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# Taxing with Dictators and Democrats: Regime Effects, Transfers and Revenue in Argentina's Provinces

Melissa Ziegler Rogers

**Abstract:** Political institutions strongly influence incentives to tax. In this article, I examine differences across national regimes in provincial taxation in Argentina from 1959–2001 and compare them to sub-national regimes under national democracy. I argue that elections fundamentally shape taxation by guiding career incentives of provincial leaders. Under autocratic regimes, sub-national leaders have strong motivation to tax because they answer to national leaders who reward extraction. I find that national autocrats tax at higher levels, using more difficult taxes. In democratic systems, governors judged by local constituents use political resources to avoid taxation. Governors in closed electoral regimes generally collect less tax revenue than governors in competitive provinces, but this effect is largely driven by national coalition-building and privileged access to national resources. An important difference across sub-national regime type is incidence – closed provinces extract disproportionately from the dependent business sector.

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**Keywords:** Argentina, democracy, autocracy, taxation, fiscal federalism

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## Introduction

A regime's success at taxation highlights its institutional incentives and constituency appeals. Previous studies have offered highly contradictory conclusions about the relative efficacy of regime types at policy implementation, particularly taxation. These studies have not been able to clearly specify the theoretical reasons why regimes may vary in tax collection, or been able to measure these differences. In this study, I focus on linkages between leaders' career paths and taxation, and employ a new sub-national research design to test this approach. I argue that elections, in particular, unite incentives for politicians to pay careful attention to their constituencies and political options when deciding to tax. Career goals separate those politicians who must answer to voters from those who look to the top brass for advancement. Where dictators reward leaders and bureaucrats for taxing well, high collection should be expected. In democracies, extraction levels depend on the ability of politicians to gather alternative resources and upon whom politicians are able to lay the burden of taxation

Extant literature on the regime effects of taxation has suggested that elections have broad effects on state–society interactions without exploring the specific mechanisms through which dictators or democrats extract resources. This article compares democracy and dictatorship, as observed at both the national and sub-national levels in Argentina, to identify how political delegation varies by regime type to impact tax outcomes. Specifically, I examine how authority is delegated (by elections or appointment) and whether this influences the constituencies that tax-collecting politicians seek to please, and, accordingly, the level and type of revenue collected. I have conducted a within-country study of Argentina's provincial taxation from 1959–2001 to hold constant many of the factors that have confounded previous scholarship, such as culture, history, different tax structures, and variation in type of autocratic regime. A sub-national focus provides a more controlled environment under which to “open the black box” in order to see exactly what changes between regimes that may influence these policy outputs.

Importantly, I investigate not only national level regime type, but also variance in political competition within democracies. Sub-national autocracy, as defined by Gervasoni (2010b), refers to political environments with low levels of contestation in provincial elections, infrequent turnover, and weak constraints on government action. Importantly, these regimes exist under a regime of national democracy, conduct largely free and fair elections, and must answer to political allies and foes within the national government (Behrend 2011). Variance in sub-national electoral

quality is a growing area of interest in a number of federal nations, including Brazil (Montero 2007), India (Beer and Mitchell 2006), Mexico (Benton 2012), and Russia (Gel'man and Ross 2010). Few studies have examined whether variation in electoral competitiveness matters for sub-national policy performance. The present paper examines whether the taxation of governors in closed electoral systems under democracy differs from that of governors in competitive provinces, or if they more closely resemble national autocrats. Moreover, I observe differences in how provinces collect taxes under democracy and what drives these changes. This analysis is an early step towards identifying characteristics of these regimes and the ways sub-national political competition may matter (or not) for policy output.

The results of this study offer several insights for the comparative study of regime type, federalism and taxation. Specifically, I find that national autocrats outperform their democratic counterparts in terms of total provincial taxation and the most difficult taxes to collect. Within democracies, closed electoral regimes generally perform worse than those headed by governors who face political competition. This effect under national democracy is largely driven by the privileged access that closed regimes have to national transfers. Once the conditional effect of central transfers on sub-national regime effort is included, autocratic governors actually collect more revenue.<sup>1</sup> This difference can be primarily explained by collection from economic sectors that are highly dependent on and loyal to autocratic governors. Important defining features of these mixed electoral regimes include politicians taxing from their loyalists, rather than their opponents' constituents, and using national representative institutions to extract resources.

## Theoretical Motivation

Leaders ask the two following interrelated (but not exhaustive) questions to inform their approach to taxation: (1) Does taxing help or hurt my career goals? (2) Do I need tax revenue or can I get money elsewhere? I argue that democracy, even with limited contestation, shapes the answers to these questions. Elections structure the career incentives of politicians by shifting the delegation relationship from national leaders under autocracy to voters and representative institutions under democracy. In an

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1 For clarity, I refer to sub-national leaders during autocratic years as "provincial leaders." In democratic years, I refer to autocratic governors in closed electoral regimes and democratic governors in competitive electoral regimes.

autocracy, provincial leaders are rewarded for higher tax collection. Elected governors under democracy, on the other hand, must answer to voters who are not so eager to support politicians who impose tax burdens on them. Under national democracy, governors who are elected either under more competitive or more restricted political environments have convergent incentives to collect relatively low provincial taxes because they can rely on national transfers for revenue and they are delegates of tax-averse citizens. Accordingly, the differences observed between governors in closed and competitive electoral systems under national democracy are apparent in the sources of their tax revenue, which reflect distinct constituencies, more so than in total tax collection.<sup>2</sup>

Regime type does not always align the nexus between taxation and career goals. However, scholars have pointed to several reasons why autocracies might encourage higher collection. Absent electoral competition, autocrats may be relatively insulated from citizens and therefore willing to garner resources through unpopular taxation (Haggard 1990; De Schweinitz 1964; Kasara 2007). They may have the comparative advantage in coercion that is necessary to enforce taxation (Bellin 2004). Autocrats may also run more effective bureaucratic organizations and enforce taxation more readily (Oszlak 1986; Most 1980). In particular, military governments are characterized by centralization and uniformity of state structures.<sup>3</sup> All leaders need available government resources, and top-level autocrats should have good reason and ability to reward officials who improve their finances. Importantly, it is those national leaders, not local voters, who hold the fate of provincial leaders under autocracy.

In contrast, the mechanism of elections, regardless of whether it is highly competitive, places greater power in the hands of citizens, political parties, and representative institutions in democracies to determine poli-

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2 Another way to view this dichotomy is within regime type. Under national autocracy, the incentives of provincial leaders converge on higher extraction because career incentives promote tax collection. Political variables should not matter under autocracy, and transfers should not provide a disincentive to tax. Under democracy, competitive and autocrat governors' incentives to tax diverge according to their constituencies. For clarity, I focus primarily on the cross-regime comparison; autocrat versus democrat. I am grateful to an anonymous reviewer for pointing out this crucial distinction to help refine the theoretical argument.

3 This does not mean that all military regimes are exclusively centralized or that lower levels of the military hierarchy do not affect governance. I do not expect perfect cooperation between national leaders and subordinates under military dictatorship, but a stronger principal-agent relationship with sub-national officials.

ticians' career paths. This decentralized and mixed delegation may cause common pool problems whereby elected officials try to shift the tax burden to others. On the other hand, democrats who tax and deliver services well should, in theory, also see their career goals advanced (Bergman 2003) and may be able to collect more through quasi-voluntary compliance (Levi 1989). However, these characterizations of regime types are narrow and cannot capture the wide heterogeneity in autocratic and democratic regime types (Geddes 1999; Mainwaring, Brinks, and Pérez-Liñán 2001).

Willingness to tax depends on the cost function of taxation, including the existence of viable alternative funding. Non-tax resources are available across regime types but have been particularly linked to autocracies (Karl 1997; Ross 2001). If money is available through means other than taxation, tax effort may decrease because politicians prefer resources with fewer strings attached. These resources, whether they are oil money, foreign aid, or national transfers, substitute for tax effort (Ross 2001; Morrison 2009; Gervasoni 2010b). National transfers, which are particularly relevant in the Argentine case, have been shown to dampen tax collection and encourage profligate spending (Wibbels 2003; Wibbels 2001). These rentier resources may disproportionately aid incumbents and make competitive democracy less likely (Ross 2001).

