The Role of Metropolitan Cooperation and Administrative Capacity in Subnational Debt Dynamics: Evidence from Municipal Mexico

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Abstract

Research on subnational capital markets in developing nations has tended to focus on designing regulatory frameworks that compensate for structural economic, fiscal, and political factors. However, research on public investment in the US shows that functional factors, like administrative capacity and metropolitan cooperation, are also important. Using a panel dataset of Mexican municipal debt (2005-2012), the study examines whether metropolitan cooperation and administrative capacity affect subnational debt decisions in this developing nation. Cross-sectional time-series analysis of different types of municipal debt (public development bank loans and private commercial bank debt, bond emissions, and trust instruments) reveals that municipalities in metropolitan areas avoid costlier credits but that they do not cooperate to access cheaper credits. It also reveals that administrative capacity plays little to no role in municipal debt decisions.

Introduction

Scholars regularly argue that subnational capital markets in developing nations can improve the provision of public services that contribute to social welfare and economic development (Cernuschi and Platz 2006; Martell and Guess 2006; Leigland 1997, Oates 2005, Weingast 2009). However, the efficient operation of subnational capital markets in facilitating public investment is complicated by well-known structural economic, fiscal, and political factors that result in policy inefficiency and excess spending. National economic and business cycles raise the incentive of subnational governments to engage in cyclical public spending sprees (Freire and Petersen 2004, Dillinger and Webb 1999). Vertical fiscal imbalances and soft budget constraints lead them toward inefficient policy choices and public spending (Rodden 2006). Election cycles, divided government, and vertical partisan juxtaposition aggravate these tendencies (Drazen and Eslava 2010, Sakurai and Menezes-Filho 2008, Veiga and Veiga 2007, Jones, Meloni, and Tommasi 2012, Sáez 2016, Letelier S. 2011, Rodden and Wibbels 2002, Jones, Sanguinetti, and Tomassi 1999). The consequences of inefficient subnational policy-making, often called "Type II" problems (Musacchio and Pinea 2014), are well known: overly indebted subnational governments that can require debt restructuring or wholesale bailouts, undermining national fiscal finances and macroeconomic stability (Amieva-Huerta 1997, Rubin 1993, Ter-Minassian 1997, Rodden and Wibbels 2002, Rodden 2006).

Because the structural factors leading to "Type II" problems are often difficult to change (Musacchio and Pinea 2015), scholars debate the best functional frameworks for improving oversight over subnational policy choices (the lack of which is often called a "Type I" problem). Scholars debate the optimal functional frameworks for managing the budgetary processes, administrative rules, and regulatory environments shaping subnational

public investment (Miller and Hildreth 2002, Johnson 1996, Kelemen and Teo 2014). Many argue in favor of stricter, top-down oversight because poor decision-making can be hazardous to national fiscal finances and the macroeconomy (Canuto and Liu 2010, Leigland 1997, Cecchetti et al 2010, Cernuschi and Platz 2006). Others argue that a bottom-up approach – allowing greater subnational autonomy in public investment, fiscal finances, and debt policy decisions – can encourage local innovation (Tabellini and Alesina 1990, Alesina et al 1996; Poterba and von Hagen 1999). These scholars argue that political competition between parties for votes and market competition between subnational governments for voters will rein the incentive to make inefficient policy choices.

Most scholars debating the merits of these top-down and bottom-up approaches for regulating subnational capital markets say that the ultimate configuration of either functional framework should depend on the structural economic, fiscal, and political factors already known to shape underlying policy efficiency (Ter-Minassian 1997). However, research suggests that several additional functional factors may also matter for subnational debt. For example, local governments that lie within larger metropolitan areas may cooperate to provide higher quality and more efficient public services (De Mello 2000, Feiock 2004, Cernuschi and Platz 2006, Miller and Cox 2015). This suggests that metropolitan municipalities may also be pushed to assume greater debt loads but also to take more efficient debt policy decisions. Research has also shown that greater administrative capacity raises the quantity and quality of public service provision, especially in urban areas (Campbell 2003, Tulchin, and Selee 2004, Avellaneda 2009). This suggests that localities benefiting from well-trained administrators will take out greater debt loads to provide better public works but will also make more efficient debt policy decisions as well.

Despite the possibility that functional factors like metropolitan area cooperation and administrative capacity may affect debt policy choices, there is little research examining whether this is the case. This study seeks to fill this gap by examining whether metropolitan area cooperation and subnational administrative capacity affect subnational debt policy choices. Building on the research noted above, we hypothesize that municipal governments forming part of larger metropolitan areas that are driven toward greater service provision will also be pushed to assume greater debt loads but also to make more efficient debt policy decisions and access more sophisticated, lower cost instruments. We also hypothesize that municipalities with greater administrative capacity will not only seek to provide greater public services, they will also be encouraged to contract greater debt loads to pay for them but lean toward more sophisticated, cost-efficient debt as well.

To examine empirical support for these hypotheses, we examine a country where subnational debt policy rights are relatively new: Mexico. The structural economic (economic cycles), fiscal (vertical fiscal imbalances and soft budget constraints), and political (vertical partisan juxtaposition) structural factors leading Mexico's states and municipalities to fiscal excess and excess debt are known (e.g., Cabrero and Carrera 2002, Giugale, et al 2000, Hernandez-Trillo and Jarillo-Rabling 2008). However, little research has been conducted on whether and how other functional factors might also matter for the debt policy choices. Although per capita subnational debt levels in Mexico are still low by international standards (about 3.0% GDP in 2014), total subnational debt in Mexico has risen three-fold in just 10 years, from going from about 1,000 pesos per capita in 2004 to about 4,300 pesos in 2014 (Secretaría de Hacienda y Crédito Pública (SHCP).

To undertake this study, we construct an original panel dataset of yearly municipal level loans, including total loans and loans by type of instrument, to examine the impact of

metropolitan cooperation and administrative capacity on debt policy in municipal Mexico. Cross-sectional time-series analysis shows that, contrary to expectations, administrative capacity tends to have no effect on municipal debt policy choices, something that we attribute to a lack of municipal financial expertise and to the presence of external financial advising services. In line with expectations, metropolitan areas cooperate to avoid the most costly types of loans but, contrary to expectations, they do not access the cheapest financial instruments at higher rates than non-metropolitan places, something we attribute to the presence of federal funds earmarked for metropolitan projects. These findings suggest that national governments may use fiscal incentives to encourage metropolitan cooperation, especially to raise the cost-efficiency of subnational debt decisions.

Mexico's Subnational Capital Market

Mexico's federal system is structured around 31 states and a Federal District, with states divided into about 2,443 municipalities, depending on the year. Mexico is known for its longtime dominant party system run by the mass-based Institutional Revolutionary Party (PRI) throughout most of the 20th century until 2000. That year, the right-leaning National Action Party (PAN) defeated the PRI in the race for the presidency, heralding the nation's democratic transition. The subsequent 2006 presidential election pitted the PAN against the left-leaning Democratic Revolution Party (PRD), a PRI splinter party that had challenged the PRI in the 1988 presidential race and lost. PAN candidate Felipe Calderon won in 2006, with the formerly dominant PRI finishing third. In 2012, however, the PRI defeated both the PAN and the PRD in a highly competitive presidential race.

