

The Tax-Corruption Trade-Off?

Evidence from Philippine Local Government Audit Reports

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Abstract

Competitive elections supposedly discourage politicians from taxing constituents, while incentivizing them to provide more accountable governance. Together, such electoral incentives suggest that the vaunted “tax-accountability relationship” of the state-building literature could instead take the form of a “tax-corruption trade-off” in developing democracies. To test this proposition, I build a novel dataset of 17,392 annual audit reports of Philippine local governments and develop a new measure of corruption based on topic modeling. However, a panel-matching differences-in-differences design yields mixed findings for my “trade-off” hypothesis: while close-election races demonstrably decrease per capita corruption levels, they have a statistically-insignificant effect on per capita real property tax collections. Should these results prove robust to other approaches, then they attest to the importance of reassessing scholarship on the electoral politics of taxation in developing countries.

To what extent is taxation linked to improved accountability in developing democracies?

According to touchstone works in the state-building literature (e.g. Levi 1988), increased government reliance on taxation should encourage the formation of accountability-enhancing “fiscal contracts,” by incentivizing rulers to furnish expanded accountability and representation in exchange for taxpayers’ “quasi-voluntary compliance.” Sparked by these seminal arguments, a wave of survey-experimental research in developing countries (e.g. de la Cuesta et al 2022) has provided some corroborating evidence for the view that increased taxation heightens citizens’ demands for accountability improvements in contemporary, subnational settings.

Yet this emerging literature has generally abstracted from how electoral competition could instead *attenuate* the scope of this vaunted tax-accountability relationship. Indeed, a range

of studies have documented how elections can separately influence local governments' levels of taxation and accountability, *yet in opposing directions*. Through political budget cycle dynamics, electoral competition presumably depresses fiscal consolidation efforts (Prichard 2016; Gaspar et al 2017); meanwhile, due to reelection incentives, it also presumably reduces corruption by incumbent politicians (Ferraz and Finan 2008). When taken together, both trends suggest that a "tax-corruption trade-off" could instead obtain with respect to competitive elections. Under conditions conducive to short-termism, increased electoral competition should serve to reduce *both* corruption as well as tax collections, effectively driving a wedge between fiscal consolidation and fiscal accountability in developing democracies.

To test this basic hypothesis, I leverage publicly-available audit reports for the universe of city and municipal governments in the Philippines from 2010 to 2020. Most importantly, these audit reports contain highly-detailed information related to local government's tax collections and corruption-related transactions. I use such data to develop an observational measure of corruption that is justified by topic modeling of the collected reports, which I then incorporate into a panel-matching research design to ascertain the causal effect of close-election races on fiscal consolidation and corruption among subnational governments. I yield mixed results from this exercise: while heightened competition reduces anomalous cash transactions, the effect on property tax collections remains statistically indistinguishable from zero. This gestures to the importance of revisiting work on the *electoral* politics of taxation among developing democracies.

Data, Topic Modeling, and Measurement

My project takes advantage of the public availability of annual audit reports for all city and municipal local governments in the Philippines from 2010 to 2020. Conducted annually by accredited auditors of the Philippines' Commission on Audit (COA), the documents typically feature itemized lists of irregular transactions by local governments and detailed breakdowns of their overall financial performance. The standardized format/procedures of these audit reports and the relative consistency of audit operations provides the modicum of comparability needed to generate an observational measure of corruption across local government units. On this basis, I collected a dataset of the executive summaries of these audit reports using web extension software, which yielded a total of 17,392 reports.

By leveraging such audit reports, I lay groundwork for advancing past work in political science that has been constrained to using perceptions-based (e.g. Transparency International) and survey-experimental measures (e.g. Malesky et al 2015) of corruption. The problem of biases in perceptions-based measures has already been well-documented (Treisman 2007), while survey-experimental measures are usually faced with external validity concerns. Moreover, though there have been studies by economists that have exploited the Brazilian federal government's use of randomized audits for corruption studies (e.g. Ferraz and Finan 2008), the same randomized treatment imposes limits to the questions that can be queried of such reports. By covering nearly the entire universe of Philippine local governments over a decade, the corpus that I collect allows me not only to undertake more powered tests, but also to address a wider range of descriptive and exploratory questions related to the dynamics and determinants of transparency, accountability, and state capacity development

in middle-income democracies.