Within Argentina, these characterizations of regimes have not provided powerful explanations of *national* tax outcomes. Autocrats and democrats alike have faced reluctant constituents and distributed non-tax resources to provincial leaders. However, the incentives of political and fiscal federalism, and the corresponding motivation to tax, were clearly distinct across these regime types at the provincial level. In Argentina, political federalism weakens the ties between success in taxation and career advancement for provincial politicians (Dillinger and Webb 1999). Governors have independent incentives to please voters and political resources to attract (popular) national resources that can substitute for unpopular taxation. In contrast, the political autonomy of sub-national leaders is suppressed under autocracy: provincial leaders are military officers appointed by and responsible to national leaders.<sup>4</sup> If national

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4 Political federalism was suppressed under autocracy because provincial leaders were not chosen by the provinces themselves (Munck 1998). Representative institutions such as elections and provincial legislatures did not operate. However, other aspects of federalism, including administrative and fiscal federalism, were strong, and perhaps strengthened, under autocracy (Eaton 2006). This federal arrangement in Argentina did not apply to Brazil during the same peri-

leaders want greater tax capacity in the provinces, appointed leaders have strong incentives to improve tax collection in their province to advance their position in the military hierarchy.

Importantly, political federalism interacts with fiscal federalism; governors under democracy have the political resources necessary to lobby the national government for transfers instead of investing in tax capacity.<sup>5</sup> Accordingly, during democratic times, governors will want to shift the burden of taxation away from provincial taxes and toward the extraction of national resources (Sanguinetti and Besfamille 2004; Saiegh and Tommasi 1999; Bonvecchi and Lodola 2011). The centralized transfer system appeals to all governors because they can deflect blame for taxation to the national government (Eaton and Dickovick 2004). The national government prefers revenue centralization as a means of holding together a ruling coalition (Diaz-Cayeros 2006). Moreover, governors – who are the dominant political actors in the provinces – are rewarded electorally for bringing transfer resources back to their provinces (Remmer and Gélinau 2003). Because national legislators are loyal to governors more than national institutions, the national law-making bodies are biased in favor of decentralizing expenditures (Jones et al. 2002). Additionally, democracies were more generous and consistent in their allocation of federal transfers than autocracies, further reducing incentives to tax (Diaz-Cayeros 2006). Amongst provincial leaders under national dictatorships, the desire to substitute transfers for taxes is not so clear – these leaders should want to show their effectiveness at provincial administration rather than depending on national money. The fact that transfers were less consistent under autocracy also means that autocratic provincial leaders needed to extract taxes to meet revenue demands. Thus, political federalism and fiscal federalism both reduce incentives for all governors under democracy to tax well.

In sharp contrast to provincial leaders dependent on national dictators, governors in closed electoral regimes during democratic times have somewhat weaker incentives to collect than governors who face competitive, open political systems because of their access to non-tax resources.

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od, which enables potentially interesting cross-national comparison (Falletti 2011).

5 Argentina has a well-studied fiscal federal and taxation system that analyzes sub-national politics and fiscal motivation (Jiménez and Cetrángolo 2004; Melo 2007; Román 2008). I am not aware of any study that addresses taxation across regime type in Argentina. Melo (2007) addressed regime type from a cross-national perspective to explain Argentina's low taxation but did not specifically address regime type and sub-national taxation.

National political institutions and fiscal federalism put sub-national autocrats in a privileged position to extract national transfers that substitute for tax revenue. There are at least three reasons for this. First, leaders of sub-national closed regimes are overrepresented in national legislatures that distribute resources (Gibson and Calvo 2000; Gibson, Calvo, and Falletti 2004). Second, they are disproportionately powerful in national parties and presidential politics due to electoral rules (Calvo and Murillo 2004; Snyder and Samuels 2001). Third, most of these provinces are relatively poor and thus the recipients of progressive revenue sharing (Eaton 2006). All of these political resources result in significantly higher access to national resources in provinces that are more likely to have closed political systems (Gervasoni 2010b). These actors are crucial for cementing the national ruling coalition (Gibson 1996).

At the same time, the constituents who deliver votes to incumbent sub-national autocrats include local elites, state employees, and the lowest-income strata in mostly poor provinces (Behrend 2011). Unlike politicians in developed countries, autocratic governors do not have a viable option to lay the tax burden on their opposition's constituency. In provinces with limited contestation and small economies, the opposition is often excluded from economic power and is not large enough to rely on for tax resources. The poor, who represent the majority of constituents, cannot serve as a source of significant revenues, regardless of their political affiliation. Accordingly, sub-national autocrats, to the extent that they must tax, do so from their well-endowed and loyal constituency – the dependent business sector – in exchange for federal tax breaks and other perks, services funded by national transfers, and a predictable business environment (Guiñazú 2003). This expectation may be consistent with Timmons' (2010) finding that developed democratic nations garner more revenue by taxing their loyalists and divvying benefits to them than by taxing the opposition. It may also show similarities to Kasara's (2007) results for Africa that presidential co-ethnics are taxed at higher levels because loyalists had few political alternatives, particularly in autocratic regimes. This logic also rings true for the dependent business sector in closed provinces, who benefit from the services of the closed regimes, are typically legally and financially connected to the provincial government, and are captive to its political control. Additionally, according to Timmons, only parties that can be expected to hold office for long periods (which applies in provinces with limited contestation) can credibly commit to delivering benefits in exchange for tax revenue from loyal constituents.

Even though they are somewhat shielded from electoral pressures, and therefore the political costs of taxation, autocratic governors are still wary of upsetting political opponents and constituents alike. Heavy taxation in closed political systems could ostensibly challenge the equilibrium of patronage and clientelism in these provinces. Voters voluntarily return autocrat governors to office in exchange for low taxation, heavy state subsidies of everyday needs, and abundant provincial government jobs (Behrend 2011). These mixed incentives suggest that predictions are not so clear for the *level* of tax collection by sub-national autocrats. Outside resources and constituency effects should influence the nature of that taxation while dampening collection overall under national democracy.

The role of career goals, the taxation cost function, and the availability of alternative resources generate the two following primary hypotheses in the case of Argentina's political regimes:

**Hypothesis 1 (Centralized Incentives in National Autocracy):** Provinces will collect more tax revenue under national autocracy than under national democracy.

**Hypothesis 2 (Local Incentives in National Democracy):** Tax performance across regimes under democracy varies primarily in incidence, not level, because all elected governors have weak incentives to extract. Governors in closed electoral regimes rely disproportionately on their dependent constituents in the business sector for tax revenue.

## Level of Analysis and Case Selection

Despite contradictory predictions of the relationship between regime type and tax collection, I am only aware of one study that has attempted to settle the debate using quantitative evidence (Cheibub 1998). In his cross-national study of regimes from 1970–1990, Cheibub found that national democrats generally perform better on total taxes as a percentage of GDP, but he attributes these results largely to relative economic development.

Unsurprisingly, heterogeneity in regime type, and in the highly aggregated indicator of national total tax collection, clouds the theoretical and empirical relationship between regime type and taxation. I have adopted a sub-national approach that allows me to more closely identify, in theory and empirics, the expected regime effect. Provincial taxes in Argentina have several attractive characteristics for examining relative taxation. They are nearly constant, in type of taxes and rates, across the period examined and provinces, unlike national taxes, which vary con-

siderably in composition and rates. I have also disaggregated the total tax indicator in order to capture capacity and constituency effects. The sub-national approach is helpful in controlling for many of the factors that Cheibub worried could have clouded his results; by looking within a single country, we can hold cultural and historical factors constant while still investigating a relatively large number of cases (Snyder 2001).

Argentina experienced dramatic regime instability during the twentieth century. Despite relatively high levels of economic development and political modernization, democracies were overturned by autocratic regimes until the country's transition to democracy in 1983. Table 1 shows the timeline of regime change in Argentina, coded as democracy or dictatorship based on Przeworski et al.'s electoralist definition. I chose this definition due to my theoretical focus on the effects of elections on political career paths (Przeworski et al. 2000). Argentina experienced six national regime transitions in the period under examination. All of these regimes were military dictatorships, with leadership in the provinces determined by the upper echelons of the military branches.<sup>6</sup>

Table 1: National Regime Timeline, Argentina 1959–2013

Year	Regime Type
1959–1961	Democracy
1962	Dictatorship
1963–1966	Democracy
1966–1973	Dictatorship
1973–1976	Democracy
1976–1983	Dictatorship
1983–Present	Democracy

Source: Author's own compilation based on Przeworski et al. 2000.

Argentina is a federal country with twenty-three autonomous provinces and one federal district. Argentina's federalist system is considered one of the most decentralized in the world in terms of policy implementation and expenditure (Eaton 2006). However, Argentina's tax system is centralized, with the two most lucrative taxes collected by the national government.<sup>7</sup> Most provinces rely heavily on central transfers distributed

6 I have included the presidency of José María Guido (March 1962–October 1963) as a military government. All regime codings are consistent with the designations (competitive vs. closed systems) given by Hartlyn and Morley (1986) and Skidmore and Smith (2005).