Since 2001 – and a series of fiscal and bank reforms that begun in 1997 – Mexico's state and municipal governments have been allowed to contract debt from public and private

sources for capital investments (Auditoria Superior de la Federación 2011, Revilla 2013, Villa 2009). Instead of designing a system of top-down oversight over the nation's subnational capital market, the national government sought to rely on bottom-up political and market competition to manage debt policy decisions (Hernandez-Trillo and Jarillo-Rabling 2008). National laws governing subnational debt rights are limited in scope and merely specify that no subnational government may contract debt in foreign currency, that all long-term debt must be registered with the national finance ministry, and that all debt must be used for economically productive purposes, although this last provision is rarely enforced. Bank capitalization requirements require all lenders to pay attention to the creditworthiness of their clients. State and municipal governments seeking private sector financing must contract rating agencies to appraise their fiscal positions and operations. Those seeking development bank loans usually need only submit an assessment of their fiscal solvency by this lender.

States have the right to constrain state and municipal debt loads by placing formal limits on the amount of debt assumed—according to a percent share of fiscal revenues or a delimited upper ceiling (Auditoria Superior de la Federación 2011, Revilla 2013). States can also determine the process for contracting debt. When established, the process for authorizing municipal debt usually requires that municipalities gain a two-thirds majority approval in their municipal councils for debt plans, and that municipalities and states receive state legislative approval for the loans being sought. Even so, state regulatory frameworks appear to provide little in the way of *de facto* budget restrictions. Municipal council and/or state legislative approval is relatively easy to get, as governors and mayors dominate their legislative branches, while municipal councilors and state legislators ask few questions about planned public investments or loan financing terms. This has allowed subnational

governments to access capital markets with little oversight, resulting in sometimes large and costly debt portfolios.

The debt instruments available to subnational governments in Mexico include public development bank loans, loans accessed through "trust" instruments, private commercial bank loans, and municipal bonds placed in the Mexican stock market (Secretaría de Hacienda y Crédito Público 2005). The most expensive financial instruments available to subnational governments include development bank loans and private sector loans administered through legally constituted "trusts." The mission of the nation's development banks is not to provide subsidized credit but, instead, to facilitate public works that might be considered unprofitable from the perspective of private sector lenders and to facilitate the extension of public services to places considered high credit risks. As such, subnational governments undertaking unprofitable but necessary public works or deemed high credit risks should tend to rely on public development bank loans, even though these loans may include additional overhead costs for administrative and technical assistance (Giugale 2003).

Similarly, trust instruments were designed to allow the nation's less creditworthy subnational entities access to private capital at reasonable rates. However, they also provide a vehicle for inter-municipal or inter-state cooperation or public-private partnerships on public works. The creation of a "trust" administered by a third party financial institution legally binds the subnational government(s) to dedicate a set revenue stream for a specified period of time to guarantee that the total resources available in it never dip below an established level. Those revenue streams most often dedicated by subnational governments usually constitute unearmarked fiscal transfers, but they may also dedicate own source revenues from service fees or property taxes. (In general, Mexico's national government enjoys most tax rights, with states receiving most resources through federal fiscal transfers

and municipalities through state transfers. States and municipalities retain some tax rights but they take advantage of this to different degrees.) The trust provides an additional guarantee to creditors, as any violation of its terms would constitute a breach of contract. Yet, the creation of the trust requires an additional layer of administrative costs and fees, on top of the baseline costs of any private sector financial instruments used to asses them. Trust instrument loans thus rank alongside development bank debt in their cost to borrowers.

Commercial bank loans and bonds are, relatively speaking, more cost-efficient forms of financing. Municipalities with relatively better credit ratings should prefer commercial bank loans and bond emissions over development bank debt and trusts. While commercial bank loans are generally used for projects requiring short and medium-term financing (with loan durations fewer than seven years), bond emissions are used to secure longer-term financing (loan durations more than seven years). Often commercial bank loans are refinanced into longer bond emissions. States and municipalities receive better terms for these private financing instruments if they secure multiple credit ratings from ratings agencies and if they offer repayment guarantees using federal fiscal transfers or own-source revenues. Commercial banks peg interest rates to the nation's interbank lending rate, but add points to reflect the borrower's credit rating. Additional costs include legal fees to set up the contract, internal assessments and other administrative costs. Those subnational governments directly accessing commercial bank loans usually guarantee them with fiscal transfers or own source revenue streams, although they do not take the additional step of creating a legally constituted trust.

The cheapest private financial instrument available is accessed through a bond emission. Bond emissions are organized by private financial institutions that agree alone or in syndicate with others to underwrite the full emission and remarket it to investors in

Mexico's local stock market. Successful bond emissions require strong credit ratings, as the risks of nonpayment are pushed to investors. Although there are fees and other costs associated with a bond emission, this instrument is cost-efficient because it allows subnational governments immediate liquidity and it reaches a wider range of national lenders (investors) compared to those accessing loans through development banks or trusts.

If political competition and market forces were at work guiding subnational debt dynamics in Mexico, as was originally intended, then we should expect to see municipalities with similar credit ratings constructing similar debt portfolios. Yet, a glance at several municipalities with over one million inhabitants each and strong (investment grade) credit ratings (over mxA in 2012, Standard & Poor's 2013) shows surprising debt portfolio variation. In the state of Nuevo León, highly indebted Monterrey's (mxAA) $1,858 pesos per capita total debt in 2012 was divided almost evenly between commercial banks ($867) and national development banks ($991). In contrast, in the state of Jalisco, highly indebted Guadalajara's (mxA) $1,777 pesos per capita debt in 2012 was owed almost entirely to commercial banks. Meanwhile, relatively less indebted León (mxAA) in the state of Guanajuato had most of its total debt load of $683 pesos per capita with commercial banks ($478 per capita) and the rest with development banks ($205 per capita). In contrast, similarly indebted Puebla city (mxA+) in the state of Puebla used commercial banks to finance its $481 pesos per capita debt. Why would similarly creditworthy cities show such different totals and types of debt in their debt portfolios?

We examine the impact of two functional factors – metropolitan cooperation and administrative capacity – on subnational debt policy choices, controlling for other (structural) factors that might also affect these decisions. Building on research arguing that municipalities cooperate within metropolitan areas to provide greater and more efficient

public services (Ostrom, Tiebout, Warren 1961, Miller 1981, De Mello 2000, Feiock 2004, Cernuschi and Platz 2006, Miller and Cox 2015) and that larger loan packages provide greater economies of scale (Freire and Petersen 2004, Canuto and Liu 2010), we hypothesize that metropolitan areas should assume greater debt loads but also use more efficient debt instruments like commercial bank loans and bond emissions to this end. Any findings that this is not the case would suggest that research showing that metropolitan areas in Mexico do not cooperate as much as one might expect on public works (Ramírez de la Cruz 2012, Iracheta and Iracheta 2014) also extends to cooperating on financing as well.

