associations (HTAs) to finance local development projects (electrification, water, road paving and maintenance, housing infrastructure, educational and health projects, and town beautification among others). Since 2002, the Program is implemented at the federal level and today it involves 27 Mexican states and over 1,000 hometown associations abroad. In these years, it has financed more than 6,000 projects with an average annual federal investment of 15 million US\$ (García Zamora

2007). In 2007, its federal budget was about 22 million US\$ and it is expected to increase in 2008.

We evaluate municipal participation in the *3x1 Program for Migrants* and try to assess whether program participation is progressive or not, that is, whether the program is able to target relatively poor municipalities and/or devote more resources or projects to those localities. Given the current design of the program, which gives migrants the initiative in proposing the projects, we argue that the program tends to favor municipalities with high migration and long standing migration tradition, in which migrant associations are both numerous and well organized. However, since poverty imposes an important constraint on the ability to migrate and to send collective remittances (Hatton and Williamson 2002), the municipalities that are most likely to benefit from the program need not be among the poorest ones.

Also, we explore the political economy of the program, specifically, if there is any partisan use of it. The involvement of the three levels of government (municipal, state and federal) plus the migrants raises coordination and red tape problems. Also, the program design pose obvious concerns about the collusion or opposition among the different administrations: does having a common party label at the three levels of government increase the likelihood to be selected into the program, regardless of the degree of poverty?

Using a unique dataset on municipal participation in the *3x1 Program for Migrants* during the 2002 to 2006 period, we study three different measures of program participation: whether any projects were funded in the municipality in a given year, the monetary amount awarded from all projects, and the number of projects funded in the municipality. We find that, after controlling for state and municipal characteristics, high migration municipalities are more likely to participate but the program is progressive only up to a point. Indeed, poorer municipalities are less likely to benefit. Besides, whereas high migration municipalities receive larger amounts and more projects, increased poverty levels are negatively correlated with the monetary amounts and the number of projects awarded to a municipality. We find that very poor municipalities receive lower amounts and fewer projects than wealthier localities with similar levels of migration. This result is robust to different estimation methods and to different operationalizations of our dependent and

independent variables. All in all, we find evidence that the program design has regressive consequences at the municipal level.

Concerning the political economy of the program, our empirical analysis reveals that municipalities and states ruled by the conservative Partido de Acción Nacional (PAN) were more likely to participate in the Program than their PRI (Partido de la Revolución Institucional) and PRD (Partido de la Revolución Democrática) counterparts. Municipalities with larger PAN electoral support were also more likely to participate and to receive more projects. This result holds after controlling for migration and poverty levels. To make sense of this finding, it is important to keep in mind that this Program was launched as a federal policy as an initiative of the PAN under the administration of Vicente Fox (2000-2006), building upon the alleged success of similar programs in some high migration states such as Zacatecas. Also, PAN held power at the federal level for the entire sample period of our study. Moreover, the PAN receives relatively more political support in precisely high migration and low poverty municipalities. Thus, we posit that the regressive consequences of the Program due to the relationship between migration and poverty, may have been reinforced by a political or partisan bias.

All together, these results seriously question the design of this public policy, as it stands now, in its ability to improve the conditions of the poorest localities. There is also a real concern that the program may largely benefit those states where migrants are better organized, to the disadvantage of poor communities of recent but intense migration, and with lower organizational skills. Thus, before engaging in the international promotion of this sort of programs –and El Salvador, Somalia, Ecuador, Colombia and Peru have already adopted it with variants (García Zamora 2007) – a sober reflection is needed about the consequences of policy intervention in the management and allocation of collective remittances.

The paper proceeds as follows. In the next section, we provide an overview of the policy debate about remittances, their impact on development, and common practices on remittance management. In section 3, we explain the precedents of the *3x1 Program for Migrants*, we describe its current format, and hypothesize about the expected relationship between poverty and program participation. In section 4 we present the data and our empirical methodology. Section 5 discusses our main empirical findings and its policy

implications. Finally, since this research cast doubts on the alleged promise of the program to reduce poverty, in our concluding section we propose some amendments and reflect on government intervention in the management of collective remittances.

2. Remittances, Development, and Public Policy

Parallel to the surge of international migration, international remittances have become a crucial capital flow. According to World Bank estimates, remittances amounted to 58 US\$ billions in 1995. In 2004, the figure had increased to 160 US\$ billions, surpassing by far the international flows of Official Development Assistance (79 US\$ billions), and Private Debt and Portfolio Equity (136 US\$ billions). By 2004, remittance flows were as large as Foreign Direct Investment flows (160 US\$ billions) (World Bank 2006). Moreover, according to World Bank estimates, 50% of remittance flows remain unrecorded due to the use of informal channels for transferring currency. In other words, the official remittance figures may seriously underestimate their actual magnitude.¹

Increased awareness and improved accounting methods of these flows have driven the attention of researchers and policymakers to the multiple effects that remittances may have on migrants' countries of origin. In turn, both host and home countries have put in place a panoply of public policies with two main objectives: to encourage the use of formal channels for remittance sending (bank-to-bank transfers, electronic transfers, personal checks, etc.) and to promote the so-called "productive" use of remittances back home (using remittances to finance projects with an eye on employment creation and growth). Notably, these interventions cast doubt on views of remittances as capital flows free from "governmental middleman." On the contrary, state intervention in the management of remittances is pervasive (Spector and de Graauw 2006) and it is expected to increase.

Most research on the impact of remittances in sending countries is based on country, regional, or community level studies from which it is hard to derive general insights. However, some patterns seem to emerge. At the macroeconomic level, scholars have analyzed the impact of remittances on economic development. At the micro-level, a surge of studies based on household surveys have explored the effect of remittance income on household consumption and/or saving decisions. These studies have explored the effect of

¹ Interestingly, between 30 and 45 percent of remittance flows come from South-South migration. China, Malaysia, and the Russian federation are among the top 20 sources of remittances (World Bank 2006).

remittances on poverty and inequality reduction as well as spending in education and health.²

At the macroeconomic level, research points at the stable character of remittances and to their seemingly countercyclical function: remittances have a clear insurance effect in the face of economic crises or natural disasters. For instance, remittances as a share of personal consumption rose in response to the financial crisis in Mexico in 1995 as well as in Indonesia and Thailand during their financial crises of the late 1990s. To the extent that remittances smooth personal consumption by responding positively to adverse shocks, they may help to counter economic recessions. Also, remittances may have a positive aggregate impact on economic growth if they ease the credit constraints of poor households. This, in turn, may encourage remittance-recipient households to undertake productive investments with potentially positive outcomes for local employment and growth (World Bank 2006; OECD 2007).³

On the negative side, scholars have surveyed to what extent large remittance flows resemble natural resource windfalls and other cyclical flows. “Dutch disease” effects caused by remittances (that is, the appreciation of the real exchange rate following large and sustained inflows of foreign exchange) may be of concern in countries with sensitive tradable sectors. Under this scenario, the export sector may suffer as a result of sustained remittance inflows (Fajnzylber and López 2007). Another potential negative outcome of remittances may have to do with labor and leisure choices in recipient households: once they receive remittances, people may reduce their working hours, reducing labor supply, which in turn results in an aggregate economic slowdown (OECD 2007).

At the microeconomic level there is an extensive yet inconclusive research that explores the impact of remittances on poverty and inequality, as well as on households’ decisions to consume or to invest in education or health. According to the World Bank (2006) remittances seem to have a positive impact on poverty reduction yet a very modest effect on income inequality. Remittances are believed to have reduced the poverty headcount ratio in countries like Uganda, Bangladesh or Ghana. Research on Mexico shows

² The World Bank 2006 Report “Global Economic Prospects. Economic Implications of Remittances and Migration” presents a comprehensive review of the economic aspects of international migration.

