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Development and Decay: Political Organization, Economic  
Conditions, and Municipal Corruption in Puerto Rico,  
1952-2015

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Political Organization, Economic Conditions, and Municipal Corruption in Puerto Rico,  
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**Abstract:** Corruption has been a salient feature of Puerto Rico (PR)'s modern history. However, systematic empirical research on this subject has been generally lacking. In this paper, we examine trends and patterns in municipal government malfeasance and corruption during a period spanning over six decades. Using data from all municipal audit reports conducted by the PR Office of the Comptroller between 1952 through 2015, we characterize patterns of corruption across three periods of change that altered governance practices in the territory: the time of hegemonic dominance of the Partido Popular Democrático (PPD), the era of intense political competition between the PPD and the pro-statehood Partido Nuevo Progresista (PNP), and the final collapse of the territory's institutional model. We show that institutions and political practices, as opposed to economic determinants, play a key role in explaining corruption patterns. We argue that corruption patterns can be explained through the lens of politics in divided and polarized societies.

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## 1. Introduction

Recent economic and political events in Puerto Rico have brought to the fore the limitations of the institutions that have served as underpinnings for its socioeconomic development since the 1950s. The largest municipal debt default in history, the stagnation of an economy over the better part of a 15-year period, and the massive protests that lead to the resignation of the territory's governor in 2019 represent the final acts of a set of political relationships rooted in patronage and clientelism that have anchored political consent in the island (Pantojas García 2015). Even though public corruption has played an important part in the configuration of island politics for a long time, and despite an intense belief in Puerto Rican society that corruption is unethical and that elected politicians and public officeholders who engage in it should be held accountable<sup>5</sup>, the systematic study of corruption over time in Puerto Rico is scarce.<sup>6</sup> Shedding light on these issues – its forms, magnitude, and causes – is particularly relevant in the context of research that establishes negative consequences of corruption for political stability, the legitimacy of political representatives, democratic functioning, respect for the rule of law, and generalized social trust (Acemoglu and Robinson 2012; Besley and Persson 2011; Fukuyama 2014; Seligson 2002).<sup>7</sup>

This article attempts to address this gap in our knowledge of Puerto Rico's experience with public corruption during a period spanning more than six decades. We take advantage of a unique source of data, the universe of municipal audit reports carried out between 1952 and 2015 and published by the territory's Office of the Comptroller, to examine patterns of municipal government malfeasance and corruption in Puerto Rico. We code all primary findings documented in these reports, allowing us to construct a longitudinal dataset of the extent of corruption in all municipal governments in the period since the establishment of the Commonwealth of Puerto Rico until the passage of the Puerto Rico Oversight, Management, and Economic Stability Act (PROMESA) and the island's debt default. This gives us the opportunity to present an overarching picture of patterns of public corruption in the territory throughout periods of economic and political development and decay, and

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<sup>5</sup> See Cámara-Fuertes and Bobonis (2015), Segarra Alméstica and Enchautegui Román (2010), and Enchautegui Román (2010) respectively for evidence of citizens, businesspeople, and public employees' perceptions of corruption levels in PR.

<sup>6</sup> One of the best sources is the series *Project on the Misuse of Government Resources* by the Center for Economic Research (Centro de Investigaciones Económicas) of the University of Puerto Rico – Rio Piedras. See <http://economia.uprrp.edu/ArticulosFinales.html>.

<sup>7</sup> In this essay we start from the premise that the debate on the pros-and cons corruption is settled. Economists have widely shown its adverse consequences for growth, for inequality, and for myriad other economic efficiency and equity outcomes (see Olken and Pande 2012 for a review). Social scientists have been historically more ambivalent about corruption since it appeared to thread social actors in way that guaranteed order and/or economic efficiency (Huntington 1968; Stigler 1971). More recently, this view has largely been confirmed to be erroneous (Olken and Pande 2012).

to address three important questions regarding political corruption.<sup>8</sup> First, what are the historical and contemporaneous aggregate patterns of municipal corruption in the island? Second, what is the relationship between public corruption and the structure of political organization and electoral politics? Third, how do economic conditions influence local levels of public corruption?