7 In comparative perspective, Argentina's provinces collect more tax revenue than nearly all of their counterparts in Latin America (Diaz-Cayeros 2006; Eaton 2006).

from national tax collection to meet their revenue demands (Sawers 1996). Every province collects four taxes that remained largely consistent over the period under study and are administered by provincial authorities for exclusive use by their province.<sup>8</sup>

Argentina's provinces vary considerably in their level of development and economic structure (O'Donnell 1993). The industrialized metropolitan provinces of Buenos Aires (province and capital city), Córdoba, Santa Fe, and Mendoza house over seventy percent of the population and produce over seventy percent of GDP (Saiegh and Tommasi 1999). The remaining nineteen provinces are diverse in terms of economic activity but share fiscal dependence on the national government. Despite the concentration of productivity in the metropolitan regions, the national government is extremely malapportioned in favor of less-populated provinces (Samuels and Snyder 2001). The Peronist party, in particular, relies heavily on clientelistic ties to these provinces to exercise their national policy agenda (Gibson and Calvo 2000; Gibson, Calvo, and Falletti 1999; O'Donnell 1993; Calvo and Murillo 2004). Moreover, given the highly decentralized nature of party organization, policymaking and policy implementation in Argentina, provincial governors are extremely important actors in democratic periods.

Recently, scholars have increased their focus on variation in electoral competitiveness and political openness within democracies, especially in the Argentine case (Gervasoni 2010a; Behrend 2011; Giraudy 2010). Some provinces are highly competitive and others have little or no partisan turnover in their executive or legislative branches.<sup>9</sup> Importantly, for comparative perspective, sub-national elections in Argentina, even in the least competitive provinces, are generally free and fair (Gervasoni 2010b). Accordingly, the differences across regime type within democracy in the case of Argentina are most apparent in the level of competition, access to resources, constraints on incumbents, and constituency bases.

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8 National taxes are collected by national authorities within the provinces. These authorities act autonomously from provincial administration.

9 Behrend (2011) has raised concerns about categorizing these provinces as autocratic because voters freely return governors to office and their range of action is constrained by national democracy. I have retained the term autocrat for ease of comparison between national autocracy and sub-national political competitiveness. I argue the results that contrast national and sub-national autocracy are consistent with Behrend's argument.

## Taxes and Governance

In the present study, taxes serve multiple purposes as a dependent variable. Taxation is theoretically important as a measure of government resources, capacity to implement policy, and state-society relations (Weyland 1998). Taxation is also a development tool of great interest to scholars and international development agencies alike, particularly in Latin America (IDB 2013). Moreover, tax types vary in their difficulty of collection and incidence (Aizenman and Jinjark 2009; Rogers and Weller 2013). The ability of a government to extract using the most administratively and politically difficult taxes is indicative of higher state capacity (Lieberman 2002; Hendrix 2010).

Taxation is also a good indicator of political constituencies. It is commonly assumed that politicians prefer to tax their opponents' constituents and reduce the burden on their own (Hettich and Winer 1988). At the national level, for example, left-wing governments are expected to tax capital and spare labor. Alternatively, politicians may aim their appeals toward less loyal but convincible constituents (Stokes 2005; Magaloni 2006) or tax and spend reciprocally to targeted constituents (Timmons 2005). The approach that politicians can take should depend on state capacity, as well as the nature of their support and supporters. The taxes in Argentina's provinces vary in their incidence and point of extraction – some draw more on higher incomes and the business community than others, allowing investigation of the incidence, by regime type, of provincial taxes.

## Research Design

I have examined my theoretical hypotheses within a single-country, multiple-case design. Taxation in twenty-three provinces of Argentina, measured over forty-three years, provides a reasonably large number of observations in which to test the effects of regime differences in taxation. The sample of sub-national regime type is considerably smaller and more cross-sectional than the national sample. Matching my theoretical hypotheses, I approach the research design with two different measures: total provincial taxes and provincial tax types. With the total tax variables, I see *how much* provinces are collecting across regime types. The tax-type analysis shows *how* they are collecting and whether this differs across regime type.

The dependent variables in these models are provincial taxes as a percentage of gross provincial product (GPP). Taxes in Argentina's

provinces vary in terms of their incidence and their administrative demands on the state (Schwartz and Liuksila 1997). Argentina's provinces collect four taxes – real estate, business, automobile, and stamp taxes. The first two are relatively difficult to collect; real estate taxes are the most challenging since they require extensive information about property ownership and value and concerted enforcement efforts by the province (Schwartz and Liuksila 1997; Morisset and Izquierdo 1993; Bird 1992). Business taxes, which are similar in method and incidence to a sales or value-added tax, also require considerable knowledge of business activities and profits, and coordination with business owners (Aizenman and Jinjara 2009; Santiere, Gómez Sabaini, and Rossignolo 2000). Total tax values are used in the models to reveal tax effort. Business tax extraction reveals constituency effects; high collection suggests a linkage between business elites and the state, and that business owners have a fiscal investment in provincial goods and services.

## Empirical Model

In the absence of a standard set of hypotheses or list of variables to model the nature of a country's tax system, I build upon Cheibub's model of taxation from:

a number of propositions about taxation scattered through the public-finance literature in order to build a model that may serve as a baseline for studying the effects of political regimes on levels of taxation (Cheibub 1998: 351).

Cheibub's model is summarized below and the empirical specification of these variables is detailed in the next section.

Level of Taxation = Regime Type +  $F$ (Transaction Costs, Bargaining Powers, Fiscal Requirements)

## National Model

*Regime Type:* The primary independent variable in the study is regime type and this is added to the base model of taxation described below. To distinguish national regime types, I use *autocratyears*, a binary variable of democracies and autocracies coded according to Przeworski et al.'s (2000) electoral definition of democracy. I ran all models using Polity IV's polity variable for robustness and to capture substantive differences in repressiveness, between, for example, the autocracies of 1959–1961

and 1973–1976. The results are substantively identical and are presented in appendix Table 3A.

*Transaction Costs:* The costs of taxation vary across the type of activity, good, or individual being taxed. However, certain types of economic activity known as “tax handles” are more easily identified and monitored. I include three common measures of tax handles: wealth, an index of relative gross provincial product per capita (*wealthindex*), productivity, captured by population size (*log\_pop*), and size of bureaucracy, measured with government personnel spending per capita (*log\_personnelspending*).<sup>10</sup> In general, economies with higher levels of wealth and productivity tend to be more monetized and less informal, which makes it easier to identify and enforce taxable activity. In theory, higher personnel spending should suggest a stronger bureaucracy that is able to extract taxes. However, this resource is also used for patronage positions under democratic governance (Calvo and Murillo 2004). Accordingly, I expect this variable to distinguish national autocracy from national democracy to some degree, but not separate elected governors, most of which use state bureaucracies for political purposes.

*Bargaining Powers:* As Cheibub notes, it is quite difficult to measure the relative bargaining power of a government vis à vis society with any accuracy. Instead, Cheibub relies upon indicators of a government’s vulnerability. His primary example is a change in chief executive or regime, which lowers the bargaining power of a government since its normal functioning is interrupted and the new leaders must organize their decision-making structures. In the present study, the bargaining power of provincial leaders is given by the dummy variable *transitionyear* (coded 1 for the years in which a regime transition occurred).

*Fiscal Requirements:* Levels of taxation are strongly influenced by a government’s fiscal situation. This includes expectations of their needs depending on what non-tax revenue will come into the government and what expenditures the government must finance. The most important source of financing overall from the provinces is national transfers. I include the measure *transfersshare*, the ratio of national fiscal transfers to total provincial resources, with the expectation that, at least in the democratic years, it should dampen effort to collect taxes. I also include the logged value of inflation (*log\_inflation*), which reduces both incentives to

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10 I use population rather than GPP to avoid putting GPP on the right and left sides of the equation. For a limited sample, I also used electricity production by province as a proxy for productivity. McGuire (2010) argued that this is a stronger indicator of productivity than GPP. The results are nearly identical to this indicator, but data are only available after 1970.

collect taxes and resources available to tax. Inflation is a particularly important control variable in the Argentine case, which has experienced dramatic inflationary periods. The fully specified national model is listed below.

$$\begin{aligned} \text{Provincial Tax Collection / Gross Provincial Product} = & \alpha + \beta_{\text{regimetype}} \\ & + \beta_{\text{transitionyear}} + \beta_{\log\_personnelpending} + \beta_{\text{wealthindex}} + \beta_{\log\_inflation} + \\ & \beta_{\text{transfersshare}} + \beta_{\log\_population} + \varepsilon \end{aligned}$$