We also hypothesize that subnational governments with greater administrative capacity should enjoy greater access to subnational capital markets, thereby assuming greater debt loads as a result, but also that they will be attracted to more sophisticated, cost-efficient financing instruments like commercial bank loans and bonds emissions. Subnational governments in developing countries frequently count on lower human capital from which to staff their administrations, undermining the quality of public administration and public service provision (Pillay 2008). Low human capital and low administrative capacity is one of the biggest handicaps for social and economic development in developing nations (Cabrero and Carrera 2002, Tulchin and Selee 2004, Campbell 2003). We thus expect that lower administrative capacity will lower the capacity of subnational governments to access subnational capital markets, leaving them more likely to take out less sophisticated development bank loans or to establish third-party trusts to administer their loans. In contrast, greater administrative capacity will raise subnational governmental capacity to access subnational capital markets and more sophisticated and cost-efficient instruments. Any findings that administrative capacity had no effect on debt policy choices would

suggest either that it does not extend to local financial expertise, or that local governments are abdicating financial decisions to external financial advisors, or both.

The Panel Dataset

To examine whether metropolitan cooperation and administrative capacity affect subnational borrowing, we construct a panel dataset including Mexico's 2,443 municipalities across eight consecutive years, producing a total of 19,544 municipal-year observations. Our dataset begins in 2005, the first year the nation's finance ministry began to record subnational debt data, and ends in 2012, the last year for which we have complete data. Our database includes municipalities in all 31 states but not the nation's Federal District whose lower-level "delegations" do not enjoy the same debt rights as municipalities.

The dependent variables include the yearly amount borrowed by municipal governments by total and by type of instrument, that is, whether through development bank loans, loans administered through "trust" instruments, commercial bank loans, and bond emissions. We transform yearly municipal peso-denominated loan amounts into per capita figures and take the square root to account for outliers and nonlinearity. (The standard logarithmic transformation is not possible due to the presence of frequent yearly zero municipal debt acquisition.) We include zero yearly municipal loan amounts to account for the full range of debt policy choices available to municipal governments.

As shown in Table 1, development bank debt averaged 51.84 pesos per capita during the 2005-2012 period we examine, compared to commercial bank debt which averaged 23.30 pesos per capita, bond emissions which averaged 5.79 pesos per capita, and trust instrument debt which averaged 0.50 pesos per capita. These figures represent averages across all observations, including those with zero loan amounts. The peso-per-capita figures

are in 2005 pesos, when the exchange rate averaged 10.89 Mexican pesos per US dollar. As shown in Table 2, 1,342 or 54.93 percent of municipalities accessed some kind of debt instrument during the 2005-2012 period, while 1,098 or 44.94 percent assumed no loans. Most municipalities taking out loans (72.65 percent) prioritized one type of instrument over others. Only 18 out of the 1,342 municipalities, that is only 1.34 percent, of these taking out loans accessed the three main debt instruments available to them (development bank, commercial bank, and bond debt) (Group 1), although 193 accessed development bank and commercial bank loans (Group 2), and 154 development bank loans and bonds (Group 3).

–Table 1 and 2 About Here–

The main explanatory variables include two different measures for metropolitan cooperation and a proxy for municipal administrative capacity. The metropolitan measures include whether the municipality was designated by the national government as lying within a metropolitan area and whether the municipality was a signatory to a metropolitan area plan or program. Data from the national population council, or *Consejo Nacional de Población* (CONAPO), are updated every five years with the national census. In 2010, 14 percent of the municipal-year observations – or 351 municipalities – were recognized as lying within a metropolitan area and 274 of these were identified as having a formal metropolitan cooperation plans/programs in place.

To capture the level of municipal administrative capacity we use a municipal development index – CONAPO's marginality index – with higher values indicating lower human capital and thus lower administrative capacity. Development indices reflect the quality of human capital available from which elected and appointed municipal officials are selected. Table 1 presents summary statistics. We use a human capital-based measure for two reasons. First, scholars facing similar data limitations, with data on administrative

educational levels or administrative efficiency, have also highlighted the usefulness of this approach for capturing administrative capacity (e.g., O'Toole and Meier 1999, Avellaneda 2009, Meza 2015). Second, although some mayors in Mexico might seek to expand the pool from which appointments are made outside municipal borders, studies show that most make appointments from within their localities are based on political criteria, appointing loyal campaign workers and supporters that helped them achieve office (Organization for Economic Cooperation and Development 2013). Indeed, for this reason, measures such as municipal public employment are unacceptable as a proxy for administrative capacity: municipal public employment most likely reflects political patronage levels rather than administrative capacity (Organization for Economic Cooperation and Development 2013).

The panel dataset also includes a series of demographic and fiscal controls. More populous and urban municipalities tend to find it easier to access subnational capital markets (Thau 2011, Freire and Petersen 2004, Freire 2014), so we include total population (square root) and the share population living in rural areas (with fewer than 2,500 habitants), both from the national geographic and statistics institute INEGI. Wealthier municipalities also tend to enjoy greater borrowing capacity (Thau 2011, Freire and Petersen 2004, Freire 2014), so we also include a control for total fiscal assets (own source and transfer revenues, per capita square root) from INEGI. Municipalities less dependent on fiscal transfers may enjoy greater access to capital (Thau 2011, Freire and Petersen 2004, Freire 2014) (data from INEGI). Crime rates may affect lender perceptions of governmental stability, so we include the homicide rate (murders per 100,000 people) (from INEGI). These indicators affect access to capital markets indirectly though their effect on credit ratings and directly through their effect on lenders' perceptions about the capacity to repay. We use these variables instead of municipal credit ratings because this would lead municipalities choosing

zero debt liabilities or only accessing development bank debt to drop out of the sample; as mentioned above, only those municipalities accessing private sector credits need to secure credit ratings in Mexico. See Table 1 for summary statistics.

Finally, we include important political controls. Municipal debt may be affected by electoral and partisan policy cycles (Drazen and Eslava 2010, Jones, Meloni, and Tommasi 2012, Sáez 2016), so we include municipal election year and partisan dummies. Vertical partisan alignment may encourage fiscal discipline (Jones, Sanguinetti, and Tommasi 2000, Rodden and Wibbels 2002), with a dummy variable capturing whether mayors were copartisan with state governors. Data are from state electoral institutes and a development research think tank CIDAC. See Table 1 for summary statistics for these variables as well.

Statistical Analysis and Results

We examine the data using linear Prais-Winston cross-sectional time-series analysis with panel-corrected standard errors (CSTS-PCSE). We chose CSTS-PSCE for two reasons. First, modified Wald tests for group-wise (here, municipal) heteroskedasticity in the residuals showed that we could reject the null hypothesis ($p<0.01$) of homoskedastic errors for all of our dependent variables. Second, Wooldridge tests for serial autocorrelation (order 1) in the residuals showed that we can reject the null hypothesis of no serial autocorrelation ($p<0.01$), even with the inclusion of lagged dependent variables in the models. CSTS-PCSE can correct for both heteroskedastic and autoregressive error processes (we use an AR(1) correction). (We did not correct for cross-panel contemporaneous correlation or panel-specific autoregressive processes due to missing data and the short time series.) We run all models on the data in level form: unit-root tests – specifically, Levin-Lin-Chu, Harris-Tzavalis, and Breitung tests – which show that we can reject the null hypothesis of the

presence of unit roots ($p < 0.01$) and thus conclude that each dependent variable is stationary. We include a lagged dependent variable (per capita, square root) in all models, to account for observed autocorrelation in the residuals (in models without lags) and to control for any substantive effect of prior debt on subsequent debt. We also include the lag of total debt in all models (per capita, square root), in case that this affects access to capital markets.