³ However, these decisions are endogenous to the initial investment conditions in recipient countries: remittances will be more likely to translate into productive projects in those communities and localities with a relatively trustworthy financial sector.

that in Guerrero and Oaxaca, remittances lowered the share of population living in poverty by 2 percentage points. Also, Mexican children in households with migrants completed more years of schooling (Hanson and Woodruff 2003). Remittances are associated with lower infant mortality and higher birth weights of children left behind (Hildebrandt and McKenzie 2005). Yet, less optimistic views report that these decisions are restricted to the households located in the middle and upper middle segments of the income distribution, thus perpetuating if not increasing income inequality (Fajnzylber and López 2007). Also, a very high percentage of remittances are devoted to current consumption. This is the obvious consequence of remittances being the main source of income in a large share of remittance-recipient households. According to the Inter-American Development Bank (2004), the share of remittances spent on household consumption is 78% in Mexico and Central America, while spending in real state and education is low. On the other hand, Durand, Parrado and Massey (1996) contend that increased consumption does have a multiplier effect on aggregate demand and growth.

It is clear that governments have plenty of reasons to try to influence both the amount of remittances that are sent back home and their uses. On the negative side, remittances may affect economic growth if they damage the export sector via exchange rate appreciation and/or if remittances change the propensity to work. On the positive side, remittances at least help to alleviate the living conditions of families with members abroad.⁴ And at best, remittances may be successfully channeled to enhance the development of communities of origin –the so called meso level (OECD 2007).

Spector and de Graauw (2006) provide a description of public policy interventions during the so-called life cycle of remittances (before, during, and after remittance sending). Obviously, migration regulations have an impact on the amount of remittances sent back home. Thus, policies that facilitate the emigration, legal recognition, and job placement abroad increase remittance flows (Spector and de Graauw 2006). Policymakers have intervened to regulate transfer services and to encourage the use of formal remittance channels, particularly the official banking sector. Other policies directed at preserving the political and social attachments of migrants abroad (such as providing voting rights, dual

⁴ It should be noted that there is an important normative debate regarding the legitimacy of states to intervene in the handling of remittances: the way in which these private capital flows are ultimately employed is indeed a prerogative of the recipient families.

citizenship, and providing cultural and educational programs) aim at keeping migrants' loyalties alive in the event of family reunification and the permanent settlement of migrants in receiving countries.

Finally, once remittances are in the sending countries, governments have offered incentives to save and to invest, mostly via tax breaks. Governments have also encouraged the participation of migrants in the development of community projects. In particular, sending states around the world have courted organizations of migrants abroad, encouraging their organization and activism building upon their spontaneous initiatives to finance community projects and to engage in philanthropic activities. Overall, these public interventions in the management of collective remittances challenge the view of these capital flows as alien to political influence.

Mexico has been an active country in all these fronts. Since the 1990s, consular activity and official programs to assist migrants abroad have multiplied. Starting in 1997, Mexico allowed for dual nationality. In 2006, Mexicans abroad were allowed to vote in the presidential election. From 2002, under the US-Mexico Partnership for Prosperity Program, Mexicans could use the so called *matrícula consular* to open bank accounts in the United States and transfer money, regardless of their legal migration status. Since 1999, the cost of remittance sending in the US-Mexico corridor has been reduced by about 60%. And state and federal administrations have courted the Mexican *diaspora*, seeking their help to improve the living conditions of their communities of origin (Burguess 2005; Canales 2005; Alarcón 2006; Spector and De Grauw 2006; World Bank 2006; Fernández, García and Vila 2006).

The *3x1 Program for Migrants* is one such policy. Whereas the Program has been publicized in policy circles as an example of a transnational policy, "a careful evaluation of support to HTAs through matching grant schemes and other means is yet to be undertaken." (World Bank 2006, 94). Indeed, numerous discussions of the program exist (Moctezuma 2002; Goldring 2004; García, 2006, 2007; Iskander 2005, Moctezuma and Pérez 2006; Burguess 2005), but they are mostly based on anecdotal evidence or in case studies whose selection is not always theoretically justified. Since most of these studies focus in high migration states or in localities with well organized migrants, they cannot offer any counterfactual comparison between communities that participate in the program and

otherwise similar ones that do not participate. Nonetheless, it is remarkable that these evaluations point out to a relatively poor impact of the program in community development per se, while placing its virtues somewhere else, such as in strengthening the linkages between migrants and their communities, or improving local governance and accountability. The studies by Burgess (2005, 2006) and De Graauw (2005) anticipate in different ways the hypothesis that we systematically test here: because the Program is based on migrants' demands, organized migrants have an advantage in project allocation, which does not necessarily coincide with the program's stated objective of reaching the poorest areas. Indeed, as our evidence indicates, it does not.

3. Mexican migration, poverty, and the 3x1 Program for Migrants

As a Mexican scholar reports, the international migration of Mexicans to the US at the start of the 21st century can be summarized by three factors: a common border of more than 3,000 Km, a long-lasting tradition of more than 100 years, and a diversity of origins in Mexico and of destinations in the US (Durand 2003). Today, 96.2% of Mexican municipalities register international migration. Approximately 450,000 mostly young and male Mexicans migrate each year.⁵ Over 1 million Mexican households benefit from remittance flows. For 40% of them, remittances represent their only income (García Zamora 2005; Soto and Velázquez 2006); in recent years, migration intensified, its destination became more permanent, and their origins became more urban and diversified (CONAPO 2006).

The precedents of the *3x1 Program for Migrants* are found in the state of Zacatecas, which is the state with the strongest and oldest migratory tradition in Mexico. The Federation of Zacatecans Clubs, which comprises over 70 HTAs located in Southern California, started to raise funds to help expatriates abroad (mostly in the event of illness or death) and to fund social and recreational projects back home already in the early 1960s.

Building upon these initiatives, in 1986 the 1x1 Program was born under the auspices of PRI governor Genaro Borrego. In its initial design, the program contemplated only the state support to double the amount of money sent by migrants associations. Although just 28 projects were carried out under the program between 1986 and 1992, the

⁵ Between 2000 and 2003, the Mexican population residing in the US grew by 14% and it represents 30% of total US immigration today.

initiative encouraged the Federation of Zacatecan Clubs to undertake more and more philanthropic activities. Parallel to Carlos Salinas' (1988-1994) interest in courting migration, the Zacatecan initiative received further support under Borrego's successor, Arturo Romo, to create the program of International Solidarity among Mexicans, also known as the 2x1 Program. Under this scheme, not only the state but also the federation matched the contributions of HTAs. Despite a temporary backlash in the support of the program under Ernesto Zedillo's term (1994-2000), the program continued to operate without the support of the federation but instead with the support of the municipalities. Under PRD governor Ricardo Monreal, the program gathered momentum, in part as recognition of the crucial support of migrants to Monreal's platform. By 2002, in the state of Zacatecas, a total of 868 projects had been funded and 464 million pesos had been invested (Burguess 2005). In the meantime, the initiative had been replicated by the state governments of Jalisco, Durango and Guanajuato.

Under Carlos Salinas' term, the initiatives to encourage the formation of HTAs abroad multiplied. In 1989, Salinas created the *Paisano Program*. In 1990, he launched the Program for Mexican Communities Abroad, which was based in the Foreign Ministry and operated through a network of Mexican consulates, institutes and cultural centers. The Program for Mexican Communities Abroad promoted in turn the formation of State Offices for Mexicans Abroad. Among other things, these offices promoted the formation of HTAs and publicized schemes of collaborative partnership among HTAs and their communities of origin. It is not coincidental that during this period, the number of migrant clubs abroad surged (Orozco 2003; Orozco and Welle 2004). Between 1995 and 2002, the total number of registered clubs grew from 263 to 580 and they federated at an increasing pace (Burguess 2005). Alarcón reports that there are 2,000 Mexican HTAs in the US of which some 700 are formally registered (in Spector and de Graauw 2006).

When Vicente Fox reached power in 2000, he renewed his commitment to work with HTAs and restored the federal support to collaborative programs that Ernesto Zedillo had suppressed. Fox created the *Instituto para los Mexicanos en el Exterior* and resurrected the matching grant program with federal support. The 3x1 Program—Citizen Initiative started in 2002, and later on became the *3x1 Program for Migrants*.