## Model Adaption for Democratic Years

The indicator for autocracy at the provincial level (*subnationalcompetitiveness*) is adapted from Gervasoni (2010a; 2010b), who measured the competitiveness of provincial democracy in election years from 1983–2003 using electoral and survey data. Gervasoni’s coding extends from -2.6 to 2.6. I reversed his coding so that higher levels of autocracy have higher values for consistency with the national model. I also extended his coding to the years between elections on the assumption that the political environment (which is of primary interest in this study) remains relatively stable during these times. This expands the sample and allows for corrections due to autocorrelation in the dependent variable. I also included an additional partisan variable – whether the governor and president are co-partisans – based on findings that same-party governors limit their spending relative to opposition governors (Jones, Sanguinetti, and Tommasi 2000; Rodden and Wibbels 2002). If such fiscal prudence also extends to taxation, systematic differences should be observed. The democratic years model is specified below.

$$\begin{aligned} \text{Provincial Tax Collection} = & \alpha + \beta_{\text{subnationalcompetitiveness}} + \beta_{\text{sameparty}} \\ & \text{tpresident} + \beta_{\log\_personnelpending} + \beta_{\text{wealthindex}} + \beta_{\log\_inflation} + \beta_{\text{trans}} \\ & \text{fersshare} + \beta_{\log\_population} + \varepsilon \end{aligned}$$

## Empirical Specification

The empirical specifications employed are time-series panel-corrected standard error models (PCSE) with adaptations to manage violations of assumptions in OLS present with time-series cross-sectional budget data (Beck and Katz 1995). First, all models control for autocorrelation in tax

collection over time, using an AR(1) process.<sup>11</sup> I included year fixed effects in order to control for joint year-to-year shocks and trends in tax collection.<sup>12</sup> The results are robust in the absence of year effects. Second, heterogeneity in the economic productivity, and accordingly, tax extraction of provinces causes heteroskedasticity in the panel. PCSE models assume heteroskedastic panels and contemporaneous cross-sectional correlation, and correct for this bias.<sup>13</sup> These results are shown in the appendix Tables 2A–7A with alternative specifications (fixed effects, year dummies excluded), complementary independent variables (polity) and dependent variables (tax collection per capita, real estate taxation) to demonstrate consistency in the findings.

Of theoretical and empirical importance is whether the differences observed across regime types are primarily cross-sectional or if they also exist within provinces over time. In the national sample, I tested between- and within-province differences using random and fixed effects, respectively.<sup>14</sup> The findings are robust to both specifications. In the democratic model, because of limitations in observations and variance in the sub-national competitiveness measure, the sample is largely cross-sectional. In this section, I focus on the random effects models, but also present fixed effects results in the appendix because some provinces show variance in competitiveness in the period in question. The summary statistics for all variables is shown in the appendix in Table 1A. All budget data are measured in 2001 Argentine pesos.

## National Results

Military governments in Argentina collected more provincial tax revenue than their democratic counterparts, regardless of how taxation is measured. Table 2 shows results of the regression analysis of national regime type and two measures of provincial taxation: total revenue and business revenue.

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- 11 The existence of autocorrelation was tested with Wooldridge test in Stata (xtserial command). The results show strong year-to-year autocorrelation in tax collection.
  - 12 The appropriateness of year fixed effects was confirmed using the testparm command in Stata.
  - 13 Heteroskedasticity was found in both the full sample and the democratic sample using the Breusch-Pagan/Cook-Weisberg test (hettest). In both cases, the null hypothesis of constant variance was unequivocally rejected.
  - 14 Fixed effects were found to be important in the national sample using the Breusch-Pagan Lagrange Multiplier test for unit differences.

**Table 2: Effects of National Regime Type on Provincial Tax Collection, 1958–2001**

Variables	M1	M2	M3	M4
(PCSE with AR(1) Process)	Total Tax Revenue, % of GDP	Total Tax Revenue, % of GDP	Business Tax Revenue, % of GDP	Business Tax Revenue, % of GDP
<i>Regime Type</i>				
Autocratic Years	0.299** (0.138)	0.405*** (0.094)	0.251*** (0.015)	0.236*** (0.070)
<i>Political Controls</i>				
Regime Transition	-0.230** (0.101)	-0.296*** (0.028)	-0.122*** (0.010)	-0.179*** (0.048)
Personnel Spending (log)	0.497*** (0.113)	-0.008 (0.100)	0.038 (0.056)	0.001 (0.058)
<i>Economic Controls</i>				
Provincial Wealth	-0.512** (0.219)	-0.781*** (0.173)	-0.305*** (0.104)	-0.626*** (0.115)
Inflation (log)	-0.163*** (0.028)	-0.01 (0.027)	0.065*** (0.015)	0.016 (0.027)
Transfers	-1.096*** (0.229)	-1.167*** (0.185)	-0.493*** (0.103)	-0.345*** (0.099)
Population (log)	0.423*** (0.056)	0.243*** (0.053)	0.082*** (0.025)	0.497** (0.229)
<i>R-squared</i>	0.565	0.666	0.547	0.633
<i>Observations (No. of Provinces)</i>	943 (23)	943 (23)	943 (23)	943 (23)
<i>Province Fixed Effects</i>	No	Yes	No	Yes
<i>Year Fixed Effects</i>	Yes	Yes	Yes	Yes
$\chi^2$ , F (Prob > F)	217.315 (0.00)	1816.386 (0.00)	307.125 (0.00)	918.505 (0.00)

Note: Standard errors in parentheses. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1. All summary statistics shown in Appendix, Table 1A.

Source: Author’s own calculation and compilation.

These findings are consistent with the motivation of provincial tax authorities under autocracy – they were rewarded for high collection. First, in M1 and M2, the results demonstrate that dictators collected more tax revenue, as a percentage of GDP, shown in the positive and significant coefficient. The coefficients suggest that, during autocratic years, provinces collected around 0.3–0.4 percent more revenue as a percentage of gross provincial product. While modest in numerical terms, the change is significant in substantive terms, an increase of approximately 16 percent

relative to the mean provincial tax collection. This effect was consistent both cross-sectionally (M1) and within provinces as regimes changed over time (M2).

Autocrats also extracted at a higher level in business taxes, as shown in M3 and M4. Provincial business taxes are the most lucrative for all provinces. The effect that autocracy has on collection of this variable was even more significant, in substantive terms, than for the total tax value. Years with a national autocrat at the helm saw business tax revenue increase by 0.25 percent of gross provincial product; this is equivalent to a twenty-eight percent jump in business tax revenue. The results are also robust for the provincial real estate tax, shown in appendix Table 5A, suggesting that autocrats invested in improving provincial capacity on this most difficult tax.

The results for the economic and political controls were mostly expected. Consistent with expectations, regime transitions were associated with reduced tax collection in those years. Inflation dampened tax collection revenue as a percentage of GPP, but these results did not hold for business tax collection. The most economically productive provinces (measured by population) collect more revenue overall, specifically from business taxes, as expected. Somewhat surprisingly, provincial wealth is associated with lower tax collection. These results hold using different specifications of wealth and also in the democratic years sample. Importantly, the wealthiest provinces are not necessarily the most productive. The wealthy provinces in Argentina (measured as an index of relative GPP per capita) are mostly those with sparse populations and access to non-tax resources, such as oil or mineral wealth.<sup>15</sup>

The consistent empirical results presented in Table 2 suggest the revenue effects of political delegation, in this case increasing taxation in Argentina's provinces under national autocracy. The causality in that argument is also buttressed by the results for the control variables. The finding that national transfers are associated with large reductions in tax collection strongly supports the assertion that existence of viable alternative resources dulls tax effort. This dampening effect was considerably stronger under democracy than under dictatorship. The personnel spending variable also suggests this mechanism. Autocrats largely drive the positive effect of the personnel spending on tax collection in the full sample (M1), because they appear to use this resource for bureaucratic

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15 A notable exception is the Federal Capital of Buenos Aires, which is wealthy, productive, and taxes at a very high level relative to other provinces. However, the capital is excluded from the sample because it was not an independent province until 1993.

purposes (as opposed to political patronage) more than their democratic counterparts. Figure 1A shows the effect of personnel spending across regime types. Personnel spending does not significantly increase tax collection in democratic years, as shown both in the overlap of the democratic years range with zero, and in the null findings for personnel spending in Table 3.

## Sub-national Results

The growing literature on sub-national autocrat leaders raises some interesting questions about the nature of these leaders, such as whether they are similar to national autocrats or fundamentally different because they exist within a national infrastructure of democratic politics. The results below show some similarities to autocratic regimes in the way they tax, especially the extraction from the business sector, but notable convergence with democrats overall. Autocrat governors are generally worse at taxing than the governors who face competitive political competition. However, the impact of regime type on taxation is conditional on the level of national resources attracted to the province. An important difference between sub-national regimes, as shown below, is not in the quality of their policy implementation, as may be argued for the national results shown above. Elected governors' motivations are largely the same – that is, to avoid tax collection – but their constituencies appear to differ, in that sub-national autocrats tax primarily from their loyal business sector.