We characterize patterns of corruption across three periods of fundamental economic and political change that shaped governance practices in the territory: the period of hegemony of the Partido Popular Democrático (PPD) between the establishment of the Commonwealth and the late 1960s; the 1970s to 1990s period of economic growth and a sharp increase in federal transfers, coupled with strong bipartisan competition; and the period of fiscal crisis and economic stagnation on the first two decades of the XXI Century. We find that municipal corruption levels were moderately high during the period between the late 1950s and the mid-1960s, throughout the decades of the PPD's hegemonic dominance. Corruption levels decreased between the mid-1960s and early 1970s, when the ascent and election of the pro-statehood Partido Nuevo Progresista (PNP) ended the PPD's hegemony and started an era of intense political competition. A gradual, consistent rise in reported misgovernance and corruption levels followed through the latter half of the 1970s, the 1980s, and the 1990s, during a period of gradual increase in the government's reliance on federal transfers. We observe a considerable reduction in local corruption levels in the early 2000s—coinciding with the territorial government's temporary efforts to curb public malfeasance<sup>9</sup>—followed by a considerable increase during the final collapse of Puerto Rico's institutional and economic model.<sup>10</sup>

In order to ascertain the proximate causes of these trends, we quantitatively analyze the most salient determinants of local public corruption. Specifically, we link municipal audit data with a rich array of political, socio-demographic, administrative, and economic measures. We present evidence that indicates that the configuration of political practices and institutions play a first-order role in explaining corruption patterns. Consistent with earlier work by Bobonis, Cámara Fuertes, and Schwabe (2016) [henceforth BCS], we show that government responsiveness and accountability

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<sup>8</sup> Not all corrupt acts are detected by the OCPR municipal audit reports, due to its illegal nature. As we discuss in the paper, given the institutionalization of the OCPR and the competence of its auditors these data are a good reflection of corrupt acts in the municipalities in Puerto Rico.

<sup>9</sup> During the 2001-2004 term, Governor Sila M. Calderón promulgated Executive Order No.2001-06 with the intention to promote the proper and efficient use of public resources and to complete “the total eradication [sic] of government corruption.” To further that effort, the Order created the “Independent Citizens' Commission to Evaluate Government Transactions” (i.e., Blue Ribbon Commission) for the purpose of evaluating significant government transactions.

<sup>10</sup> Scholars argue that the institutional and economic collapse resulted from both the global changes in the geopolitical and economic landscape which severely affected the territory's long-term development prospects and the territorial government's inability to effectively respond to these changes (e.g., Pantojas García 2015; Caraballo Cueto 2020).

incentives via timely audit reports strongly mitigate corruption. These effects are concentrated in municipalities in which local elections reflect a historical alternation of parties, a finding that supports the view that electoral accountability is an important explanatory mechanism.

We also examine the importance for corruption of party loyalties at the municipal level—which we capture with a measure of a municipality’s history of non-competitive elections; and of high co-partisanship—as gauged by the political party correspondence between the governor and a municipality’s mayor. Consistent with evidence from other contexts (e.g., Borrella Más 2015), we show that under the period of political alternation, corruption levels tend to be greater in municipalities controlled by co-partisans of the insular government and lower in municipalities with more political competition and turnover. We also show that economic and demographic changes are only weakly related to municipal-level trends in corruption. These findings contrast with views that emphasize the role of local or aggregate growth or increasing economic complexity in influencing corruption levels (see review in Colonnelli, Gallego, and Prem 2020).

We conclude with an interpretation of the trends in Puerto Rico’s levels of corruption through the lens of theories of political economy of underdevelopment. Specifically, we characterize the problems of misgovernance throughout these decades as transitioning from one of clientelist machine politics pervasive in the era of PPD hegemonic dominance to one of extreme forms of polarization and politics in divided societies (Magaloni 2006; Stokes et al. 2013; Padró-i-Miquel 2007). The demise of the PPD hegemony in the late 1960s gave rise to extreme forms of political polarization organized along group identity lines—strong allegiances to the territory’s political parties – and where the distribution of benefits to groups organized along such lines is of paramount interest to constituents. We argue that this gave rise to a form of misgovernance detrimental to the majority of the population—as in models of kleptocratic politics with intense political competition (Padró-i-Miquel 2007; Anderson and Francois 2020). Our study also confirms the important role played by the government’s monitoring apparatus in countering these forms of misgovernance. Despite the prevalence of intense party-specific political loyalties, we show that technocratic anti-corruption efforts can be effective at reducing corruption.