The CSTS-PCSE model's panel (municipal) correction of the standard errors precludes the need for panel (municipal) fixed effects. Even so, the inclusion of municipal fixed effects would not be statistically appropriate given our data. The main explanatory variables – metropolitan area and the marginality index – as well as several of the controls – like the political ones – are either time-invariant or very sluggish over time. The main explanatory variables are coded only once every five years (in 2005 and 2010), with the only point of possible variation in our sample occurring with the 2010 recoding, which rarely occurs. It is precisely time-invariant nature or sluggishness of our main explanatory variables – as well as some political ones – across a sizeable number of municipalities that requires an approach prioritizes inter-municipal comparisons (a random-effects approach) rather than intra-municipal ones (a fixed-effects approach). The superiority of the random- over fixed-effects approach under such conditions is explained by Clark and Linzer (2015).

Even so, we include higher-level state and year fixed effects. State fixed effects (dummy variables) account for a variety of state level factors that might influence municipal debt decisions, including the health of state governmental fiscal finances or any state level regulations (though usually unenforced) affecting municipal debt loads. Year fixed effects (dummies) control for the impact of aggregate time-series trends common to all municipalities, such as changes in the central bank's yearly average benchmark inter-bank

lending interest rate, that can affect debt dynamics; tests for whether year dummy were jointly equal to zero allowed us to reject the null hypothesis that they were ($p<0.01$).

Table 3 and Table 5 present results using the measure for whether a metropolitan municipality was designated as part of a metropolitan area. Table 4 and Table 6 present results using the measure for whether a metropolitan municipality was a signatory to a formal metropolitan area plan/program. Table 3 and Table 4 present results for models including all municipalities, using state election results to calculate municipal partisan control and election margins in Oaxaca. Most municipalities in Oaxaca do not hold party-based elections. Table 5 and Table 6 present results for models excluding the state of Oaxaca's 570 municipalities. As shown below, the results are the same.

We begin the discussion of the statistical results with the impact of municipal administrative capacity on the different types of debt. We originally expected that greater administrative capacity (low values on the marginality index) would push municipalities to access more cost-efficient financing instruments, including commercial bank loans and bonds, and that it would steer them away from more cost-inefficient development bank loans and trusts. In line with expectations, the coefficient for the marginality index was positive and significant for the trust instrument models (Model 3) in Table 3 and Table 4 (and Table 5 and Table 6 without Oaxaca), with lower human development (high values on the marginality index) associated with greater trust debt, in line with expectations. In other words, a one point improvement in municipal administrative capacity (a one point decline in the marginality index, which ranges from -2.27 to +4.40 in our dataset), would lead to a 0.019 decline in the square root of peso per capita debt contracted through trusts or a 0.000361 pesos per capita total decline, a minimal effect. Contrary to expectations, however, the marginality index did not have a positive effect on development bank debt. Also contrary

to our expectations, administrative capacity did not have a negative and significant effect on commercial bank or bond debt, with its coefficients insignificant in these models (Model 2, Model 4, Model 5) in Table 3 and Table 4 (and Table 5 and Table 6 without Oaxaca). The variable's negative and significant coefficient in the commercial bank model in Table 3 (Model 4) is not robust to other specifications in other tables.

–Table 3, Table 4, Table 5, Table 6 About Here–

The lack of effect of administrative capacity on total, development bank, commercial bank, and bond debt, and its minimal impact on trusts, suggests that one of two things is at work. Either greater administrative capacity is not equivalent to greater financial expertise or municipalities with lower administrative capacity hire external financial advisors to help them overcome their administrative deficits (as in the US, see Miller 1993 and Simonsen et al. 2001). Either way, municipal governments appear to lack financial expertise, something that makes them dependent on external financial advisors whose incentives structures may differ from those of municipal governments (Marlow 2013, Luby and Moldogaziev 2013, Luby 2014). In Mexico, there is some evidence to suggest that municipalities hire financial advisors based on their partisan preferences (Benton and Smith 2013), with these financial advisors enjoying close ties to specific financial institutions that push specific types of loans (Benton and Smith 2013). The political control variables demonstrate that municipalities tend to concentrate loans in off-election years, when public works would occur if they were to maximize their electoral impact, and that parties often display preferences for certain types of loans (as shown by the sometimes statistically significant coefficients on the partisan variables), suggests that this may be the case.

We also expected that municipalities in metropolitan areas would access subnational capital markets at greater rates but would prefer to coordinate around more cost-efficient

financial instruments like commercial bank loans and bonds rather than around development bank loans and trusts. As shown in Table 3 and Table 4, municipalities designated as metropolitan (Table 3) and those with formal metropolitan plans in place (Table 4) enjoyed lower development bank debt compared to non-metropolitan municipalities, as expected. These variables were both negative and significant in the development bank debt models (Model 2) in these tables, with these findings robust to the exclusion of Oaxaca in Table 5 and Table 6. Likewise, the variable for metropolitan area was negative and significant for trust instrument debt (Model 3), in line with expectations, although the variable capturing the presence of a formal municipal plan/program was not significant in the trust debt models. This suggests that metropolitan municipalities tend to avoid costlier lending through development bank loans and trusts, although the presence of a formal municipal plans plays no role in trusts; rather, being part of a metropolitan area matters more. Models excluding Oaxaca reproduced these findings (Table 5 and Table 6). Substantively speaking, municipal designation as belonging to a metropolitan area lowered development bank debt per capita by 0.384 pesos per capita (square root) or by 0.147 pesos per capita. In an average-sized city with 40,136 residents, this amounts 5,000 pesos less in development bank debt in any single year or 50,000 pesos less over 10 years. In a larger municipality, say with 10 times the population or 400,000 people, this amounts to 58,000 pesos less development bank debt in any year and 580,000 pesos less debt over 10 years, a figure that can start to add up, especially in municipalities with limited budgets.

Contrary to our expectations, however, neither of the two metropolitan indicators affected commercial bank loans (Model 4) or bond emissions (Model 5), with the coefficients for these variables insignificant in all tables. This suggests that metropolitan municipalities do not cooperate to access the cheapest debt available to them in subnational

capital markets, even if they do cooperate to avoid costlier forms of financing. The reason why this may be the case lies with the presence of federal metropolitan funds earmarked for common public works (Iracheta and Iracheta 2014). Officially designated metropolitan areas can apply for federal funds for shared public works, regardless of whether a municipal plan is in place, lowering their private sector debt requirements and, it appears, bringing them in line with those of non-metropolitan areas. In other words, the national government's metropolitan fund appears to be helping metropolitan municipalities address their greater public service demands, helping them avoid assuming greater debt loads.