3. **Inventory of Accountable forms of the Municipal Treasurer, Babatngon, Leyte revealed that there were blank checks on hand already countersigned but without any supporting documents to support them hence, casts doubt on the regularity of the disbursement process of the Local Government Unit and exposes government funds to possible loss and misuse.**

We recommend that the Local Chief Executive stop the practice of advance countersigning of checks without approved disbursement vouchers and supporting documents.

4. **Cash advance granted to Municipal Treasurer last May, 2015 amounting to ₱850,425.00 specifically for People's Week Celebration was not liquidated as soon as the purpose for which it was granted has been served because the money was transferred to other personnel of the agency.**

We recommend that the Municipal Treasurer strictly follow Section 4.1.6 of COA Circular No. 97-002 dated February 10, 1997 on the handling of Cash Advances.

Figure 1: Two Illustrative Irregularities for Babatngon, Leyte province, 2015

Reading through randomly-selected reports surfaced four general categories of irregularities that were regularly reported by auditors: (a) the granting of unliquidated cash advances; (b) the granting of undocumented, short-term jobs; (c) the misuse of public vehicles/fuel subsidies; (d) procurement-related anomalies, such as irregular bidding procedures. Figure 1 above provides some illustrative audit observations of these irregularities.

To establish the broader salience of these issues across all the audit reports, I ran exploratory Latent Dirichlet Allocation (LDA) topic models with varying k values ($k = 50, 30, 25, 20, 15$). For these LDA models, I pre-processed the remaining sections of the documents to eliminate numbers, punctuation marks, and English stopwords, as well as by stemming words.