The purpose of the Program is to increase the coverage and the quality of basic social infrastructure in localities with a high proportion of population living in poverty, social backwardness or high migration, following the investment initiatives of migrants living abroad (Soto and Velázquez 2006). This is not the only objective of the Program. It also aims to strengthen the links between migrants and its communities through collaborative development projects and the organization of migrants abroad (Ministry of Social Development).

In its current design, the *3x1 Program for Migrants* is administered by the Mexican Ministry of Social Development (SEDESOL) following the initiatives of hometown associations. A Committee of Validation and Attention to Migrants (COVAM), which includes representatives of the four parties involved (migrants, municipal, state, and federal government via SEDESOL), prioritizes and decides on the technical viability of the projects. Each of these parties contributes 25% of the total cost of the approved project. Different participation shares from different government levels is possible: for instance, the federation can cover up to 50% of the project if its social impact justifies it.⁶ However, this is rarely observed in practice. Since the maximum federal participation is about 72,000 US\$, the total cost of projects funded can be as high as 290,000 US\$.

According to our data, all Mexican states except Baja California Sur, Coahuila, Quintana Roo, and Tabasco have already participated in this initiative. However, the percentage of municipalities benefiting from the program has ranged from just 10 percent in 2002 (239 municipalities out of 2,435) up to 18 percent in 2005 (446 municipalities out of 2,438).

We evaluate the program from the perspective of its ability to target communities living in poverty and social backwardness as opposed to reaching only communities of high migration. Given that the program design gives the initiative to HTAs, it certainly prioritizes the areas of highest migration tradition. However, the program objective of targeting the poorest communities will only be achieved as long as the areas of highest migration are also among the poorest ones. As it turns out, this is not the case. For instance, in 2007, 68% of the federal money was invested in municipalities of low and medium poverty and only 24% was invested in poor and very poor municipalities (Aparicio et. al 2007). Moreover,

⁶ www.sedesol.mx

70% of all migrants' clubs are affiliated with the states of Guerrero (PRD), Guanajuato (PAN), Jalisco (PAN) and Zacatecas (PRD) (Zárate 2005). Not surprisingly, in 2007, Zacatecas, Jalisco and Michoacán (PRD) concentrated 59% of the projects and 54% of the total federal resources allocated to the Program (Aparicio et. al 2007).

To the extent that matching grant programs respond to the income distribution of the actors involved, it is expected that wealthier communities will be more likely to participate than poorer ones. Therefore, a program that *unconditionally* supports migrant and hometown associations' initiatives will not be progressive if poverty and migration are not directly correlated. If this is the case, the program will be biased against poor communities. On the other hand, to the extent that hometown associations require time to emerge and a certain level of organizational skills, they will be more likely to succeed in relatively well off communities. Based on this reasoning, we propose the following hypothesis:

H1 – self selection bias: Given that migrants self-select into the 3x1 program, and that Mexican migration is not evenly distributed relative to poverty, the program disproportionably benefits relatively well off municipalities to the detriment of poor ones.

Systematic research on the politics of collective remittance management is practically non-existent. There is incipient research on the political consequences of remittances at the local level, but they refer to private, not collective, remittances. For instance, Puftze (2007) reports that the additional income from remittances may weaken the power of clientelistic arrangements and vote buying at the local level. The author reports a greater likelihood of opposition winning in Mexican municipalities where a high proportion of households receive remittances. However, anecdotal case studies suggest that particularistic uses may not have been rare. This seems to be especially true in municipal politics, where migrants' money can alleviate the meager finances of the local government (Valenzuela 2006). Thus, migrants have been actively courted by municipal and state politicians, and they had been granted representation in local politics in return (Jiménez 2008).

Some examples may illustrate the particularistic use of the program. In their study of the 3x1 Program in Jalisco, Hernández and Contreras (2006) report that local politicians

have used it to increase their popularity and try to buy votes. In her study of the municipality of Jala, in the state of Nayarit, Imaz (2003, 396) asserts that “migrants always took position and in each election they were requested to give their monetary support and exert their influence in favor of a particular candidate...They [migrants] were actively sought because they could mobilize people.” In turn, migrants declared that local politicians “*los politiquen*” (Imaz 2003, 400). As mentioned above, in her account of *3x1 Program* evolution, Iskander (2005) explains that the momentum given to the Program in Zacatecas after governor Monreal election –which included cabinet-level positions for migrants– was part of Monreal’s acknowledgment to HTAs in return for the support given to his candidacy. All this suggests that remittances have empowered migrants as strategic municipal political allies. Indeed, knowing the resources they possess, migrants have been able to shape the rules of the Program to secure their monopoly: Burgess reports that in Zacatecas, migrants pressed to have the rules changed so that only migrants belonging to a registered HTA –as opposed to any interested group or individual– could finance projects under the Program.

The combination of empowered migrants and clientelistic politics may have fomented the use of the Program as a rewarding tool. This casts doubts on a somewhat optimistic vision of migrants clubs and international migration in general as an engine of democratic change in their communities, via the import of practices and values to which they are exposed while abroad. In her study, Imaz concludes that (p. 416) “it is hard to distinguish in theory when these groups support democratic processes and when they do not.” In a similar vein, Bravo (2007) finds that out-migration seems to depress political engagement in Mexico, and that individuals who receive remittances or expect to migrate are significantly less likely to turn to vote than those who do not.⁷

For now, we lack the necessary information to systematically test to what extent the program is being used as a rewarding political tool, or whether it is empowering migrants in local politics. Still, we are able to explore the politics of the program by testing for different sorts of political or partisan bias in fund allocation. On the one hand, a federal PAN administration ruled over the entire sample period we survey. Thus, SEDESOL, the federal

⁷ In the same vein, Spencer and Cooper (2006) alert that HTAs may create barriers for broader political participation.

counterpart of the Program, could bias funds and project allocation in favor of PAN-ruled states or municipalities. Indeed, we argue that PAN may have electoral reasons to do so since its support is stronger in relatively rich municipalities with high migration. Note that if this is the case, the regressive outcome mentioned before would be reinforced through this political mechanism. On the other hand, a cursory look at the tripartite involvement of different levels of government provides ground to hypothesize that shared partisanship is likely to bias resource allocation: states are likely to be more supportive of projects proposed by municipalities with a similar party label. Thus, we hypothesize that sharing partisanship between the municipal and state governments will increase the chances of program participation. Therefore, we expect that:

H2 – partisan bias: All else equal, states and municipalities ruled by the PAN as well as PAN strongholds, are more likely to participate, receive more funds and projects, than those dominated by other political parties. Moreover, shared partisanship between municipal and the state governments increases the likelihood of successful program participation.

4. Data and empirical methods

To test our hypotheses, we collected data from the *3x1 Program for Migrants* for all Mexican municipalities that participated during the 2002 to 2006 period (SEDESOL). The dataset includes yearly information on whether or not a given municipality participated in the program, the total amount invested, and the number of projects awarded in any given year. Note that we do not have information about the full pool of project applications. Instead, we have information only on the projects that were selected. We compiled municipal level data on migration intensity (CONAPO), degree of poverty or marginality, public goods provision, municipal finances (INEGI), and electoral returns by party (CIDAC).⁸ On average, we have data for more than 2,400 municipalities and five years of program operation, which amounts to over 12,000 municipality-year observations.

⁸ We have data for every single project awarded in the sample period but we consolidated the data at the municipal level because most demographic, economic and political covariates are only available at the municipal level.