The article is organized as follows. Section 2 provides contextual information about politics and governance issues in the context of Puerto Rico together with a description of the Office of the Comptroller of Puerto Rico municipal audit program. We follow with a description of the audit reports data and other data sources in Section 3. Section 4 presents the central empirical findings and discusses

plausible explanations for the patterns of municipal corruption. Finally, Section 5 concludes with a broad interpretation of the findings and their implications for governance practices in Puerto Rico.

## **2. Background**

### **2.A. Puerto Rico's Political Context since 1898**

In this section we provide a brief characterization of Puerto Rico's political dynamics that undergird the trends documented in the quantitative analysis. While our analysis of the quantitative evidence focuses on patterns of corruption since 1952, to understand long-term trends requires a discussion of the political and economic context in which it was nested prior to the 1950s. Consequently, we begin our discussion of corruption in Puerto Rico at the turn of the century with the arrival of U.S. military forces during the Spanish-American War of 1898. While we proceed chronologically, our aim is to provide a synthetic sense of the degree to which corruption was pervasive in insular politics.

#### *Colonial Domination and the Spoils System*

The formal political incorporation of Puerto Rico into the United States after the Spanish-American War in 1898 ushered in various attempts to contain patronage and corrupt political practices prevalent under the Spanish regime. Early on colonial authorities noted that pervasive governmental disorganization and a dearth of resources made it difficult if not impossible for municipalities to collect taxes or pay municipal employees. Moreover, the lack of clear budgetary and administrative guidelines, made it possible for corrupt officials to prevail and remain unaccountable (Report of the Military Governor of Puerto Rico on Civil Affairs 1902; Wells 1968).

Under the Foraker Act of 1900 (and subsequently under the Jones Act of 1917), U.S. colonial authorities attempted to contain corruption by implementing greater centralization and control of municipal authorities. These practices, premised on the perceived need for “educating the natives in self-government” (Clark 1972), may have exacerbated corruption since the lack of autonomy led local and insular-level officeholders to prioritize patronage over programmatic politics, a strategy crucial for electoral success throughout the period (Clark 1972). Despite these efforts, throughout the first three decades of the 20<sup>th</sup> century, patronage remained a pervasive constant, as did other more notable forms of political corruption such as vote buying, and ballot box stuffing. An institutionalized spoils system emerged that covered a whole raft of appointments across government branches. The prospects of controlling the spoils system drove competition between insular political parties (Wells 1968).

### *PPD Hegemony*

The economic crisis of the 1930s and widespread discontent with the colonial political order led to a breakdown in the support for the political parties that had dominated Puerto Rico politics in the first third of the twentieth century. This crisis ushered in the emergence of the Partido Popular Democrático (PPD). The PPD ran under a platform that promoted more proactive management of the economy, and economic development. These goals entailed the growth of technocratic cadres in public service, and the creation of new government agencies and instrumentalities. Crucially, this entailed breaking with the prevalent spoils system and the rejection of patronage politics. The PPD governed Puerto Rico from the early 1940s through the late 1960s; under its leadership as a single party government. Puerto Rico attained home rule in 1952 with the constitution of the Estado Libre Asociado (ELA) or Commonwealth in 1952 and established the political structure that has persisted until today (Agrait 1972). PPDs hegemony was rooted in the broad appeal of this political project and on the territory's positive economic performance throughout this period (Cabán 2002; Villaronga 2010; Toro 2014). While seemingly coinciding with the professionalization and technocratic improvement in the management of government affairs (Wells 1968), corruption and patronage appear important in understanding the PPD hegemony (Anderson 1965; Pabón 1972).

### *The Onset of Political Competition and Contemporary Corruption*

The era of PPD hegemony ended with the election of 1968, in which the Partido Nuevo Progresista (PNP)—the island's dominant pro-statehood political party—won the governorship.<sup>11</sup> This election ushered in an era of intense two-party political competition (between the PPD and PNP) that has continued into 2016 (Agrait 1972; Anderson 1973; Bayrón Toro 1989; Meléndez Vélez 1998; Pantojas García 2015).