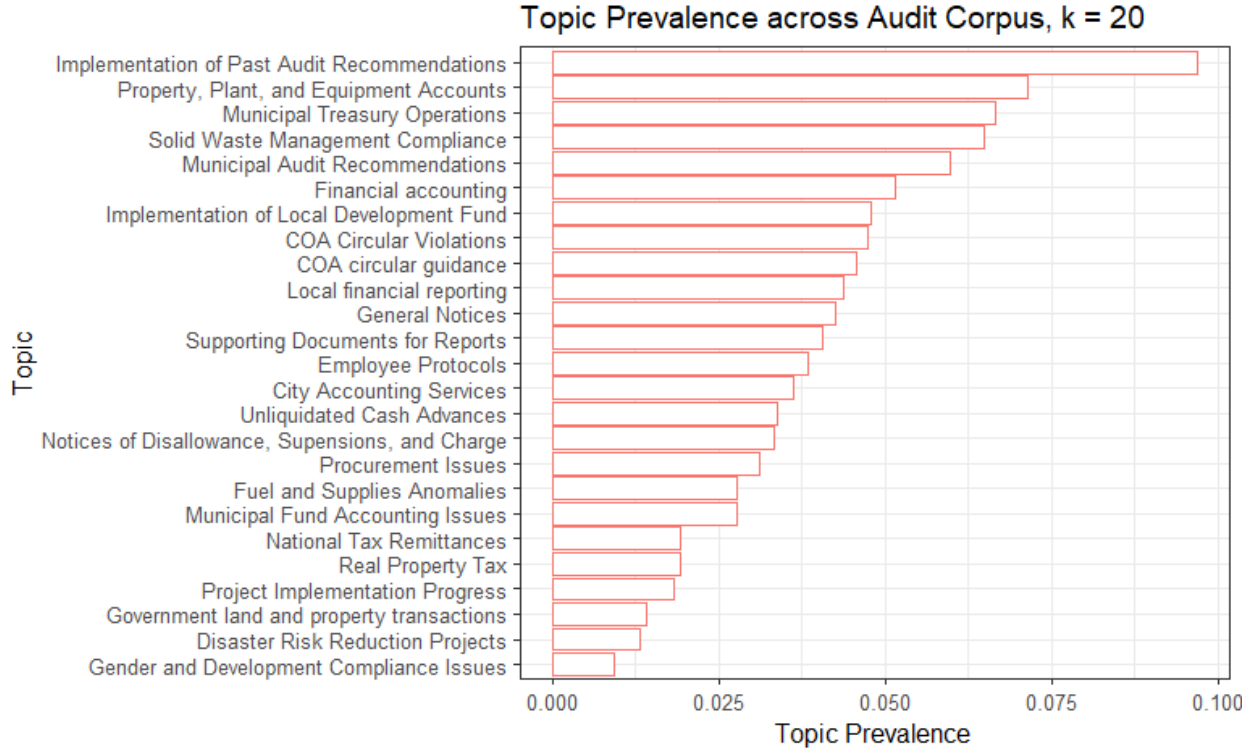


Figure 2: Topic Prevalence across Audit Corpus, $k = 25$

Generally, unliquidated cash advances emerged as corruption-related irregularity that was most often picked up, followed by procurement-related anomalies. I present in Figure 2 above the prevalence of the topics across the entire audit report corpus based on the θ matrix for $k = 25$. In this model, unliquidated cash advances, procurement, and fuel-related anomalies issues emerged as individual topics, with cash advances possessing the greatest prevalence.

Given these results, I focus on unliquidated cash advances to form my preliminary measure of corruption. Apart from the greater prevalence of such advances, anomalous cash transactions flagged by COA have the benefit of almost-always have a monetary value attached to them (as shown by Figure 1), which is not consistently the case for other corruption types. This allows me to compute a *per-capita* measure of anomalous transactions, by dividing the monetary value of all reported unliquidated cash transactions by the population of that local

government.

Beyond using this as my measure of corruption, I also extract real property tax collections from the financial statements sections of the audit reports as my measure of fiscal consolidation. Land and property assets constitute an immobile form of capital, which constrains property owners’ “exit” options; in turn, this makes their taxation among the most associated with subnational government-taxpayer fiscal bargaining (Prichard 2015). Combined with Election, Census, Poverty, and Political Dynasty data that I requested from the Philippines’ Commission on Elections, the Philippines Statistics Authority, and the Ateneo School of Government, I was able to construct a panel of all 1,634 cities and municipalities in the country for three mayoral terms: 2010-2013, 2013-2016, and 2016-2019.

Panel Matching: Design and Results

For testing my “tax-corruption trade-off” hypothesis, I apply the panel matching method developed Kim, Rauth, Wang, and Imai (2021), which uses a weighted differences-in-differences estimator. My data unfortunately does not allow me to confirm whether the parallel trends assumption holds before 2010, but this will be a focus of continuing work. More broadly, the credibility of my design hinges on the assumption that the occurrence of close-elections races can be regarded as an “as-if random” phenomenon, as has recently been done for election studies in the Philippines by Ravanilla et al (2022) for a linear difference-in-differences design. My treatment variable in this panel-matching design is the occurrence of a close-elections race, for which I adopt Ravanilla et al (2022)’s definition of entailing a mayor’s vote share margin over the closest candidate of less than five (5) percentage points. Given my focus on

close-election races as a treatment, I group the periods of my panel to coincide with 3-year mayoral terms (2010-2013, 2013-2016, and 2016-2019) and apply a lag window of 1 period. My two dependent variables are per capita real property collections and per capita unliquigated cash advances, while my balancing covariates include a city/municipality's poverty incidence, population size, literacy rate, as well as a dummy variable for whether the mayor was a member of a political dynasty. Existing literature suggests that all these variables are likely to affect the scope of state-taxpayer fiscal bargaining, through their effects on clientelist dynamics and institutional constraints on politicians.