Autocratic governors collect lower tax revenue, as a percentage of GPP, than democratic governors. These results, shown in Table 3, M5, are statistically insignificant and substantively small (.02 percent higher tax collection in competitive provinces). These findings, combined with the national results above, suggest a convergence of incentives across competitive and non-competitive political regimes in electoral democracy; both types of politicians wish to avoid taxation, which is both politically costly and somewhat avoidable given national transfers.

Table 3: Effects of Sub-national Regime Type on Provincial Tax Collection, 1983–2001

Variables	M5	M6	M7	M8
(PCSE with AR(1) Process)	Total Tax Revenue, % of GPP	Total Tax Revenue, % of GPP	Business Tax Revenue, % of GPP	Business Tax/Total Tax Revenue
<i>Sub-national Regime Type</i>				
Sub-national Competitiveness	-0.016	0.478**	0.419***	0.013*
	(0.049)	(0.232)	(0.154)	(0.008)
Sub-national Regime*Transfers		-0.651**	-0.539***	
		(0.264)	(0.187)	
<i>Political Controls</i>				
Same-Party President	0.011	0.001	-0.011	0.002
	(0.042)	(0.043)	(0.026)	(0.009)
Personnel Spending (log)	-0.167	-0.17	-0.011	0.073**
	(0.175)	(0.173)	(0.084)	(0.030)
<i>Economic Controls</i>				
Provincial Wealth*	-1.554***	-1.584***	-0.855***	-0.011
	(0.324)	(0.320)	(0.174)	(0.021)
Inflation (log)	0.166	0.17	-0.133***	0.003
	(0.450)	(0.440)	(0.008)	(0.003)
Transfers	-2.610***	-2.619***	-1.164***	0.084
	(0.454)	(0.444)	(0.269)	(0.064)
Population (log)	0.320***	0.324***	0.148***	0.073**
	(0.088)	(0.088)	(0.047)	(0.030)
<i>Adjusted R2</i>	0.619	0.629	0.553	0.524
<i>Observations (No. of Provinces)</i>	330 (22)	330 (22)	330 (22)	330 (22)
<i>Province Fixed Effects</i>	No	No	No	No
<i>Year Fixed Effects</i>	Yes	Yes	Yes	No
$\chi^2, F (Prob > F)$	79.712 (0.00)	96.106 (0.00)	86.751 (0.00)	48.955 (0.00)

Note: Standard errors in parentheses. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1. All summary statistics shown in the appendix, Table 1A. \* M8 includes gross provincial product (logged) on the right-hand side because of the change in the denominator of the dependent variable. No significant year effects are present in the business tax/total tax model.

Source: Author's own calculation and compilation.

Models M6 and M7 in Table 3 tell a different story about the relationship between sub-national regime type, transfers, and tax revenue. When the

interactive relationship between regime type and central transfers is included, the effect of both sub-national regime type and the interaction term are statistically significant. These results suggest that autocrat provinces are only worse at taxing when they gain high levels of resources from the national government. When autocrat governors receive relatively little money from the national government, they actually outperform their counterparts in competitive provinces.

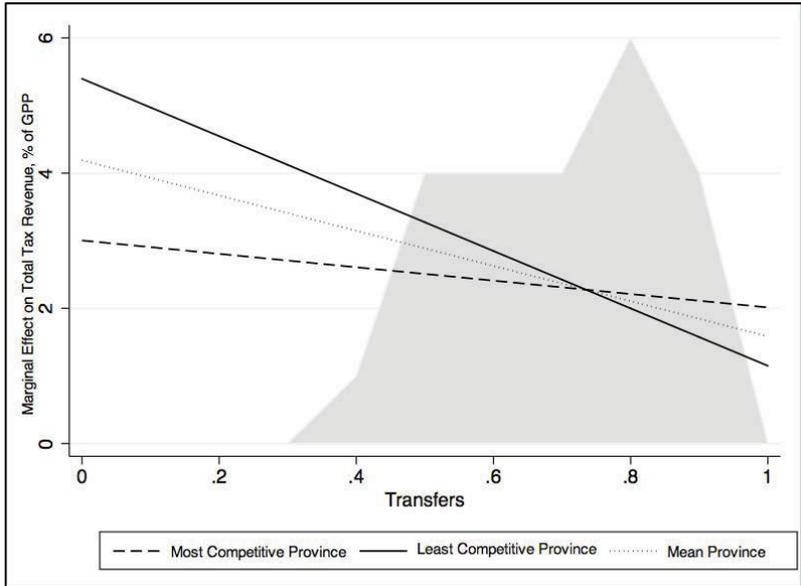
The interactive results, shown in Figure 1 below, reveal that sub-national autocrats' taxation is particularly sensitive to infusion of national transfers. Figure 1 presents the marginal effect of sub-national political competitiveness at all levels of central transfers on total tax collection.<sup>16</sup> The three lines represent the least competitive (solid line), mean (dotted line) and most competitive (dashed line) values of sub-national competitiveness. The shaded area shows the distribution of the transfers data, calculated as a count of provinces at their means. Figure 1 shows that sub-national closed regimes outperform all other politicians at relatively low values of central transfers, with up to sixty-five percent of provincial revenue coming from the national government. At the mean level of transfers, seventy-two percent, competitive provinces (both the mean and most competitive provinces) collect more than sub-national autocrats.

Figure 1 shows not only shows the interactive relationship between career paths and alternative resources on tax collection, but may also point to the important features of Argentine federalism that influence these arrangements. The very high value of revenue in the provinces from transfers indicates that provincial funding is strongly influenced by the political processes of national bargaining between governors and presidents, governors and legislators, and legislators and presidents. Malapportionment in the national legislature strengthens the hands of politicians in less populated provinces – which are commonly ruled by sub-national autocrats – to extract resources that dampen tax collection. Thus, provincial tax collection is set within a complex political game whereby elections adjudicate power relations and shape incentives that determine resource allocation across politicians.

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16 The marginal effect values, shown on the  $y$  axis, should be interpreted as reflecting the effects of central transfers at the specified values of sub-national competitiveness. Because the substantive effect of central transfers is large, the coefficients are large.

Figure 1: Marginal Effect of Sub-national Regime, by Level of Central Transfers



Note: The shaded area represents a count of provinces at their mean value of central transfers, rounded to the nearest one-tenth. \*All marginal effects calculated using Table 3, M6 with control variables set at their mean value.

Source: Author's own compilation.

The results of the economic controls are similar to the national sample. The impact of national resources is even larger and substantively more important than it is in the national sample. This effect is not only empirically important but also theoretically important, especially considering that electorally uncompetitive provinces disproportionately attract national transfers and that these resources may have a different effect in autocratic provinces than democratic ones. Personnel spending, which improved tax collection for autocrats in the national model, has no effect (or a negative effect) in the democratic sample. Contrary to evidence showing that presidential co-partisan provinces reduce government spending, there is no statistical relationship to taxation.

Perhaps most interestingly, the results of M7 and M8 for the business tax show how closed provinces can outperform competitive provinces. Governors in closed electoral regimes tax the business sector much more effectively than democrats, when the effect of the interaction between national resources and regime type is included. They also draw

revenue disproportionately from business, regardless of the level of central transfers, as shown in M8's dependent variable – business taxes as a percent of total tax revenue.<sup>17</sup> The differences in results for the business tax (by far the most lucrative tax) largely explain the total tax collection results. National autocrats and governors in closed electoral regimes are both better at taxing business than their democratic counterparts. The business sector is highly dependent on autocratic governors and, like the governors themselves, reliant on national resources (Guiñazú 2003; Behrend 2011). When national resources dry up, autocrats turn to the business sector they disproportionately control. They are able to rely on this sector because they can credibly commit to exchanging tax revenue for tangible goods over time because of infrequent turnover (Timmons 2010).

These results do not provide definitive evidence of the strong ties between business groups and autocrats in closed provincial regimes. However, they do suggest a closer linkage than that found in more competitive regimes. Higher tax collection implies higher state–society interaction with and enforcement of business debts in closed provinces. Because provincial government and business interests are closely intertwined, often involving the same individuals and families, the resources of the state are in many ways inseparable from the profits of companies. The positive relationship between personnel spending and business tax collection as a percentage of total tax collection, shown in M8, further suggests the constituency base of closed provinces. Personnel spending does not have a significant positive effect on the collection of any other tax type in national democracy, nor does it predict any measure of the level of taxation relative to GPP. These results may point to a cooperative coalition of state bureaucrats and dependent business sectors in closed provinces in Argentina (Behrend 2011).