To assess the effect of migration, poverty and political covariates on participation in the 3x1 Program in Mexican municipalities, we estimate a series of regression models of the following form:

$$Pr(\text{PARTICIP}_{ijt} = 1 \mid \mathbf{X}) = F(\beta \text{MIGRATION}_{ijt} + \chi \text{POVERTY}_{ijt} + \delta \text{SOCIODEMOG}_{ijt} + \phi \text{POLITICS}_{ijt} + \mu_j + \nu_t) \quad (1)$$

$$\text{PARTICIP}_{ijt} = \alpha + \beta \text{MIGRATION}_{ijt} + \chi \text{POVERTY}_{ijt} + \delta \text{SOCIODEMOG}_{ijt} + \phi \text{POLITICS}_{ijt} + \mu_j + \nu_t + \varepsilon_{ijt} \quad (2)$$

where the subscripts refer to the i -th municipality in the j -th state, and t refers to a given year. The dependent variable, program participation, is measured in three different ways. First, PARTICIPATION is a dichotomous variable indicating whether a particular municipality in a given year had any project funded by the program. Second, the variable AMOUNT measures the total amount of funds (from all four sources, in 2006 constant pesos) invested in a particular municipality-year as a result of program participation. Finally, PROJECTS measures the number of projects that were awarded to a particular municipality in a given year. For example, in 2003, Tanhuanto, a municipality located in the state of Michoacán, participated in the *3x1 Program* with six projects and a total investment of approximately 95,000 US\$.

Our main independent variables are different measures of migration intensity, poverty, and political conditions.⁹ Measures of migration and poverty were obtained from CONAPO and INEGI, respectively. The variable MIGRATION is an ordinal variable that classifies municipalities in six categories ranging from high, very high, medium, low, very low and no migration municipalities. This variable is a categorization of the MIGRATION INDEX, a continuous variable that we used in some of our statistical specifications. The MIGRATION INDEX is principal-components score based on census data regarding the number of family members that live abroad, circulatory migration, and return migration in the household. The measure of POVERTY is a categorical variable that classifies Mexican municipalities in high, very high, medium, low and very low poverty or marginality. It is

⁹ Note that we consider migration intensity as a proxy of the number of HTAs (about which we do not have direct information). However, the capacity for collective action of HTAs and their organizational skills are an important unobservable variable.

derived from the continuous POVERTY INDEX, which summarizes information on literacy rates, income levels, and social infrastructure in each municipality. For instance, according to our data, Tanhuato is reported as a high migration and low poverty municipality in 2003.

SOCIODEMOG is a vector of variables that control for (the log of) population size as well as other measures of infrastructure, such as the percentage of households in a municipality in which water, sewage, and electricity are available (INEGI). In Tanhuato, 92 percent of households had water, 81 percent sewage, and 97 percent had electricity coverage.

To test our second set of hypotheses, the POLITICS vector includes indicator variables that capture the party label of municipal and state governments. These variables were set to control for governments led by the PAN, PRI or PRD—the three main political parties in Mexico. In some specifications, we also consider the VOTE SHARES of each of these parties in municipal races, and the vote share difference between the PAN and PRI. Also, to measure electoral competitiveness, we use the MARGIN of victory between winner and runner up in municipal races. Finally, SHARED PARTISANSHIP is a dummy variable that equals one when the municipality and the state are ruled by the same political party, regardless of their party label. Finally, μ_j and ν_t represent state and year fixed effects, respectively, which we use in our models to capture the time invariant heterogeneity of the Mexican states as well as any systematic year by year changes in the size of the Program or its operation rules.¹⁰

Our estimation techniques vary according to the nature of the dependent variables. Thus, for the binary dependent variable, PARTICIPATION, we estimate maximum likelihood logistic models as indicated by equation (1). For the AMOUNT variable, we estimate OLS models following equation (2). To verify the robustness of our estimates for the AMOUNT variable, we estimated both a two-way fixed effects OLS model and a Heckman sample selection model. The first stage or selection equation of the Heckman model estimates the likelihood of Program participation using a probit model, which is then

¹⁰ We included state instead of municipal fixed effects for several reasons: first, because we had a few time invariant variables, which prevented us from using municipal effects. More substantively, states also have a strong influence in program participation because they have to commit resources ex ante via agreements with SEDESOL. Moreover, since migration has been historically concentrated in certain regions, four states concentrate almost half of the funds and projects.

used in a second stage to estimate the amount awarded while controlling for the program selection process. As we stressed before, program participation depends on migrants' initiatives, which may create a bias in favor of municipalities of high and long lasting migration tradition. Thus, we use the MIGRATION INDEX as the selecting variable in the Heckman model.

Since the PROJECTS dependent variable is a count measure, we estimate another maximum likelihood model, in this case assuming a negative binomial distribution. Our over dispersion tests suggested that a negative binomial was preferred to a Poisson distribution. Furthermore, since only a fraction of all municipalities participate in the program, we estimated a zero inflated negative binomial model (ZINB) for the number of projects that a particular municipality was awarded in a given year.¹¹ As done in the Heckman models, we used the MIGRATION INDEX to predict the cases with no projects awarded at all.

Figure 1 below presents two box plots that illustrate the relationship between migration and poverty. We measure migration using CONAPO's index of migration intensity (left panel) and the percentage of households that receive remittances (right panel). As the figure reveals, migration is greater in medium and low marginality municipalities. The richest and poorest municipalities have the lowest migration intensity. In fact, the *lowest migration* intensity is found in *very high* poverty municipalities. Similarly, the highest percentage of remittance recipient households is located in municipalities of low and medium poverty. And again, the poorest municipalities have the lowest percentage of remittance recipient households. Taken together, these descriptive data point out a nonlinear relationship between migration and poverty: very affluent and very poor municipalities have the lowest migration intensity and the lowest percentage of remittance recipient households. Given this curvilinear relationship, we include the POVERTY INDEX and the square of it in our specifications.

*** Figure 1 about here ***

¹¹ The number of projects awarded had a clear inflation of zeros because only a few municipalities participate in the Program. A Young test to decide between a standard negative binomial and a zero inflated negative binomial favored the latter.

Recall that the initiative to participate in the *3x1 Program* correspond to migrants' HTAs. But HTAs take time to emerge and acquire the necessary organizational skills. As a result, HTAs are likely to concentrate in areas not only of high migration but also of long standing migration tradition. Given this premise, it is not surprising to find preliminary evidence suggesting that high migration municipalities, that is, municipalities relatively affluent, have been the ones most often benefited by the program.

Figure 2 below illustrates these relationships. The box plot graphs the number of projects and the total amount of resources devoted by the program to municipalities of different poverty levels during the 2002 to 2006 period. As expected, low and medium poverty municipalities were awarded more projects and larger funding. By granting migrant organizations the initiative to self select projects, the program design seems to produce a perverse outcome: since organized migrants do not come from the poorest Mexican municipalities, the program is biased against poor and very poor communities despite its stated objective to target poor communities.

*** Figure 2 about here ***

If the program favors relatively well off municipalities to the detriment of poor ones, can this bias be partly motivated by partisan or political reasons? Figure 3 depicts municipal election returns for different migration and poverty categories. It suggests that the PAN may have good reasons to actively support the program, for the PAN is stronger in low poverty (more affluent) municipalities with high migration. Whereas the PRI leads in high poverty municipalities regardless of their migration level, the PAN support increases with migration intensity in municipalities with medium to very low marginality. Thus, a political bias may in fact reinforce the self selection bias that we have hypothesized, yielding a more regressive outcome: if the program has a bias in favor of the PAN, it will not only benefit high migration municipalities but also favor the relatively richer ones.

*** Figure 3 about here ***

Figures 1 and 2 lend support to our first hypothesis regarding the self-selection bias of the *3x1 Program*. And Figure 3 above is suggestive of a potential partisan bias in the selection of municipalities that participate in the program to the advantage of municipalities where the PAN electoral support is stronger. However, these figures only indicate pair wise unconditional relationships, that is to say, they do not control for other factors that may determine successful participation in the *3x1 program*. To verify which ones of our hypothesized biases is supported by evidence in a more controlled setting, we now turn to multiple regression analysis.