With these findings in mind, the results for total debt make sense. Given that lack of impact of administrative capacity on all types of loans, and its minimal impact on trusts, it is not surprising that this functional factor played no role in total loan acquisition. Similarly, the metropolitan indicators were negative and significant in all total debt models in all tables, a finding driven by their negative impact on development bank loans and trust debt. Substantively, metropolitan areas enjoyed 0.395 less peso per capita (square root) debt, or 0.156 less total peso per capita debt, compared to non-metropolitan places in any year. This amounts to 62,000 fewer pesos owed in any year in a municipality with 400,000 residents or 620,000 pesos for this same municipality over 10 years. Returning to the point above, metropolitan municipalities thus need not assume greater debt loads compared to non-metropolitan places in order to meet greater public services demands. Instead, they turn federal fiscal funds, keeping their preferred private sector debt loads in line with other, non-metropolitan municipalities.

We conclude the statistical analysis with discussion of the controls, beginning with the total debt models (Model 1) in Table 3. More populous municipalities assumed greater per capita debt, but more urban (less rural) municipalities did not. This supports our

expectation that more populous places, and not necessarily more urban, with greater tax bases enjoy greater access to capital markets (e.g., Freire 2014). The impact of vertical fiscal imbalances was negative and significant, in line with our expectation that this would hamper access to capital markets as well (e.g., Freire 2014). However, greater total fiscal assets per capita, a measure of municipal fiscal wealth, did not facilitate access to debt, in line with findings in other research (e.g., Espinosa and Martell 2015). Instead of fiscal solvency, the size of the municipal tax base appears to be more import in Mexico. Homicide raised total debt figures, through its impact on development bank loans. Vertical partisan alignment had no effect on total debt loads, contrary to other research (e.g., Jones, Sanguinetti, and Tommasi 2000, Rodden and Wibbels 2002). The municipal election year dummy was negative and significant, showing that total debt loads increased in off-election years, consistent with observations about the multi-year nature of public works projects beginning well ahead of elections in order to deliver municipal incumbents political rewards. Less popular governments (lower margins of victory) also tended to spend more.

Assuming that the size of the municipal tax base raises private sector lenders' expectations about the capacity to repay (e.g., Freire 2014), we might expect to find a positive relationship between population size and commercial bank loans and bonds but a negative relationship with trusts and development bank loans. As shown in Table 3, municipal population had a positive and significant effect on commercial (Model 4) bank debt but no effect on bonds (Model 5). It had a positive and significant effect on development bank debt (Model 2) but not effect on trusts (Model 3). That larger municipalities did not enjoy greater access to bond markets and smaller municipalities were not directed toward trusts is not that surprising, considering that financial advisors may be helping small municipalities set up bond emissions and that trusts are used by both the small

places that would otherwise be denied access to private sector loans but also to larger municipalities engaging in inter-municipal projects or public-private partnerships. That larger municipalities enjoyed greater development bank loans suggests that these banks are not lending according to their stated mission, which is in part to foment public works in smaller localities. This suspicion is reinforced by the rural population variable's negative and significant coefficient for development bank loans.

The variable measuring the impact of total fiscal assets on debt was not significant across the debt type models, except trusts, in line with research showing that debt in Mexico is rarely allocated according to such criteria (e.g., Espinosa and Martell 2015). Vertical fiscal imbalances had no effect on commercial bank and bond debt, but a negative effect on development bank loans and trusts, a surprising set of findings because we would have expected the reverse. We were not surprised by the commercial bank loans and bond findings, given the presence of loan guarantees attached to these instruments. However, we were surprised to find that development bank loans and trust appear directed to places with lower dependence on fiscal transfers, rather than the reverse, something that requires future study. Homicide rates raised access to development bank debt but lowered access to commercial bank loans. We were not surprised to find that development bank debt is targeted toward high crime rate places, or that trusts were unaffected by crime, or that commercial banks were negatively affected. What was surprising was that homicide rates have no impact on bond emissions, meriting future study as well.

Conclusion

The original aim of this study was to examine whether two functional factors often associated with better and more efficient public policy and public works – metropolitan

cooperation and administrative capacity – might also matter for the debt decisions used to finance them. Scholars and policy experts have tended to focus on the structural – economic, fiscal, and political factors – that drive subnational governments toward inefficient policy decisions (type II problems), and thus toward excessive and costly debt, leading national governments to consider these issues when designing subnational fiscal and debt policy frameworks (Ter-Minassian 1997, Rodden 2006). In contrast, we seek to show that functional factors like metropolitan cooperation and administrative capacity can also affect debt policy decisions as well, something that should encourage governments to consider these things when designing debt policy frameworks as well.

To make this point, we examined a case where these functional factors should play the greatest role, a case where subnational capital markets are new and under-developed: Mexico. Cross-sectional time-series analysis of a panel dataset of yearly municipal loan amounts by total and type revealed some expected and some surprising results. We find that municipalities located in metropolitan areas appear to cooperate to avoid costly debt financing like development bank loans and loans administered through third-party trusts, although they do not appear to cooperate to access more cost-efficient debt like commercial bank loans or bonds. We attribute this last finding to the presence of earmarked federal funds for joint metropolitan projects, which appear to encourage metropolitan cooperation in project planning and administration, but only nominally in financing decisions. If metropolitan municipalities had not cooperated at all on financing, then they would have met greater public service demands through greater total debt, which was not the case.

We also find that Mexican municipalities did not leverage greater administrative capacity into greater access to subnational capital markets or more cost-efficient debt. It appears that greater administrative capacity may not always translate into greater financial

expertise, with the fiscal solvency of public projects perhaps mattering more for financing terms (Espinosa and Martell 2015). However, evidence suggests that subnational governments in Mexico rely on the services of contracted external financial advisors. This is certainly the case in the US, where collusion among financial advisors has sometimes resulted in hidden loan fees and questionable financing choices as advisors push cities toward those debt instruments available through their preferred lenders (Miller 1993, Luby and Moldogaziev 2013).

The study reveals important policy lessons for Mexico and other nations using subnational capital markets to finance public works. National policy programs that raise the incentive for metropolitan or intra-regional cooperation on joint public works can encourage cooperation on project financing as well. This is particularly important in nations suffering from low administrative capacity or from overreliance on external financial advisors. Although governments may also improve subnational administrative capacity and to regulate external financial advisors, subnational debt policy efficiency can also be achieved through metropolitan or intra-regional public policy cooperation. Joint public works produce economies of scale for project development and administration, as well as for project finance, reducing aggregate financing requirements and costs, and thus the fiscal impact of low administrative capacity or opportunistic financial advisors. National governments hoping to improve efficiency in subnational debt decisions should thus seek to foment metropolitan area policy cooperation – such as by providing funds for joint projects, as in Mexico – or metropolitan area administrative structures – such as by requiring metropolitan area administrative plans, as in South Korea or Japan – to encourage inter-city cooperation on public policy and works.