The simultaneous influence of national transfers and sub-national regime type on tax collection in Argentina's provinces raises questions regarding the generalizability of the above findings. The effect of sub-national regime type on tax collection may not follow the same causal mechanism in more balanced federal systems, where local tax collection is a larger source of provincial revenues. However, several factors sug-

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17 The predicted collection of total tax revenue from business taxes varies predictably with the value of sub-national competitiveness. At high levels of competitiveness, provinces collect approximately fifty-seven percent of their tax revenue from business. In the least competitive provinces, this percentage increases to sixty-four percent. These predicted values are graphed in appendix Figure 2A.

gest that these results may be relevant to other developing countries. First, from a comparative perspective, the vertical fiscal imbalance in the Argentine case may be typical of (or lower than) many developing countries. In Diaz-Cayeros' (2006) study of fiscal institutions, for example, Argentina's provincial collection was shown to be at the high end of Latin America's federal systems. If Argentina's transfer levels are comparable to those of other developing countries, it is likely that we will see similar dampening effects on sub-national tax revenue by elected officials. To verify these differences, an interesting comparison would be with Brazil, which collects its most lucrative tax, the value-added tax, at the state level. Of related concern is the role of the political system of Argentina, with strong malapportionment that allocates more resources to sub-national autocrats and local electoral incentives that lead national legislators to defer to governors. This theoretical motivation would also be best examined in a comparative context; again, however, the level of malapportionment in Argentina and local electoral incentives have close, if not exact, analogues in other developing countries, including in Latin America.

The second concern regards the generalizability of the constituency effects in sub-national autocracy in Argentina. Do closed regimes in Mexico, Brazil, Russia, and elsewhere have similar ties to local business leaders and state bureaucrats as those in Argentina? Although research on sub-national autocracy has largely been restricted to case studies rather than cross-national comparison, certain characteristics consistent with the Argentina cases seem to hold. Sub-national autocracies in the Mexican case are also more likely in less populated jurisdictions with narrow economic bases (Gibson 2011). The same characterization appears apt for Brazil (Montero 2007) and India (Beer and Mitchell 2006). Accordingly, the constituencies look similar across sub-national autocratic cases, which should limit economic opportunities for business elites to the state and favor the dependence of the tax base to business constituents. Again, however, this finding merits further investigation in comparative perspective.

## Conclusion

This study contributes to the comparative politics of regime type, taxation and federalism in several ways. Previous scholarship on the link between regime type and state capacity (including taxation) has emphasized regime-specific strengths but has looked for the effects in broad policy outputs and outcomes. Contradictory theory and relatively weak

cross-national results may suggest that regime type is not important in tax collection or, more likely, that the ways that regime type matter have not been fully specified in theory or measurement. Simply arguing that more or less taxation would result cancels out the effects of incentives to develop capacity that may be regime-specific, and also allows for considerable confounding effects of economic growth, choices of taxation rates and types, and economic ideology. The way that regimes matter may be more subtle, which is most clearly apparent in finer-grained analysis of different types, locations, and constituency effects of taxes.

Regime type interacts with federalism in a manner that can be exploited by scholars of comparative politics. From a research design perspective, federalism offers the possibility of examining a country across both time and jurisdictions. From a theoretical perspective, regime types highlight the importance of federal institutions, especially sub-national elections, revenue sharing, decentralized party systems, and political career paths (Gibson and Suárez-Cao 2010). Political federalism in Argentina, as in all federal nations, fundamentally shapes the incentives of politicians. In the Argentine case (and, I suspect, in many other federal cases as well), these institutions dampen incentives to develop provincial capacity, including tax capacity.<sup>18</sup> National transfers also act as a common pool resource that all actors have incentive to pursue and very few try to curtail. This effect appears worse under national democracy, at least in the Argentine case, because transfers were more generous and stable (Díaz-Cayeros 2006). Future work should examine the role that political parties and national executives play in these incentives. In the Argentine case, political parties may exacerbate these issues because of comparative advantage in clientelism in the weaker provinces. National presidents appear to prefer more effective, economically efficient provincial tax collection, and many have tried to reform these fiscal systems. However, their ability to do so is limited by presidents' own career concerns (Rogers 2013).

A central concern in the development of tax capacity is that it conflicts with national politics. In Latin America, fiscal centralization is a choice that national politicians make to improve the governability of the nation by centralizing the resources that can be used when building a national coalition (Díaz-Cayeros 2006). Accordingly, it may not be surprising to see lower taxation during democratic years because military governments rule more by the stick than the carrot. The comparison of

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18 This has been shown in other federal systems, including Russia, for example (Treisman 2006). Treisman emphasized the crucial role of the national government in encouraging tax efforts.

competitive and closed political systems under national democracy helps to tease out substantive differences between national autocrats and governors in uncompetitive electoral regimes and the role of elections overall. In Argentina, the overall effect of democratic elections on taxation is to impede tax capacity because of career concerns and national transfers. Moreover, it is closed politics that benefits the national ruling party in terms of forming a stable alliance. Sub-national autocrats are distinct from their national autocratic counterparts, both in theory and in empirics, because they fit firmly within the electoral game and coalition politics.

One potential implication of this article is that sub-national autocrats, like their colleagues in the OECD countries (Timmons 2010) and in Africa (Kasara 2007), tax their loyal members more than their opponents. These complementary findings in diverse settings suggest there may be a broader maxim at work; specifically, that loyalists not only get the spoils but also bear the costs of government in many nations. This seems intuitive, particularly in less institutionalized settings where tax collection is more administratively challenging and less uniformly collected, and where societal norms do not assume tax compliance. In combination with scholarship on other nations, this finding suggests some revision of common expectations of winners and losers from government.

This work is only an initial attempt at linking sub-national regime type to policy outputs. Although the extant literature includes valuable work that helps explain how sub-national autocracies emerge (Gervasoni 2010b), persist (Behrend 2011) and end (Giraudy 2010; Gibson 2005), further investigation should be conducted on how these autocracies affect policymaking and policy outcomes, and how they influence the operation of national political institutions. Elections can create conflicting incentives for politicians to improve tax capacity and impose unpopular taxation. Further research could specify what conditions would drive democratic politicians to tax more effectively. The fact that autocratic governors are taxing business at higher levels suggests they might be delivering high-quality service (or blackmail) to that constituency. Surely, voters who reward politicians for quality governance, including good service delivery, and effective, rational taxation would incentivize that behavior.<sup>19</sup> Findings in the Argentine case that voters reward governors who bring home transfers but not those who perform well economically

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19 Politicians may not have incentive to invest in tax capacity but they might want to improve governance by resisting clientelism that is punished by middle-class voters (Weitz-Shapiro 2012).

suggest that elections are not having this effect in the provinces (Remmer and Gélinau 2003). Some provinces tax relatively well and voters appear to judge politicians more on their performance than the transfers they bring. Determining the drivers of these provinces' incentives may help us to understand when or how the other provinces might follow.

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# Appendix

Table 1A: Description of Variables

Variable	Definition	N	Mean	SD	Min	Max	Source
<i>Dependent Variables</i>							
Total Tax Revenue	Total Tax Revenue / Gross Provincial Product	943	1.78	0.98	0.09	6.33	Porto (1990)
Business Tax Revenue	Business Tax Revenue / Gross Provincial Product	943	0.88	0.14	0	3.46	Porto (1990)
Business Tax, % of Total	Business Tax Revenue / Total Tax Revenue	943	0.47	0.17	0	0.98	Porto (1990)
Real Estate Tax Revenue	Real Estate Tax Revenue / Gross Provincial Product	943	0.27	0.24	0	1.33	Porto (1990)
<i>Regime Type Variables</i>							
Authoritarian Year	1 if year of national autocratic regime, 0 if democratic	943	0.37	0.48	0	1	+
Sub-national Regime Type	Index of sub-national political competition	330	-0.02	0.91	-2.54	2.61	Gervasoni (2010a)
<i>Political Variables</i>							
Same Party President	Provincial governor and president are co-partisans	330	0.26	0.44	0	1	Author coded
Personnel Spending	Logged value of per capita expenditure on provincial personnel	943	5.84	0.70	3.86	7.78	Porto (1990)
<i>Economic Variables</i>							
Regime Transition	1 if year of regime transition; 0 if no transition	943	0.09	0.29	0	1	Author coded based on +
Provincial Wealth	0-1 index of relative gross provincial product	943	0.24	0.27	0	1	Calculation based on *

Variable	Definition	N	Mean	SD	Min	Max	Source
Inflation	Logged value of national inflation	943	3.52	2.21	0	8.03	WDI
Population	Logged value of provincial population	943	13.08	1.19	9.29	16.44	INDEC
Transfers	Central Transfers / Total Provincial Revenue	943	0.70	0.16	0.13	0.98	Calculated based on *

Note: + = Przeworski et al. (2000), \* = Porto (1990), WDI = World Development Indicators.