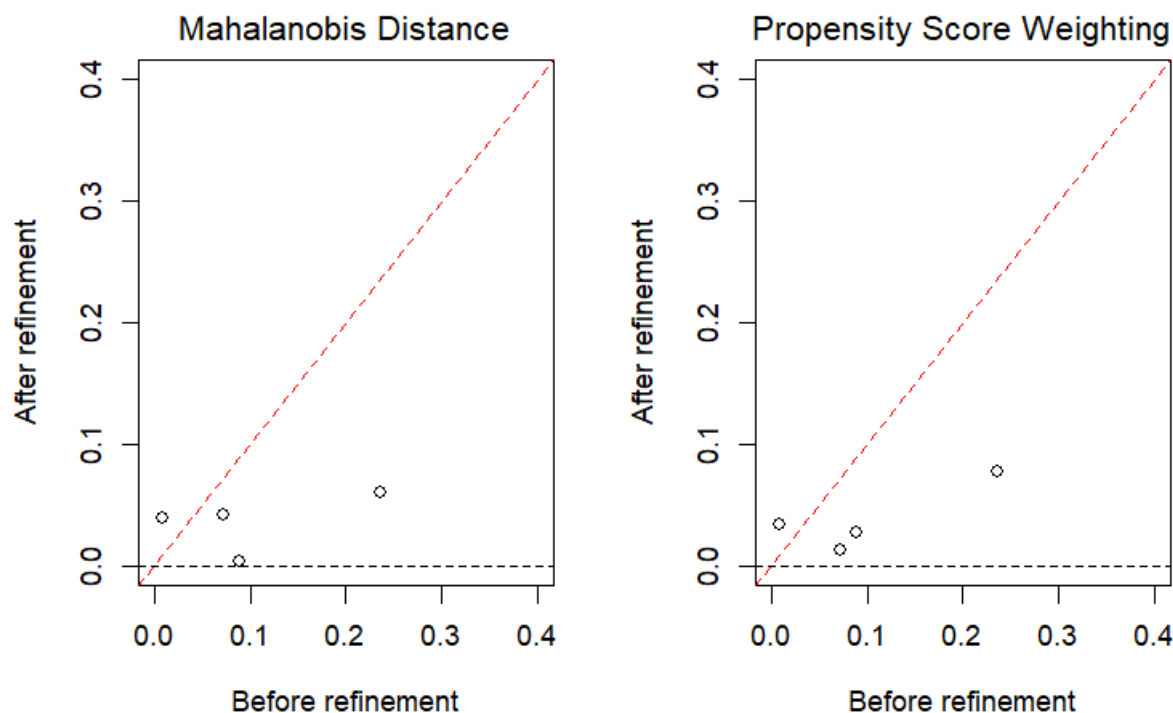


Figure 3: Balance Scatter Plots of Covariates

In Figure 3 above, I check the extent to which balance is improved for the four covariates in running the Panel Match estimator based on two refinement methods: Mahalanobis Distance and Propensity Score Weighting. I use both to examine whether my results are robust

to using either a distance-based or weighting-based refinement method. In the balance-scatterplots, balance is improved among our covariates to the extent that they lie below the red, dashed 45-degree line. As can be observed from the resulting balance scatterplots, covariate balance improved for three out of four variables and slightly worsened in one for both refinement methods. However, the last variable remains adjacent to the 45-degree line in both specifications, and quite low with respect to its standardized mean values.