Both parties have portrayed the question of the relationship between the island and Washington—the so-called “status issue”—as the key to ameliorating poor economic and social conditions on the island.<sup>12</sup> As we will document below, public corruption has been pervasive in Puerto Rico throughout this period. Although Puerto Rico ranks in international comparisons as a territory with moderate levels of corruption, it underperforms in the dimensions of transparency and

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<sup>11</sup> Besides controlling the governorship and the House of Representatives, it elected mayors in 27 of all 76 municipalities.

<sup>12</sup> This has been the main cleavage in Puerto Rico politics throughout the past century and even more recently (Anderson 1988; Bayrón Toro 1989; Meléndez Vélez 1998; Barreto and Eagles 2000; Cámara-Fuertes 2004). Due to the emphasis on this political cleavage, there have been very limited programmatic policy differences between the PNP and the PPD until recently (Meléndez-Vélez 1998; Cámara-Fuertes 2010).

bureaucratic efficiency (Segarra Alméstica and Enchautegui Román 2010). Scholars have argued that this is related to highly developed systems of political patronage and clientelism, both at the territorial and municipal levels (Santana Rabell 1993; Comisión de Derechos Civiles 1993; Cordero Nieves 2012). The high degree of politization of public administration has persisted and is reflected in the territory's political culture (Rivera, Seijo, and Colón 1991). The issue has gained prominence in electoral politics during the last three decades.<sup>13</sup>

Corruption appears related to the ebbs and flows of available federal transfers and to party competition that has intensified by Puerto Rico's growing economic misfortunes. A secular decline in the territory's economic prosperity since the mid-2000s marks a structural break in Puerto Rico's economy that persists to the present day.<sup>14,15</sup> The territory's public debt levels reached a breaking point in 2015, when the government declared a stop on future debt payments and a territorial debt crisis ensued (Carballo-Cueto and Lara 2018). In 2016, the U.S. Congress approved PROMESA, which provided the government with bankruptcy-type protection and created the P.R. Fiscal Oversight and Management Board to supervise government spending.<sup>16</sup>

While the evidence for increased corruption and misuse of public resources at the state level is significant, at the municipal level the situation appears to be more pronounced. According to Segarra Alméstica and Enchautegui Román (2010), municipal corruption levels increased disproportionately

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<sup>13</sup> In every one of the polls conducted between 1995 and 2004 commissioned by the newspaper *El Nuevo Día*, the percentage of people mentioning corruption as a problem ranged from 55 to 72 and corruption ranked between the fourth and the sixth place as an important issue. Furthermore, when people were asked to select the *most* important problem, corruption was among the top five issues mentioned in 1999, 2000, 2002 and 2004. In 2012 (2013), 65 (61) percent of Puerto Ricans thought that corruption was an important problem. According to the 2018 Puerto Rico World Values Survey, 78 percent of respondents reported having perceptions of abundant public corruption (Hernández Acosta 2019).

<sup>14</sup> Shifts in the global geopolitical landscape (i.e., the fall of the Soviet Union, the advent of the North American Free Trade Agreement (NAFTA) and other preferential and multilateral agreements) have diminished Puerto Rico's strategic importance to the U.S. In 1996, Congress repealed Section 936 of the Internal Revenue Code, a fiscal device used to attract U.S. capital to the island (Carballo Cueto 2020). The eventual phaseout of this investment subsidy culminated in 2005 and caused a reduction in manufacturing activity, which led in turn to a significant and persistent reduction in aggregate economic activity and in the territorial government's tax revenues. In 2003, the U. S. Navy closed their operations in Roosevelt Roads Naval Station in the municipality of Vieques and shortly after those in the municipality of Ceiba. This was a sign of the decreasing geopolitical importance of Puerto Rico for the mainland government (Pantojas García 2015; Bobonis, Stabile, and Tovar 2020).

<sup>15</sup> This was followed by a dramatic increase in net migration rates and a rise in public debt levels. An average of 53,020 individuals migrated from the territory in each year between 2010 and 2014 (Duany 2017). The total population of the island decreased from 3.9 million in 2006 at the start of the recession to 3.3 million in July 2017, just before Hurricanes Irma and María devastated the island (Mora, Dávila and Rodríguez 2018).