5. Results

To estimate the conditional effect of migration, poverty and political covariates on participation in the *3x1 Program* in Mexican municipalities, we estimate equations (1) and (2) with a series of multiple regression models using a panel dataset that comprises data from more than 2,400 municipalities over the 2002 to 2006 period. TABLE 1 presents descriptive statistics of our data for all municipalities in the sample period, and for the subset of municipalities that participate in the program. About 13 percent of municipalities have participated in the program, with an average investment of 170,000 US\$ on 3.4 projects. As the table indicates, the poverty levels of participating municipalities are below the full sample average, and their migration intensity is well above average. Water, sewage and electricity coverage is also higher than average in participating municipalities. Relative to overall sample averages, states and municipalities ruled under PAN and PRD are overrepresented in the participating sample, whereas the PRI is underrepresented. Shared partisanship between local and state governments is also higher than average, while electoral competitiveness is slightly lower.

*** Table 1 about here***

To test whether these differences remain significant when holding other factors constant, we estimate a set of multiple regressions. TABLE 2 summarizes the results from six different model specifications for our three measures of program participation: whether the municipality participated in the program or not, the total amount received, and the number of projects awarded to a municipality in a given year. Our main independent

variables are migration and poverty levels, controlling for other socio-demographic characteristics of municipalities.

Model 1 in TABLE 2 presents a baseline logit estimation of program participation, coded as a binary outcome. Controlling for state and year effects, the model indicates that the likelihood of program participation significantly increases with migration intensity. On the other hand, high and very high poverty municipalities are also more likely to participate than localities with low or very low poverty levels. Program participation also increases with (the log of) population size, a variable that is strongly correlated with municipal income—a result that will prove to be robust in all other models. Also, water and sewage coverage positively affect participation.

In principle, the finding that program participation is increasing with poverty levels seems to run against our hypothesis concerning the regressive character of the *3x1 Program*. But focusing on participation as a binary outcome obscures the fact that some municipalities in fact receive more funds and projects than others. Thus, model 2 turns the attention to the total amount devoted by the program to a given municipality. This model presents OLS estimates for program amounts with two-way state and year fixed effects. As expected, results indicate that municipalities with high or very high migration receive significantly larger amounts (between 15,000 and 25,000 US\$ more) than those with lower migration. However, now we find that poverty levels have no statistically significant impact on the amounts received. In other words, the amounts awarded by the Program seem to be unrelated to the relative backwardness of municipalities.

Given that migration intensity is not randomly or evenly distributed in Mexican municipalities, it may be the case that our previous OLS results have a sample selection problem: if some municipal or state features influence both program participation and the amounts received, OLS estimates may be biased. Moreover, since we only observe the amount of money awarded to participating municipalities, and zero otherwise, we need to correct for the incidental truncation of the amount variable. Models 3 and 4 in TABLE 2 addresses this issue with a Heckman sample selection estimation where we use the migration index as the key selecting variable.¹² Once we control for the selection process

¹² We decided in favor of the continuous indexes of poverty and migration in the models that follow for two reasons. Some models did not converge when including too many dummy variables, and, as model 1 indicates, migration and poverty had a positive and monotonic effect on program participation.

before estimating the amount regression, we find that indeed the poverty index is positively correlated with program selection but up to a point. Indeed, the quadratic term has a negative and significant sign, which is coherent with the curvilinear relationship that we found in the descriptive statistics and suggestive of a regressive outcome in program participation. In fact, the poorest 20% of municipalities is less likely to participate. Moreover, poverty is negatively correlated with the amounts received (significant at the 10% level).¹³

To assess whether these results hold if we focus on the number of projects awarded (a count variable) instead of the amounts, models 5 and 6 in TABLE 2 present estimates from a zero inflated negative binomial regression (ZINB). As in our previous Heckman model, we use migration index and poverty (plus a quadratic term) to predict program non-participation before estimating the count model.¹⁴ Model 5, which is the inflation equation, indicates that the probability of not being awarded a project decreases on migration but increases with poverty. In turn, the participation equation (Model 6) indicates that increasing poverty levels led to significantly fewer projects awarded, controlling for population size, coverage of public services, and year effects.

To sum up, our regression estimates indicate that migration intensity and population size are very good predictors of program participation for every one of our three dependent variables. Poverty levels measured as an index variable are positively correlated with the likelihood of program participation as a binary outcome, but only up to a particular level of marginality after which the likelihood of program participation decreases. On the other hand, poverty is negatively and significantly correlated with amounts received and the number of projects awarded to municipalities—a result that lends support to our self-selection hypothesis.

¹³ We included a quadratic term only in the selection equation. When a quadratic term was included in the AMOUNT equation, we found signs of a progressive outcome (U-shape) with more funds awarded to more backward communities. However, further exploration revealed that this result was due to 65 municipal-year outlier observations.

¹⁴ In ZINB models the first stage or inflation equation estimates a logit model of non-participation and, as expected, the migration coefficient switches sign. This model only includes time effects because it did not converge when using two-way fixed effects. ZINB estimations can be very sensitive to the specification of the inflation equation (the equation that predicts non participation). For this reason, we run a standard Negative Binomial as robustness check. The substantive results hold: the number of projects increases with migration and it is regressive with respect to poverty. We thank Brian Burgoon for this comment.

Table 2 about here

To test our political bias hypotheses, TABLE 3 adds a number of political covariates to the previous Heckman and ZINB regression models. In Model 1, we included dummy variables that indicate whether the PAN or PRI control the state and municipal government, using PRD governments as the comparison category. Results indicate that, after controlling for migration, poverty, and other covariates, PAN states and municipalities were significantly more likely to participate in the program. Once selected among the participating municipalities, however, PAN governments are not awarded any more resources than their PRI or PRD counterparts (Model 2).

To test whether the program favors any partisan strongholds, Models 3 and 4 include both PAN and PRI municipal vote shares. We find evidence suggesting that municipalities with stronger PAN support were more likely to participate in the program than others. In contrast, Model 4 indicates that PAN electoral support does not impact amounts any more than that of the PRD, whereas PRI support is negatively correlated with amounts awarded. This result means that, all else equal, there are larger amounts awarded in PAN or PRD strongholds, to the detriment of PRI core localities. Moreover, Models 5 and 6 indicate that municipalities in which PAN electoral support is particularly high relative to the PRI are more likely to be selected into the program and to receive more resources.

Besides partisan biases and migrant self-selection, it may also be the case that the authorities from municipalities with more contested elections seek out to participate and attract more program resources to improve public good provision in competed settings. Finally, since the program requires the collaboration of state and municipal governments, it may also be the case that when these two levels of government belong to the same party, they are more likely to coordinate and benefit from the program. Models 7 and 8 in TABLE 3 test these hypotheses by including the margin of victory in municipal elections -- a proxy of electoral competitiveness -- and the shared partisanship dummy variable. As it turns out, none of these two variables have an impact on the participation or amount equations. These negative findings can be interpreted as evidence that the program is not being used to target competitive localities or to punish juxtaposed governments.

Models 9 to 12 in TABLE 3 reproduce the previous analysis but turn attention to the number of projects awarded using ZINB models. The inflation equation shows as before that the probability of non-participation is negatively related to migration and has a J-shape relative to poverty (poorer municipalities are more likely not to participate). One robust result across all specifications is that states governed by the PRI received significantly fewer projects than their PAN or PRD counterparts. According to Model 10, municipalities with greater PAN support received more projects than other party strongholds, a result that is also confirmed by Model 11. Finally, Model 12 indicates that the margin of victory does not impact the amount of projects awarded, whereas shared partisanship between state and local authorities yields to more projects awarded. As before, the results concerning migration and poverty remain robust in these specifications: Whereas high migration municipalities receive more projects, poorer and less populated municipalities, where migrants are likely to be less well organized, are awarded fewer projects.

In sum, we find evidence of significant partisan effects in the implementation of the *3x1 Program*. We find that PAN states and municipalities are more likely to participate in the program, but with no additional amounts or projects, than those ruled by other political parties. Municipalities with larger PAN support are also more likely to participate than others. Moreover, PRI strongholds receive lower amounts than those of the PAN or PRD after controlling for migration intensity. Nonpartisan political factors, such as election closeness or juxtaposed governments do not affect any measure of program participation.