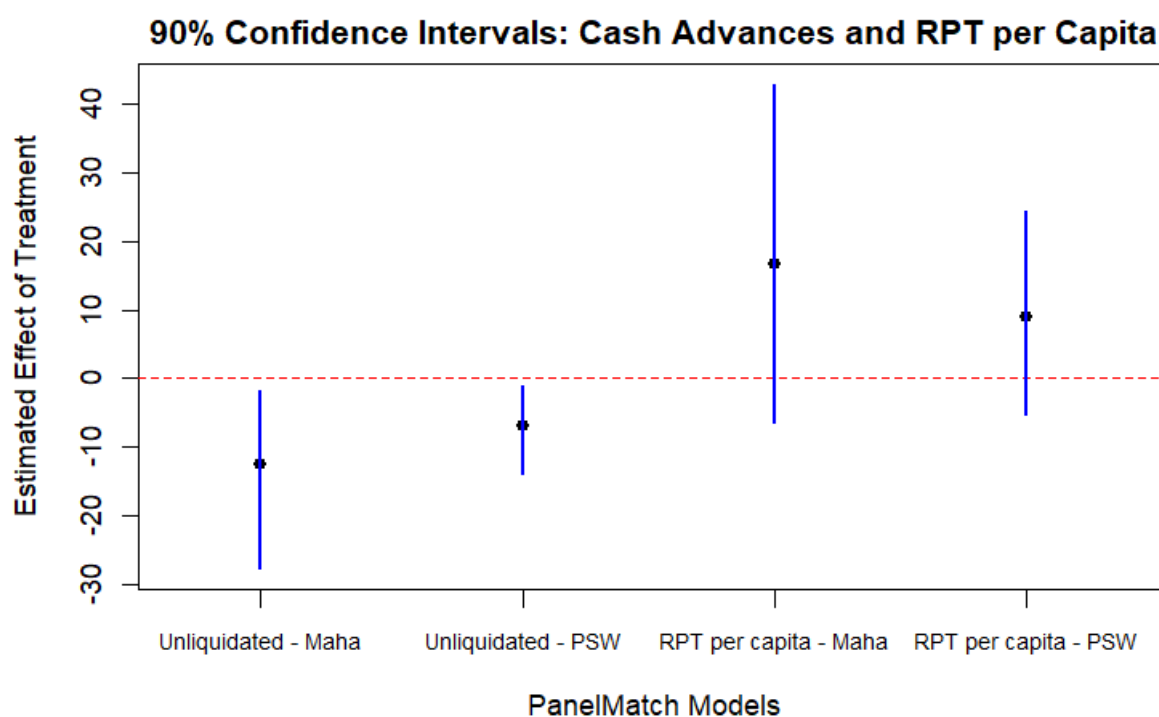


Figure 4: PanelMatch Results using Mahalanobis and PS Weighting Distance Metrics

I display my estimates and 90% Confidence Intervals for Average Treatment Effect on the Treated (ATT) in Figure 4. Specifically, I get consistent results for both variables of interest. First, the occurrence of a close-election race is associated with 12.5 Philippine pesos per capita (Mahalanobis) and 6.8 Philippine pesos per capita (PS Weighting) *less* in unliquidated cash advances in the succeeding mayoral term, with both estimates significant at the 90% level.

However, neither of my real property tax per capita estimates are in the expected direction nor statistically distinguishable from zero. Both for my Mahalanobis and PS Weighting models, I estimate that cities/municipalities experiencing tight elections raise 16.8 Philippine pesos per capita and 9.0 Philippine pesos per capita more in taxes in the mayoral term afterwards, but the confidence intervals for these figures include zero.

Discussion and Conclusion

I surmised that electoral competition could erode the tax-accountability relationship that has been a lodestar of the state-building literature. Yet my results using panel-matching methods provide mixed evidence of this hypothesis. Though I find evidence that close-elections may drive politicians to decrease corruption-related unliquidated cash advances in the succeeding term, I am not able to reject the null hypothesis of a zero effect for real property tax collections. This latter finding is particularly puzzling in light of work that suggests an adverse effect of electoral competition on fiscal consolidation. If this null result remains robust to other approaches, then it indicates that the electoral politics of taxation may have more than meets the eye than the canard that taxes are politically unpopular and electorally costly.

At the same time, the results for my unliquidated cash advances variable also suggest that it may be a valid measure for corruption at the local government level. There is more to be done on the corpus of audit reports that I have compiled, such as by integrating procurement-related irregularities into my corruption measure, but the consistency of my results with other literature in empirical political economy (Ferraz and Finan 2008) suggests that my metric has measurement validity. Should that continue to hold, then my strategy of

leveraging public audit reports could hopefully open the door for a wider range of exploratory, descriptive, and causal research on the dynamics, determinants, and effects of corruption in developing countries than has hitherto been the case. By knowing more about what makes corruption tick at different layers of government, political scientists will be better-placed to inform efforts to curb it.

References

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