Table 1: Summary Statistics for Dependent and Independent Variables (2005-2012)

Dependent Variables

All Observations	*Total Obs.**	*Avg.*	*Std. Dev.*	*Min.*	*Max.*
Total Debt Per Capita	19,515	83.86	1,317.79	0.00	133,887.20
Development Bank Debt PC	19,515	51.84	143.95	0.00	2,645.73
Commercial Bank Debt PC	19,515	25.30	1,307.79	0.00	133,887.20
Bond Debt Per Capita	19,515	5.79	63.25	0.00	6,714.76
Trust Debt Per Capita	19,515	0.50	22.21	0.00	1,690.86
Observations with Debt	*Obs.*	*Avg.*	*Std. Dev.*	*Min.*	*Max.*
Total Debt Per Capita	5,594	292.56	2,449.05	1.62E-15	133,887.20
Development Bank Debt PC	4,700	215.23	225.57	1.62E-15	2,645.73
Commercial Bank Debt PC	803	614.78	6,422.76	8.93E-01	133,887.20
Bond Debt Per Capita	802	140.96	280.00	5.17E+00	6,714.76
Trust Debt Per Capita	149	65.70	246.45	2.27E-08	1,690.86

Independent Variables

	*Total Obs.**	*Avg.*	*Std. Dev.*	*Min.*	*Max.*
Marginality Index	19510	0.01	0.99	-2.27	4.50
	Total Obs.	*Yes*	*Share "Yes"*	*No*	*Share "No"*
Lying within Metro Area	19,544	2,808	0.14	16,736	0.86
Metro Plan/Program	19,544	2,192	0.11	17,352	0.89
	Munis.	*Yes*	*Share "Yes"*	*No*	*Share "No"*
Lying within Metro Area 2010	2,443	351	0.14	2,089	0.86
Metro Plan/Program 2010	2,443	274	0.11	2,166	0.89
	*Total Obs.**	*Avg.*	*Std. Dev.*	*Min.*	*Max.*
Homicide Rate	19,515	16.43	46.97	0.00	2,270.95
Vertical Fiscal Imbalance	16,982	0.85	0.14	0.00	1.00
Total Fiscal Assets Per Capita	16,979	2,668.18	1,674.90	123.56	27,703.08
Total Population	19,515	40,136	118,134	93	1,688,258
Rural Population Share	19,510	0.61	0.36	0.00	1.00
	Total Obs.	*Yes*	*Share "Yes"*	*No*	*Share "No"*
Election Year	19,544	5,873	0.30	13,671	0.70
Aligned with State Governor	19,544	9,377	0.48	10,167	0.52
PRI Municipalities	19,544	10,726	0.55	8,818	0.45
PAN Municipalities	19,544	3,720	0.19	15,824	0.81
PRD Municipalities	19,544	2,255	0.12	17,289	0.88
PAN-PRD Municipalities	19,544	1,877	0.10	17,667	0.90
"Other" Party Municipalities	19,544	939	0.05	18,605	0.95

Note: * Does not total 19,544 due to missing data.

Table 2: Types of Debt in Municipal Debt Portfolios (2005-2012)

	Main Types of Debt	**Minor Types of Debt**	**Municipalities**

	Dev. Bank Debt	*Com. Bank Debt*	*Bond Debt*	*Trust Debt*	*"Other" Debt*	*Number*	*Percent Total*
Group 1	Yes	Yes	Yes	No	No	11	0.45
	Yes	Yes	Yes	Yes	Yes	4	0.16
	Yes	Yes	Yes	Yes	No	3	0.12
	Yes	Yes	Yes	No	Yes	0	0.00
						18	***0.74%***
Group 2	Yes	Yes	No	No	No	168	6.88
	Yes	Yes	No	Yes	Yes	4	0.16
	Yes	Yes	No	Yes	No	12	0.49
	Yes	Yes	No	No	Yes	9	0.37
						193	***7.90%***
Group 3	Yes	No	Yes	No	No	102	4.18
	Yes	No	Yes	Yes	Yes	1	0.04
	Yes	No	Yes	Yes	No	51	2.09
	Yes	No	Yes	No	Yes	0	0.00
						154	***6.30%***
Group 4	No	Yes	Yes	No	No	0	0.00
	No	Yes	Yes	Yes	Yes	0	0.00
	No	Yes	Yes	Yes	No	0	0.00
	No	Yes	Yes	No	Yes	0	0.00
						0	***0.00%***
Group 5	Yes	No	No	No	No	821	33.61
	Yes	No	No	Yes	Yes	1	0.04
	Yes	No	No	Yes	No	42	1.72
	Yes	No	No	No	Yes	6	0.25
						870	***35.61%***
Group 6	No	Yes	No	No	No	65	2.66
	No	Yes	No	Yes	Yes	0	0.00
	No	Yes	No	Yes	No	0	0.00
	No	Yes	No	No	Yes	1	0.04
						66	***2.70%***
Group 7	No	No	Yes	No	No	26	1.06
	No	No	Yes	Yes	Yes	0	0.00
	No	No	Yes	Yes	No	13	0.53
	No	No	Yes	No	Yes	0	0.00
						39	***1.60%***
Group 8	No	No	No	No	No	1098	44.94
	No	No	No	Yes	Yes	1	0.04
	No	No	No	No	Yes	1	0.04
	No	No	No	Yes	No	0	0.00
						1,100	***45.03%***
Municipalities with Debt (Summary Statistics)						***1,342***	***54.93%***
Municipalities with Three Main Types of Debt (Group 1)						18	1.34
Municipalities with Two Main Types of Debt (Groups 2, 3, and 4)						347	25.86
Municipalities with One Main Types of Debt (Groups 5, 6, and 7)						975	72.65
Municipalities with Minor Types of Debt (See Group 8)						2	0.15
Subtotal/Share of Municipalities with Debt						1,342	100.00
Municipalities without Debt (Summary Statistics) (See Group 8)						***1,098***	***44.94%***

Municipalities with Missing Data	***3***	***0.12%***
TOTAL MUNICIPALITIES	***2,443***	***100.00%***

Table 3: Metropolitan Designation, Administrative Capacity, and Municipal Debt in Mexico