Source: Author's own compilation.

Table 2A: National Models with No Time Effects, Personnel Spending Interaction

Variables	M1A	M2A	M3A	M4A	M5A
(PCSE with AR(1) Process)	Total Tax Revenue, % of GPP	Total Tax Revenue, % of GPP	Business Tax Revenue, % of GPP	Business Tax Revenue, % of GPP	Total Tax Revenue, % of GPP
<i>Regime Type</i>					
Autocratic Years	0.310** (0.126)	0.299** (0.138)	0.138** (0.070)	0.177** (0.087)	1.369* (0.737)
Autocrat Years+ Personnel Spending					0.291** (0.128)
<i>Political Controls</i>					
Regime Transition	-0.243** (0.101)	-0.230** (0.101)	-0.065 (0.054)	-0.078 (0.064)	-0.255** (0.099)
Personnel Spending (log)	0.506*** (0.134)	0.497*** (0.113)	0.141* (0.074)	0.360*** (0.070)	-0.615** (0.202)
<i>Economic Controls</i>					
Provincial Wealth	-0.966*** (0.277)	-0.512** (0.219)	-0.487*** (0.155)	-0.220* (0.131)	-1.160*** (0.026)
Inflation (log)	-0.158*** (0.025)	-0.163*** (0.028)	-0.092*** (0.014)	-0.090*** (0.017)	-1.197*** (0.227)
Transfers	-1.015*** (0.245)	-1.096*** (0.229)	-0.391*** (0.134)	-0.483*** (0.143)	.347*** (0.050)
Population (log)	0.673** (0.277)	0.423*** (0.056)	1.142*** (0.157)	0.217*** (0.030)	.541** (0.158)
Constant	-9.618** (4.098)	-5.307*** (1.232)	-17.428*** (2.336)	-3.433*** (0.740)	-4.520*** (1.293)
<i>R-squared</i>	0.542	0.384	0.538	0.33	0.4188
<i>Observations (No. of Provinces)</i>	943 (23)	943 (23)	943 (23)	943 (23)	943 (23)
<i>Province Fixed Effects</i>	No	Yes	No	No	No
<i>Year Fixed Effects</i>	No	No	No	No	Yes*
$\chi^2$ , F [Prob > F]	920.764 (0.00)	167.63 (0.00)	381.429 (0.00)	138.473 (0.00)	227.19 (0.00)

Note: Standard errors in parentheses. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1. + M5A includes a time trend to substitute for year effects. Year dummies make the interaction effect difficult to estimate.

Source: Author's own calculation and compilation.

Table 3A: National Results with Polity Variable

Variables	M6A	M7A	M8A	M9A
(PCSE with AR(1) Process)	Total Tax Revenue, % of GPP	Total Tax Revenue, % of GPP	Business Tax Revenue, % of GPP	Business Tax Revenue, % of GPP
<i>Regime Type</i>				
Polity Score+	-0.018** (0.008)	-0.019*** (0.007)	-0.011** (0.005)	-0.009** (0.004)
<i>Political Controls</i>				
Regime Transition	-0.06 (0.073)	-0.067 (0.079)	0.023 (0.047)	0.014 (0.041)
Personnel Spending (log)	0.549*** (0.117)	0.580*** (0.136)	0.397*** (0.072)	0.173** (0.075)
<i>Economic Controls</i>				
Provincial Wealth	-0.474** (0.220)	-0.925*** (0.274)	-0.212 (0.130)	-0.444*** (0.155)
Inflation (log)	-0.162*** (0.027)	-0.154*** (0.024)	-0.089*** (0.017)	-0.090*** (0.014)
Transfers	-1.164*** (0.228)	-1.112*** (0.245)	-0.527*** (0.142)	-0.437*** (0.133)
Population (log)	0.440*** (0.057)	0.690** (0.269)	0.226*** (0.030)	1.151*** (0.156)
Constant	-5.697*** (1.253)	-10.142** (3.991)	-3.678*** (0.745)	-17.691*** (2.331)
<i>R-squared</i>	0.384	0.55	0.335	0.537
<i>Observations (No. of Provinces)</i>	943 (23)	943 (23)	943 (23)	943 (23)
<i>Province Fixed Effects</i>	No	Yes	No	Yes
<i>Year Fixed Effects</i>	No	No	No	No
$\chi^2$ , F [Prob > F]	172.528 (0.00)	933.083 (0.00)	147.286 (0.00)	390.003 (0.00)

Note: Standard errors in parentheses. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1. + The sign on coefficient should be the opposite of the autocratic years because the polity value is higher with more democracy.

Source: Author's own calculation and compilation.

Table 4A: National Results, Per Capita Tax Revenue

Variables	M10A	M11A	M12A	M13A
(PCSE with AR(1) Process)	Total Tax Revenue, Per Capita	Total Tax Revenue, Per Capita	Business Tax Revenue, Per Capita	Business Tax Revenue, Per Capita
<i>Regime Type</i>				
Autocratic Years	23.341** (10.121)	22.799** (10.356)	12.889** (5.923)	10.481* (5.447)
<i>Political Controls</i>				
Regime Transition	-14.807** (7.336)	-15.665** (7.678)	-4.94 (4.343)	-4.685 (3.906)
Personnel Spending (log)	45.293*** (10.100)	32.152*** (11.797)	31.561*** (5.900)	6.079 (6.266)
<i>Economic Controls</i>				
Gross Provincial Product+ (log)	70.948*** (15.995)	29.109 (21.376)	45.344*** (9.670)	13.078 (12.465)
Inflation (log)	-11.403*** (2.000)	-11.137*** (2.048)	-6.457*** (1.174)	-6.718*** (1.085)
Transfers	-84.226*** (28.530)	-75.509*** (28.606)	-42.539** (17.433)	-34.132** (15.497)
Population (log)	-50.485*** (19.093)	80.182* (47.795)	-36.781*** (11.571)	113.474*** (28.097)
Constant	-227.974 (141.711)	-1,649.416*** (580.184)	-126.417 (82.097)	-1,946.174*** (347.026)
<i>R-squared</i>	0.317	0.415	0.319	0.414
<i>Observations (No. of Provinces)</i>	943 (23)	943 (23)	943 (23)	943 (23)
<i>Province Fixed Effects</i>	No	Yes	No	Yes
<i>Year Fixed Effects</i>	No	No	No	No
$\chi^2$ , F [Prob > F]	184.951 (0.00)	583.852 (0.00)	179.824 (0.00)	361.644 (0.00)

Note: Standard errors in parentheses. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1. + Gross provincial product is an independent variable in these models to account for level of economic productivity. In other models, gross provincial product is the denominator of the dependent variables.

Source: Author's own calculation and compilation.

Table 5A: National Real Estate Tax Results

Variables	M14A	M15A	M16A	M17A
(PCSE with AR(1) Process)	Real Estate Tax Revenue, % of GPP			
<i>Regime Type</i>				
Autocratic Years	0.050*** (0.008)	0.214*** (0.013)	0.076*** (0.028)	0.083*** (0.027)
<i>Political Controls</i>				
Regime Transition	-0.075*** (0.013)	-0.195*** (0.005)	-0.078*** (0.021)	-0.082*** (0.021)
Personnel Spending (log)	-0.006 (0.026)	0.052* (0.027)	0.063*** (0.023)	0.127*** (0.030)
<i>Economic Controls</i>				
Provincial Wealth	-0.167*** (0.041)	-0.267*** (0.048)	-0.133*** (0.046)	-0.186*** (0.060)
Inflation (log)	-0.012* (0.007)	0.022** (0.009)	-0.013** (0.006)	-0.013** (0.005)
Transfers	-0.270*** (0.044)	-0.234*** (0.044)	-0.292*** (0.048)	-0.286*** (0.051)
Population (log)	0.079*** (0.017)	-0.335*** (0.071)	0.098*** (0.016)	-0.105* (0.054)
Constant	-0.503* (0.275)	5.670*** (1.073)	-1.121*** (0.277)	1.798** (0.785)
<i>R-squared</i>	0.332	0.514	0.216	0.407
<i>Observations (No. of Provinces)</i>	943 (23)	943 (23)	943 (23)	943 (23)
<i>Province Fixed Effects</i>	No	Yes	No	Yes
<i>Year Fixed Effects</i>	Yes	Yes	No	No
$\chi^2$ , F [Prob > F]	106.42 (0.00)	466.802 (0.00)	115.959 (0.00)	301.43 (0.00)

Note: Standard errors in parentheses. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1.