It is important to remark that the political bias may be caused by an alternative mechanism that we cannot test: given that the *3x1 Program* is a demand-driven policy, migrants may prefer to invest in PAN municipalities. Indeed, recent studies suggest that migrants hold anti-PRI political preferences (Bravo). If this is the case, the mechanism would not be one of PAN politicians biasing the selection of projects but rather one of migrants selecting PAN municipalities for their investments. Note that both mechanisms are plausible and likely to operate in tandem. Yet, regardless of which mechanism prevails, our regressive argument holds: because high migration PAN strongholds are relatively affluent (see Figure 3), the political bias reinforces the self-selection bias.¹⁵

¹⁵ A very interesting research agenda has explored the use of clientelistic vs. programmatic spending in Mexican municipalities (Cayeros et al 2007). According to this research PRI politicians used a mixed of private and public goods to target strongholds and competed municipalities respectively. Whereas this

Our results concerning migration and poverty are robust to the inclusion of political covariates. Whereas increased migration impacts program participation, poverty levels have a curvilinear, negative or non-significant impact on participation, number of projects and the amounts awarded. Overall, both geography and politics reinforce each other in producing a regressive outcome.

*** Table 3 about here***

Plotting predicted probabilities of participation may help clarify the relative impact of migration, marginality and partisan biases on the probability of participation as well as in the amount of funds received. In order to do this, we rely on the Heckman selection models 1 and 2 from TABLE 3 to estimate predicted probabilities of participation as well as the predicted amounts. Figure 4 shows that migration positively affects the probability of program participation. Moreover, PAN states and PAN municipalities are more likely to participate than PRI or PRD governments. Figure 5 shows that poverty has a curvilinear impact on the probability of program participation: rich and poor municipalities have less probability of participating (the figure is for PAN municipalities located in PAN states). On the other hand, model 2 in TABLE 3 also reveals that a one unit increase in the poverty index *decreases* the amount of money awarded by about 20,000 US\$. According to the count models, one standard variation change in the level of poverty reduces the expected count of projects by 0.75 whereas a one standard deviation increase in migratory intensity increases the expected count of projects in 1.33. Holding all other factors constant, being in a PAN state increases the expected rate of projects by a factor of 1 (based on model 9, TABLE 3). Finally, one standard variation change in PAN vote share increases the expected count of projects by 1.1 (model 10, TABLE 3).

*** Figures 4 and 5 about here ***

research is informative to us, the Program we explore is unlikely to fit the above political economy in that politicians are not entirely free to design the policy to pursue their electoral goals (it is a demand-driven program, thus, a HTA initiative is needed in the first place), and the clientele that the Program courts (migrants) has been granted voting rights only in the federal elections that took place in the last year covered by this study (2006).

6. Concluding Remarks

Remittances have become a crucial source of revenue in many developing countries. Whereas some analysts (Durand, Parrado and Massey 1996) regard them as flows that can circumvent state intervention –which is regarded an advantage in poorly institutionalized and often corrupt political settings– the fact is that governments do intervene to influence the amount of remittances that arrive in sending countries, the channels by which they arrive, and their uses once at home. These interventions are likely to increase as governments become more and more aware of their developmental potential. Precisely due to this characterization of remittances as alien to political intervention, political economy research on remittances has been rare (for exceptions see Bravo 2007; Pfütze 2007). In this paper, we explore the *3x1 Program for Migrants*, a well publicized public policy program directed at channeling collective remittances to so-called “productive uses” in migrants’ communities of origin.

We raised two main points. First, because the program design gives the initiative to migrants, its capacity to target poor municipalities crucially depends on the relationship between poverty and migration. If municipalities of highest and longest migration tradition are not among the poorest ones, as it is the case in Mexico, the program will be unlikely to reduce poverty due to a self-selection bias. Secondly, the *3x1 Program for Migrants* was launched at the federal level under a PAN administration led by Vicente Fox, who previously served as the governor of the high migration state of Guanajuato (Smith 2003). The involvement of three different levels of government in addition to migrant organizations in the allocation of projects raises concerns about partisan or political biases in the actual implementation of the program.

Indeed, we found that whereas poorer municipalities were more likely to participate in the program, poverty levels were either inconsequential or negatively related to the amount of money received and to the number of projects awarded. We also found partisan effects in the implementation of the *3x1 Program*. PAN states and municipalities were more likely to participate in the program than those ruled by other political parties. Municipalities with larger PAN electoral support were also more likely to participate and to receive more projects. Moreover, the partisan bias reinforces the self-selection bias of the program because high-migration and relatively well-off municipalities tend to favor the PAN. All

together, these results cast doubt on the ability of this kind of policies to target the communities where the program's public resources are most needed.

Two simple amendments to the program design might help increase the chances that the poorest communities –where migrants are fewer in number and not very well organized– are not excluded from its benefits. First, only communities beyond a particular poverty threshold could be eligible to participate. Second, projects from medium to low poverty locations could receive a smaller subsidy from the state and federal governments than those from high poverty areas, where migrant organizations may not be able to afford an equal share of the project's costs. Yet, changing the rules of the program is bound to raise all sorts of political resistance among relatively well-off migrants whose political power has been on the rise and among local politicians eager to court them.

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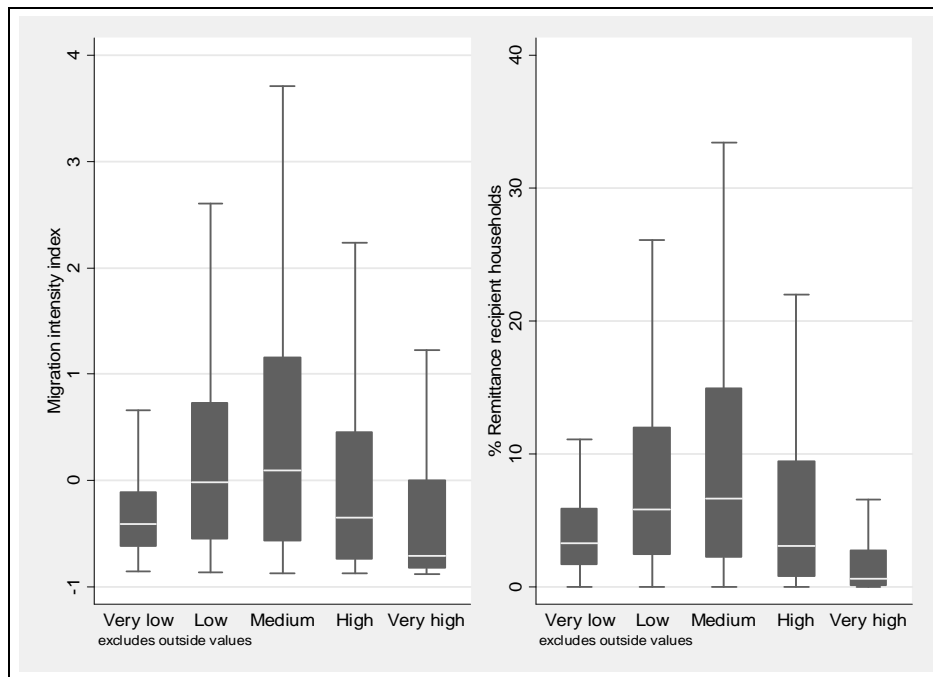


FIGURE 1. Migration and poverty levels in Mexican municipalities, 2002-2006 (box plot).