	Model 1	Model 2	Model 3	Model 4	Model 5
	Total Debt	Development Bank Debt	Trust Debt	Commercial Bank Debt	Bond Debt
Lag Total Debt	0.600***	-0.00515	0.00237***	-0.00112	0.0102***
	(0.110)	(0.00621)	(0.000852)	(0.0210)	(0.00379)
Lag Dev. Bank Debt		0.728***			
		(0.0117)			
Lag Trust Debt			0.532**		
			(0.226)		
Lag Com. Bank Debt				0.194	
				(0.245)	
Lag Bond Debt					0.656***
					(0.0525)
Lying in a Metro Area	-0.395**	-0.384***	-0.0462*	0.190	0.0266
	(0.190)	(0.134)	(0.0264)	(0.183)	(0.0612)
Marginality Index	-0.00582	0.0285	0.0190**	-0.118*	-0.00679
	(0.0777)	(0.0583)	(0.00829)	(0.0701)	(0.0282)
Total Population	0.00638***	0.00127***	0.0000450	0.00962***	-0.000146
	(0.00156)	(0.000398)	(0.0000858)	(0.00299)	(0.000180)
Rural Population	-0.268	-0.348**	-0.0532*	0.502**	0.0711
	(0.203)	(0.139)	(0.0283)	(0.209)	(0.0604)
Vertical Fiscal Imbal.	-2.111***	-1.154***	-0.254**	-0.0694	-0.0652
	(0.575)	(0.362)	(0.119)	(0.387)	(0.131)
Total Fiscal Assets	0.00716	-0.00126	-0.00116*	0.0116	0.000818
	(0.00867)	(0.00342)	(0.000609)	(0.00959)	(0.00171)
Homicide Rate	0.0295*	0.0360***	-0.000649	-0.0113*	-0.00128
	(0.0161)	(0.0119)	(0.00104)	(0.00578)	(0.00366)
Muni. Election Year	-1.545***	-1.778***	0.000152	-0.139*	0.128***
	(0.139)	(0.0906)	(0.0145)	(0.0788)	(0.0198)
Margin of Victory	-0.672*	-0.420*	0.0272	0.0542	-0.0935
	(0.358)	(0.229)	(0.0237)	(0.324)	(0.0768)
Partisan Alignment	0.0914	0.0968	-0.00464	0.0742	-0.00173
	(0.110)	(0.0930)	(0.0132)	(0.0652)	(0.0217)
PAN Municipality	-0.0153	0.0150	-0.0198	-0.207	0.140***
	(0.177)	(0.122)	(0.0221)	(0.154)	(0.0354)
PRD Municipality	-0.202	-0.163	-0.0133	-0.200**	0.108***
	(0.142)	(0.125)	(0.00875)	(0.0830)	(0.0337)
PAN-PRD Muni.	-0.556***	-0.0774	0.0104	-0.255**	-0.257***
	(0.186)	(0.140)	(0.00985)	(0.101)	(0.0389)
Other Party Muni.	-0.146	0.0182	-0.00255	-0.165	-0.0783*
	(0.220)	(0.187)	(0.0180)	(0.121)	(0.0420)
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes
State Fixed Effects	Yes	Yes	Yes	Yes	Yes
Constant	1.661	2.108***	0.307**	-2.507**	-0.202
	(1.115)	(0.654)	(0.130)	(0.979)	(0.313)

Observations	14789	14789	14789	14789	14789
R-2	0.518	0.630	0.267	0.0874	0.585
Chi-2	13330.5	14675.1	56.46	659.6	4516.9

Note: Linear Cross-Sectional Time-Series Analysis with Panel-Corrected Standard Errors. Panels corrected for heteroskedastic and autocorrelated (order 1) errors. Standard Errors in parentheses.
* p<0.10, ** p<0.05, *** p<0.10

Table 4: Metropolitan Plan, Administrative Capacity, and Municipal Debt in Mexico

	Model 1	**Model 2**	**Model 3**	**Model 4**	**Model 5**
	Total Debt	**Development Bank Debt**	**Trust Debt**	**Commercial Bank Debt**	**Bond Debt**
Lag Total Debt	0.600***	-0.00494	0.00239***	-0.000845	0.0102***
	(0.110)	(0.00622)	(0.000851)	(0.0210)	(0.00379)
Lag Dev. Bank Debt		0.728***			
		(0.0117)			
Lag Trust Debt			0.542**		
			(0.225)		
Lag Com. Bank Debt				0.191	
				(0.246)	
Lag Bond Debt					0.656***
					(0.0525)
Metro Area Plan	-0.368*	-0.450***	-0.0369	0.367	0.0224
	(0.188)	(0.135)	(0.0261)	(0.230)	(0.0698)
Marginality Index	-0.000197	0.0271	0.0200**	-0.107	-0.00735
	(0.0773)	(0.0578)	(0.00837)	(0.0706)	(0.0284)
Total Population	0.00636***	0.00132***	0.0000376	0.00953***	-0.000144
	(0.00154)	(0.000399)	(0.0000850)	(0.00295)	(0.000176)
Rural Population	-0.244	-0.333**	-0.0493*	0.509**	0.0693
	(0.199)	(0.138)	(0.0272)	(0.210)	(0.0611)
Vertical Fiscal Imbal.	-2.099***	-1.160***	-0.252**	-0.0552	-0.0662
	(0.572)	(0.365)	(0.118)	(0.386)	(0.130)
Total Fiscal Assets	0.00721	-0.00119	-0.00114*	0.0114	0.000815
	(0.00867)	(0.00342)	(0.000606)	(0.00960)	(0.00170)
Homicide Rate	0.0297*	0.0362***	-0.000661	-0.0113**	-0.00129
	(0.0161)	(0.0119)	(0.00104)	(0.00577)	(0.00367)
Muni. Election Year	-1.544***	-1.777***	0.000448	-0.140*	0.128***
	(0.139)	(0.0906)	(0.0146)	(0.0787)	(0.0198)
Margin of Victory	-0.669*	-0.417*	0.0273	0.0547	-0.0937
	(0.358)	(0.229)	(0.0236)	(0.324)	(0.0767)
Partisan Alignment	0.0903	0.0952	-0.00437	0.0752	-0.00166
	(0.110)	(0.0930)	(0.0131)	(0.0652)	(0.0217)
PAN Municipality	-0.0134	0.0159	-0.0196	-0.208	0.140***
	(0.177)	(0.122)	(0.0219)	(0.154)	(0.0354)
PRD Municipality	-0.198	-0.160	-0.0128	-0.200**	0.108***
	(0.142)	(0.125)	(0.00861)	(0.0830)	(0.0337)
PAN-PRD Muni.	-0.555***	-0.0764	0.0104	-0.255**	-0.257***
	(0.186)	(0.140)	(0.00979)	(0.101)	(0.0389)
Other Party Muni.	-0.144	0.0163	-0.00218	-0.162	-0.0785*
	(0.221)	(0.187)	(0.0179)	(0.121)	(0.0420)

Year Fixed Effects	Yes	Yes	Yes	Yes	Yes
State Fixed Effects	Yes	Yes	Yes	Yes	Yes
Constant	1.638	2.107***	0.302**	-2.528**	-0.200
	(1.109)	(0.656)	(0.129)	(0.982)	(0.313)
Observations	14789	14789	14789	14789	14789
R-2	0.518	0.630	0.276	0.0861	0.585
Chi-2	13281.4	14645.2	57.24	653.7	4523.2

Note: Linear Cross-Sectional Time-Series Analysis with Panel-Corrected Standard Errors. Panels corrected for heteroskedastic and autocorrelated (order 1) errors. Standard Errors in parentheses.
* p<0.10, ** p<0.05, *** p<0.10

Table 5: Metropolitan Designation, Administrative Capacity, and Municipal Debt in Mexico (Excluding the State of Oaxaca)