Source: Author's own calculation and compilation.

Table 6A: Sub-national Results with Province Fixed Effects

Variables	M18A	M19A	M20A
(PCSE with AR(1) Process)	Total Tax Revenue, % of GPP	Total Tax Revenue, % of GPP	Business Tax Revenue, % of GPP
<i>Sub-national Regime Type</i>			
Sub-national Competitiveness	-0.004 (0.047)	0.513** (0.214)	0.412*** (0.152)
Sub-national Regime* Transfers		-0.694*** (0.245)	-0.526*** (0.188)
<i>Political Controls</i>			
Same Party President	0.017 (0.037)	0.002 (0.038)	-0.019 (0.025)
Personnel Spending (log)	0.208 (0.142)	0.212 (0.138)	0.071 (0.079)
<i>Economic Controls</i>			
Provincial Wealth	-0.618** (0.314)	-0.664** (0.307)	-0.500*** (0.180)
Inflation (log)	9.359** (3.738)	-0.188*** (0.026)	2.547 (2.357)
Transfers	-2.713*** (0.424)	-2.755*** (0.414)	-1.146*** (0.279)
Population (log)	-2.571** (1.113)	-2.666** (1.046)	-0.649 (0.702)
<i>R-squared</i>	0.827	0.836	0.7
<i>Observations (No. of Provinces)</i>	330 (22)	330 (22)	330 (22)
<i>Province Fixed Effects</i>	Yes	Yes	Yes
<i>Year Fixed Effects</i>	Yes	Yes	Yes
$\chi^2, F [Prob > F]$	2125.837 (0.00)	11157.7 (0.00)	549.834 (0.00)

Note: Standard errors in parentheses. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1.

Source: Author's own calculation and compilation.

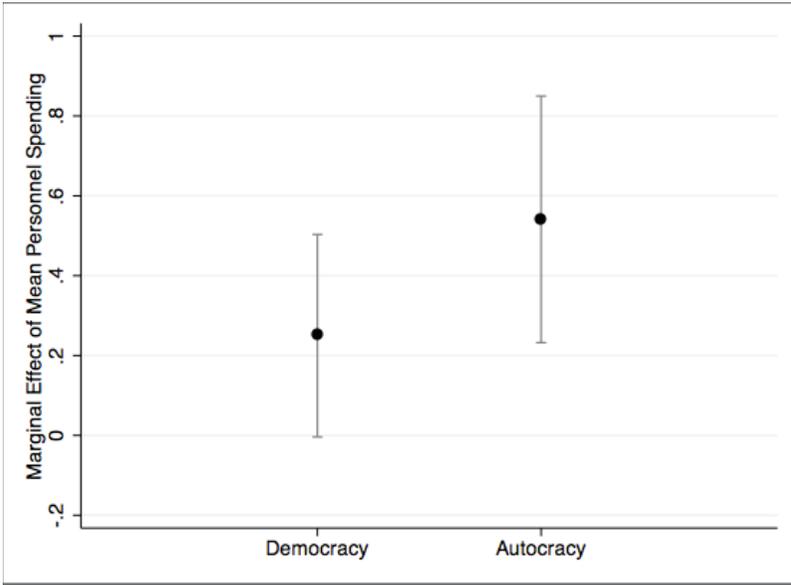
Table 7A: Sub-national Results, Per Capita Tax Collection

Variables	M21A	M22A	M23A
(PCSE with AR(1) Process)	Total Tax Revenue, % of GPP	Total Tax Revenue, % of GPP	Business Tax Revenue, % of GPP
<i>Sub-national Regime Type</i>			
Sub-national Competitiveness	0.589 (2.510)	44.897*** (15.978)	35.163*** (11.589)
Sub-national Regime* Transfers		-58.183*** (18.859)	-44.017*** (14.129)
<i>Political Controls</i>			
Same Party President	-4.264 (3.870)	-5.201 (3.885)	-2.145 (2.475)
Personnel Spending (log)	18.009 (13.537)	20.028 (13.193)	17.835** (7.460)
<i>Economic Controls</i>			
Gross Provincial Product (log)	82.043*** (13.558)	80.563*** (13.346)	49.068*** (7.832)
Inflation (log)	-8.231*** (1.687)	-7.900*** (1.643)	-4.555*** (0.910)
Transfers	-158.772*** (41.357)	-161.099*** (39.504)	-99.099*** (27.909)
Population (log)	-56.460*** (13.315)	-53.936*** (12.952)	-39.772*** (7.519)
Constant	-62.477 (174.633)	-87.642 (169.241)	0.974 (90.474)
<i>R-squared</i>	0.599	0.614	0.605
<i>Observations (No. of Provinces)</i>	330 (22)	330 (22)	330 (22)
<i>Province Fixed Effects</i>	Yes	Yes	Yes
<i>Year Fixed Effects</i>	No	No	No
$\chi^2, F [Prob > F]$	145.112 (0.00)	156.024 (0.00)	169.962 (0.00)

Note: Standard errors in parentheses. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1.

Source: Author's own calculation and compilation.

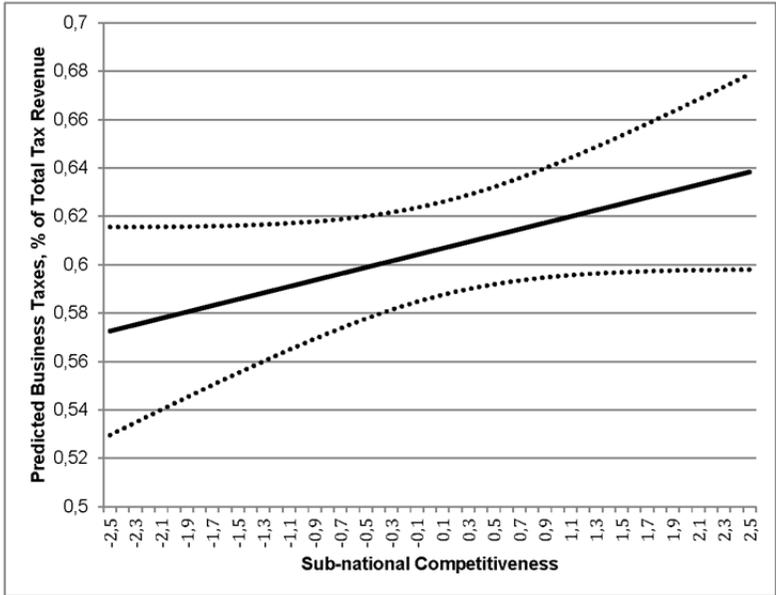
Figure 1A: Marginal Effect of Personnel Spending on Total Provincial Tax Collection



Note: \* All control variables set at mean value. Figure is graphed based on statistical results in Table 2A, Model M5A.

Source: Author's own graph.

Figure 2A: Predicted Business Tax/Total Tax Collection, by Sub-national Competitiveness



Note: \* All control variables set at mean value. Figure is graphed based on Table 3, M8.

Source: Author's own graph.

## **Recaudar Impuestos con dictadores y demócratas: Efectos del Régimen, las transferencias y los ingresos en las provincias de la Argentina**

**Resumen:** Las instituciones políticas influyen fuertemente en cuanto a incentivos a los impuestos. En este artículo, examino las diferencias entre los regímenes nacionales de tributación provincial en Argentina entre 1959–2001 y los comparo con los regímenes sub-nacionales bajo la democracia nacional. Sostengo que las elecciones determinan fundamentalmente la tributación al guiar los incentivos de carrera de los líderes provinciales. En tiempos autocráticos, los líderes sub-nacionales tienen una fuerte motivación para recaudar impuestos porque responden a líderes nacionales que recompensan la extracción. Los autócratas nacionales graban a niveles superiores, usando impuestos más difíciles. Bajo regímenes democráticos, los gobernadores son evaluados por su electorado local y utilizan recursos políticos para evitar imponer impuestos. Gobernadores de regímenes electorales cerrados generalmente recogen menos ingresos fiscales que gobernadores de provincias competitivas, pero este efecto se encuentra altamente condicionado por la formación de coaliciones nacionales y el acceso privilegiado a recursos nacionales. Una diferencia importante a nivel de los regímenes sub-nacionales es la incidencia – provincias cerradas extraen de forma desproporcionada del sector empresarial dependiente.

**Palabras clave:** Argentina, democracia, autocracia, impuestos, federalismo fiscal