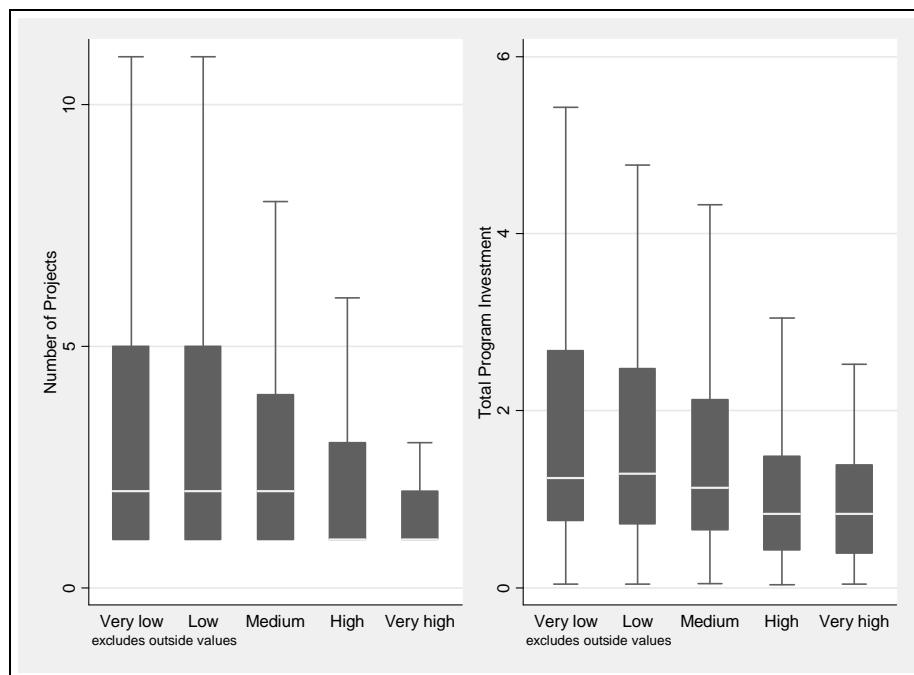


FIGURE 2. Number of projects awarded and total investment of the 3x1 Program in Mexican municipalities by different poverty levels, 2002-2006 (box plot).

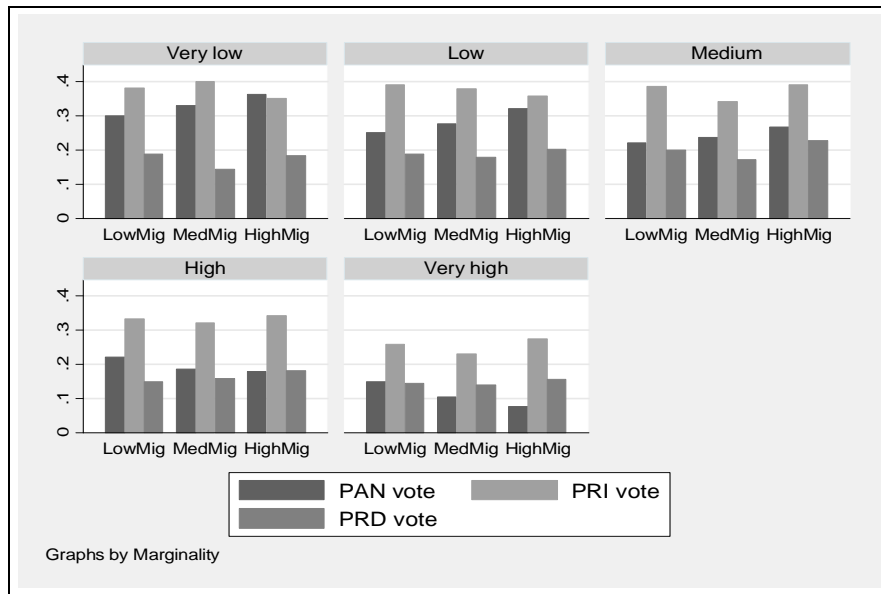


FIGURE 3. Municipal vote for PAN, PRI and PRD by level of poverty and migration intensity, 2002-2006.

TABLE 1
The 3x1 Program in Mexican Municipalities, 2002-2006
Descriptive statistics

	All municipalities		Participating municipalities	
	Mean	Std. dev.	Mean	Std. dev.
Municipal participation	0.134	0.341		
Amount (in million constant	0.234	0.992	1.746	2.172
Number of projects	0.458	2.240	3.421	5.230
Poverty index	0.012	0.990	-0.339	0.755
Very low poverty	0.100	0.300	0.088	0.284
Low poverty	0.173	0.378	0.281	0.450
Medium poverty	0.203	0.402	0.294	0.456
High poverty	0.370	0.483	0.281	0.449
Very high poverty	0.155	0.362	0.056	0.230
Migration intensity index	0.039	0.986	0.901	1.090
No migration	0.038	0.192	0.002	0.043
Very low migration	0.353	0.478	0.080	0.271
Low migration	0.244	0.430	0.156	0.363
Medium migration	0.162	0.368	0.223	0.417
High migration	0.136	0.343	0.340	0.474
Very high migration	0.067	0.250	0.199	0.400
Water coverage	0.726	0.237	0.787	0.201
Sewage coverage	0.541	0.300	0.671	0.250
Electricity coverage	0.875	0.172	0.888	0.191
Log(population in millions)	-4.503	1.489	-4.037	1.210
PAN state	0.218	0.413	0.418	0.493
PRI state	0.668	0.471	0.258	0.438
PRD state	0.196	0.397	0.348	0.477
PAN municipality	0.214	0.410	0.307	0.461
PRI municipality	0.442	0.497	0.405	0.491
PRD municipality	0.160	0.366	0.214	0.410
PAN vote share	0.225	0.187	0.271	0.174
PRI vote share	0.340	0.194	0.363	0.146
PRD vote share	0.170	0.177	0.213	0.177
PAN-PRI vote margin	-0.115	0.205	-0.093	0.215
Margin of victory	0.102	0.120	0.111	0.103
Shared partisanship	0.425	0.494	0.478	0.500
Number of observations	12,169		1,629	

2435 municipalities / 31 states / 5 years.

Note: t-tests for differences in means are statistically significant at the 5% level in all cases.

TABLE 2
Participation in the 3x1 Program for Migrants in Mexican Municipalities, 2002 - 2006

	Program Participacion	Amount	Program Participation	Amount	Program Participation	Number of Projects
	(1) <i>Logit</i>	(2) <i>FE OLS</i>	(3) <i>Heckman selection model</i>	(4)	(5) <i>Zero Inflated Negative Binomial</i>	(6)
Migration						
Very Low	1.223 [0.593]**	-0.034 [0.044]				
Low	1.931 [0.598]***	-0.012 [0.047]				
Medium	2.396 [0.599]***	-0.006 [0.049]				
High	2.976 [0.600]***	0.246 [0.051]***				
Very High	3.193 [0.604]***	0.159 [0.056]***				
Poverty						
Low	0.502 [0.139]***	0.021 [0.034]				
Medium	0.542 [0.157]***	-0.051 [0.038]				
High	1.221 [0.181]***	-0.031 [0.042]				
Very High	1.433 [0.244]***	-0.029 [0.053]				
Migration intensity index			0.251 [0.020]***		-2.251 [0.138]***	0.366 [0.038]***
Poverty			0.874 [0.113]***	-0.214 [0.124]*	-0.933 [0.236]***	-0.396 [0.072]***
Squared Poverty			-0.137 [0.021]***		0.168 [0.051]***	
Water	0.623 [0.191]***	0.049 [0.042]	0.242 [0.104]**	-0.32 [0.303]		0.094 [0.191]
Sewage	0.368 [0.190]*	-0.015 [0.043]	0.241 [0.106]**	-0.02 [0.296]		0.685 [0.170]***
Electricity	-0.033 [0.195]	-0.082 [0.051]	-0.106 [0.108]	-0.381 [0.267]		-0.934 [0.211]***
Log (Population)	0.246 [0.037]***	0.056 [0.008]***	0.157 [0.020]***	0.37 [0.054]***		0.495 [0.031]***
Constant		0.482 [0.085]***	-1.055 [0.264]***	3.641 [0.665]***	1.231 [0.239]***	2.604 [0.344]***
Observations	11786	12118	12118	12118	12118	12118
No. of states / years	27 / 5	31 / 5	31 / 5	31 / 5	31 / 5	31 / 5

Program participation is a binary outcome, amount awarded is measured in million pesos in constant prices.