	Model 1	**Model 2**	**Model 3**	**Model 4**	**Model 5**
	Total Debt	**Development Bank Debt**	**Trust Debt**	**Commercial Bank Debt**	**Bond Debt**
Lag Total Debt	0.567***	-0.00291	0.00236***	-0.000839	0.0104***
	(0.119)	(0.00639)	(0.000883)	(0.0235)	(0.00400)
Lag Dev. Bank Debt		0.709***			
		(0.0124)			
Lag Trust Debt			0.537**		
			(0.226)		
Lag Com. Bank Debt				0.170	
				(0.246)	
Lag Bond Debt					0.657***
					(0.0531)
Lying in a Metro Area	-0.417*	-0.390***	-0.0530*	0.182	0.0303
	(0.213)	(0.150)	(0.0300)	(0.208)	(0.0659)
Marginality Index	-0.0392	0.000960	0.0347**	-0.159	-0.0239
	(0.116)	(0.0839)	(0.0145)	(0.120)	(0.0427)
Total Population	0.00678***	0.00127***	0.0000147	0.0101***	-0.0000851
	(0.00162)	(0.000440)	(0.0000928)	(0.00308)	(0.000196)
Rural Population	-0.213	-0.307	-0.0748*	0.526*	0.0836
	(0.277)	(0.192)	(0.0395)	(0.300)	(0.0942)
Vertical Fiscal Imbal.	-2.526***	-0.996*	-0.405**	-0.315	0.0925
	(0.950)	(0.525)	(0.193)	(0.653)	(0.200)
Total Fiscal Assets	0.0109	-0.00229	-0.00123	0.0156	0.00199
	(0.0121)	(0.00461)	(0.000882)	(0.0146)	(0.00242)
Homicide Rate	0.0133	0.0283*	-0.000824	-0.0154*	-0.00492
	(0.0197)	(0.0151)	(0.00130)	(0.00865)	(0.00515)
Muni. Election Year	-1.557***	-1.821***	-0.00145	-0.160**	0.167***
	(0.140)	(0.0970)	(0.0147)	(0.0784)	(0.0262)
Margin of Victory	-0.743	-0.300	0.0324	0.0121	-0.175
	(0.563)	(0.372)	(0.0386)	(0.487)	(0.129)
Partisan Alignment	-0.133	0.0164	-0.00262	0.0838	-0.0801**
	(0.157)	(0.125)	(0.0204)	(0.0976)	(0.0339)
PAN Municipality	-0.204	-0.0668	-0.0188	-0.221	0.0911***
	(0.189)	(0.139)	(0.0238)	(0.154)	(0.0337)
PRD Municipality	-0.296*	-0.235*	-0.0123	-0.218**	0.107***
	(0.159)	(0.140)	(0.00985)	(0.0926)	(0.0372)

PAN-PRD Muni.	-1.141***	-0.463	0.00998	-0.271*	-0.387***
	(0.336)	(0.297)	(0.0183)	(0.144)	(0.0600)
Other Party Muni.	-0.395	-0.100	-0.00105	-0.196	-0.140***
	(0.246)	(0.211)	(0.0213)	(0.135)	(0.0482)
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes
State Fixed Effects	Yes	Yes	Yes	Yes	Yes
Constant	1.849	2.057***	0.466**	-2.694**	-0.434
	(1.491)	(0.777)	(0.195)	(1.274)	(0.369)
Observations	11890	11890	11890	11890	11890
R-2	0.472	0.604	0.274	0.0752	0.587
Chi-2	9934.9	11965.2	56.60	595.6	4683.9

Note: Linear Cross-Sectional Time-Series Analysis with Panel-Corrected Standard Errors. Panels corrected for heteroskedastic and autocorrelated (order 1) errors. Standard Errors in parentheses.
* p<0.10, ** p<0.05, *** p<0.10

Table 6: Metropolitan Plan/Program, Administrative Capacity, and Municipal Debt Dynamics in Mexico (Excluding the State of Oaxaca)

	Model 1	**Model 2**	**Model 3**	**Model 4**	**Model 5**
	Total Debt	**Development Bank Debt**	**Trust Debt**	**Commercial Bank Debt**	**Bond Debt**
Lag Total Debt	0.568***	-0.00271	0.00238***	-0.000517	0.0104***
	(0.119)	(0.00641)	(0.000883)	(0.0235)	(0.00401)
Lag Dev. Bank Debt		0.708***			
		(0.0124)			
Lag Trust Debt			0.544**		
			(0.225)		
Lag Com. Bank Debt				0.167	
				(0.246)	
Lag Bond Debt					0.657***
					(0.0531)
Metro Area Plan	-0.380*	-0.456***	-0.0424	0.383	0.0245
	(0.215)	(0.154)	(0.0297)	(0.265)	(0.0760)
Marginality Index	-0.0321	-0.000784	0.0359**	-0.144	-0.0247
	(0.116)	(0.0833)	(0.0146)	(0.122)	(0.0431)
Total Population	0.00677***	0.00132***	0.00000766	0.00996***	-0.0000817
	(0.00161)	(0.000441)	(0.0000923)	(0.00304)	(0.000192)
Rural Population	-0.181	-0.285	-0.0697*	0.530*	0.0811
	(0.274)	(0.192)	(0.0380)	(0.302)	(0.0954)
Vertical Fiscal Imbal.	-2.511***	-1.007*	-0.401**	-0.290	0.0910
	(0.946)	(0.530)	(0.192)	(0.650)	(0.200)
Total Fiscal Assets	0.0109	-0.00222	-0.00122	0.0153	0.00199
	(0.0121)	(0.00461)	(0.000880)	(0.0146)	(0.00241)
Homicide Rate	0.0134	0.0284*	-0.000829	-0.0154*	-0.00493
	(0.0197)	(0.0151)	(0.00130)	(0.00863)	(0.00515)
Muni. Election Year	-1.556***	-1.820***	-0.00119	-0.161**	0.167***
	(0.140)	(0.0969)	(0.0148)	(0.0783)	(0.0262)
Margin of Victory	-0.735	-0.294	0.0332	0.0127	-0.175
	(0.563)	(0.372)	(0.0385)	(0.487)	(0.128)
Partisan Alignment	-0.134	0.0146	-0.00231	0.0856	-0.0800**
	(0.157)	(0.124)	(0.0203)	(0.0976)	(0.0339)

PAN Municipality	-0.201	-0.0657	-0.0183	-0.222	0.0908***
	(0.189)	(0.139)	(0.0236)	(0.154)	(0.0337)
PRD Municipality	-0.291*	-0.231*	-0.0117	-0.218**	0.107***
	(0.159)	(0.140)	(0.00970)	(0.0926)	(0.0372)
PAN-PRD Muni.	-1.139***	-0.462	0.0103	-0.269*	-0.387***
	(0.336)	(0.296)	(0.0183)	(0.143)	(0.0600)
Other Party Muni.	-0.392	-0.101	-0.000365	-0.192	-0.141***
	(0.246)	(0.212)	(0.0212)	(0.135)	(0.0482)
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes
State Fixed Effects	Yes	Yes	Yes	Yes	Yes
Constant	1.820	2.058***	0.459**	-2.716**	-0.431
	(1.483)	(0.780)	(0.193)	(1.278)	(0.369)
Observations	11890	11890	11890	11890	11890
R-2	0.471	0.604	0.280	0.0738	0.587
Chi-2	9905.5	11934.6	57.18	588.5	4690.0

Note: Linear Cross-Sectional Time-Series Analysis with Panel-Corrected Standard Errors. Panels corrected for heteroskedastic and autocorrelated (order 1) errors. Standard Errors in parentheses.
* p<0.10, ** p<0.05, *** p<0.10

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