Standard errors in brackets. * significant at 10%; ** significant at 5%; *** significant at 1%.

All models include state and year effects, except models 5 and 6, which only includes year effects.

Political determinants of Participation in the 3x1 Program for Migrants in Mexican Municipalities, 2002 - 2006

	Heckman selection models								Zero Inflated Negative Binomial Models			
	Program Participation	Amount	Program Participation	Amount	Program Participation	Amount	Program Participation	Amount	Number of projects	Number of projects	Number of projects	Number of projects
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Migration Index	0.249		0.252		0.252		0.251		0.292	0.291	0.292	0.295
	[0.020]***		[0.020]***		[0.020]***		[0.020]***		[0.038]***	[0.038]***	[0.038]***	[0.038]***
Poverty	0.903	-0.21	0.919	-0.182	0.923	-0.185	0.875	-0.214	-0.291	-0.273	-0.276	-0.287
	[0.113]***	[0.124]*	[0.114]***	[0.124]	[0.114]***	[0.124]	[0.113]***	[0.124]*	[0.072]***	[0.072]***	[0.072]***	[0.072]***
Squared Poverty	-0.141		-0.144		-0.145		-0.137					
	[0.021]***		[0.021]***		[0.021]***		[0.021]***					
Politics												
PAN State	0.269	0.339	0.268	0.252	0.268	0.258	0.29	0.323	0.007	-0.014	0.01	0.054
	[0.115]**	[0.334]	[0.115]**	[0.333]	[0.115]**	[0.333]	[0.115]**	[0.334]	[0.086]	[0.087]	[0.082]	[0.081]
PRI State	-0.089	0.077	-0.095	0.062	-0.095	0.062	-0.105	0.068	-1.506	-1.497	-1.484	-1.495
	[0.126]	[0.354]	[0.126]	[0.353]	[0.126]	[0.353]	[0.126]	[0.354]	[0.086]***	[0.085]***	[0.084]***	[0.084]***
PAN Municipality	0.126	-0.083							0.138			
	[0.056]**	[0.144]							[0.089]			
PRI Municipality	-0.072	-0.015							0.071			
	[0.049]	[0.128]							[0.075]			
PAN Municipal Vote Share			0.372	0.511						0.529		
			[0.131]***	[0.353]						[0.201]***		
PRI Municipal Vote Share			-0.291	-1.073						-0.308		
			[0.141]**	[0.410]***						[0.198]		
PAN-PRI Municipal Vote Share					0.334	0.754					0.416	
					[0.096]***	[0.253]***					[0.152]***	
Municipal Competitiveness							-0.112	0.608				-0.051
							[0.169]	[0.483]				[0.295]
Shared Partisanship							0.036	0.041				0.117
							[0.038]	[0.098]				[0.064]*
Water	0.231	-0.312	0.221	-0.361	0.22	-0.35	0.238	-0.331	0.02	-0.005	-0.012	0.027
	[0.104]**	[0.303]	[0.104]**	[0.302]	[0.104]**	[0.302]	[0.104]**	[0.303]	[0.188]	[0.188]	[0.188]	[0.188]
Sewage	0.237	-0.014	0.248	-0.034	0.25	-0.032	0.242	-0.012	0.202	0.221	0.228	0.21
	[0.106]**	[0.296]	[0.106]**	[0.295]	[0.106]**	[0.295]	[0.106]**	[0.296]	[0.173]	[0.172]	[0.171]	[0.172]
Electricity	-0.11	-0.37	-0.108	-0.39	-0.11	-0.381	-0.098	-0.372	-0.608	-0.594	-0.609	-0.588
	[0.108]	[0.267]	[0.108]	[0.266]	[0.108]	[0.266]	[0.108]	[0.267]	[0.192]***	[0.192]***	[0.191]***	[0.192]***
Log (Population)	0.153	0.372	0.154	0.343	0.155	0.344	0.157	0.362	0.349	0.347	0.351	0.348
	[0.020]***	[0.054]***	[0.020]***	[0.054]***	[0.020]***	[0.054]***	[0.020]***	[0.054]***	[0.030]***	[0.031]***	[0.030]***	[0.031]***
Constant	-1.389	3.331	-1.393	3.557	-1.361	3.314	-1.354	3.187	2.428	2.425	2.521	2.38
	[0.292]***	[0.773]***	[0.298]***	[0.799]***	[0.289]***	[0.760]***	[0.290]***	[0.768]***	[0.341]***	[0.354]***	[0.336]***	[0.346]***
Migration Index									-2.234	-2.224	-2.22	-2.235
									[0.155]***	[0.154]***	[0.154]***	[0.156]***
Poverty									-0.933	-0.926	-0.929	-0.92
									[0.252]***	[0.252]***	[0.252]***	[0.253]***
Squared Poverty									0.195	0.195	0.196	0.193
(ZINB inflation equation)									[0.053]***	[0.053]***	[0.053]***	[0.054]***
Observations	12,103	12,103	12,103	12,103	12,103	12,103	12,101	12,101	12,103	12,103	12,103	12,101
No. of states / years	27 / 5	31 / 5	27 / 5	31 / 5	27 / 5	31 / 5	27 / 5	31 / 5	31 / 5	31 / 5	31 / 5	31 / 5

Units are municipality/year observations. Program participation is a binary outcome, amount awarded is measured in million pesos in constant prices.

Standard errors in brackets. * significant at 10%; ** significant at 5%; *** significant at 1%.

All Heckman models include state and year effects, ZINB models only include year effects.

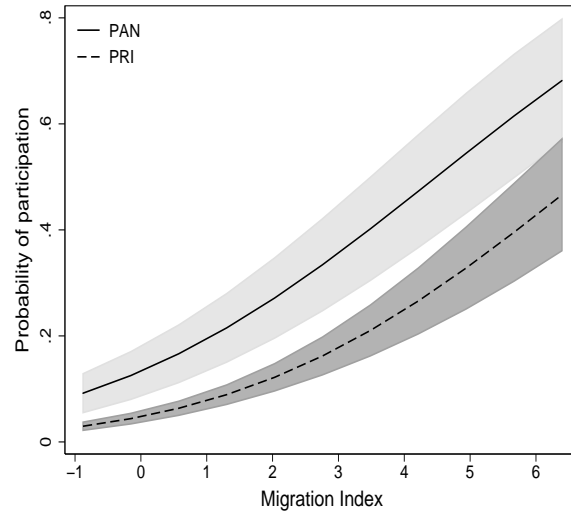


Figure 4. Predicted probability of participation in the 3x1 Program in Mexican municipalities by migration intensity. Estimates based on Model 1 in Table 3, holding all other covariates at their mean values.

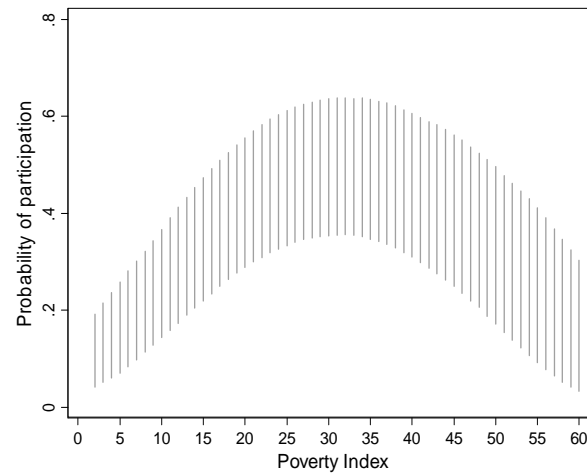


Figure 5. Predicted probability of participation in the 3x1 Program in Mexican municipalities (PAN municipalities in PAN states) by degree of poverty. Estimates are based on Model 1 in Table 3, holding all other covariates at their mean values.