<sup>16</sup> We refer readers to Cabán (2002) and Toro (2014; 2017) for more details regarding the examination of the political and economic patterns shaping each of the periods highlighted above up to the end of the 20<sup>th</sup> century, and Pantojas García (2015) for the period of final institutional collapse of the territory. For more details regarding the issue of public corruption in Puerto Rico, see the series of reports of the *Project on the Misuse of Government Resources* by the Centro de Investigaciones Económicas of the University of Puerto Rico–Río Piedras.

relative to the territory's Legislative, Judicial or Executive branches starting in the 1980, and the difference has become starker in the 1990s and the 2000s.

## **2.B. The OCPR Municipal Government Auditing Program**

The Office of the Comptroller of Puerto Rico (OCPR) is an autonomous government agency with the mission to “audit the property and public funds transactions with independence and objectivity to determine if they have been done in accordance to the law[, and] promote the effective and efficient use of the government resources [...]” (Office of the Comptroller 2020). To achieve this goal, the OCPR audits all branches of the Government of Puerto Rico: the Executive, including its public corporations, and municipal governments, as well as the Judicial and Legislative branches.

Various dimensions of institutional design are set to ensure its independence. As established in the 1952 Constitution of the Commonwealth of Puerto Rico, the Comptroller of PR is appointed to a fixed ten-year term and must be confirmed by both the PR House of Representatives and the Senate. The OCPR is placed under the authority of the Legislative Branch because a majority of its operations focus on audits of the Executive Branch. In addition, auditors are competitively paid and highly trained and they cannot audit the municipality in which they live.

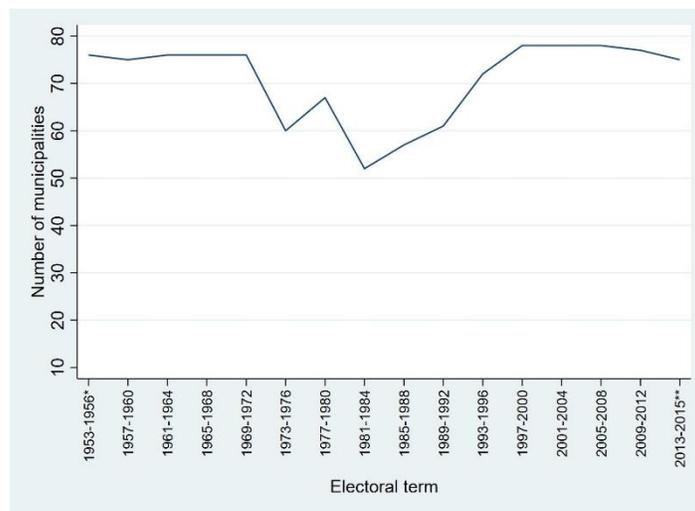
The OCPR has been carrying out audits of each municipal government and of municipal consortia uninterruptedly since 1952. Once a municipality is to be audited, the OCPR sends a team of auditors to examine accounts and documents, inspect works, and interview different stakeholders such as municipal employees and community members. The team produces a preliminary report which is subsequently shared with municipality officials (i.e., the mayor and top management) to provide them with an opportunity to review, challenge, or explain findings. Once the response is received and evaluated, a final report is issued and disseminated to the public and the media. For large and complex municipalities, the office may complete several audit reports during an audit period.

The forms of public corruption in municipal governments uncovered through the audits take diverse forms. Corruption schemes are typically based on a combination of procurement fraud, the illegal hiring and employment practices, and over-invoicing for products or services. In addition, the audit reports also suggest that some individuals simply divert resources for personal benefit. Following the existing literature, we combine these into a single measure (see Section 3.A). An example will help illustrate the types of irregularities uncovered. In a report on the municipality of Maunabo during February-March 1997, contracts for the pavement and maintenance of roads summing up to

approximately \$138K were partitioned into separate projects in order to avoid carrying out a public auction, and the auditors were unable to confirm the authenticity of other quotes submitted for the projects.<sup>17</sup>

Although by law each municipality must be audited every two years, this has not been the case all the time. Figure 1 shows the coverage of municipal government audits in each four-year term. A clear dip in the number of municipalities audited in each term can be seen starting in the early 1970s and reaching its lowest point by the early 1980s. After that, audits start to increase steadily until their coverage rises consistently to 78 municipalities (100 percent) in the latter part of the 1990s.

**Figure 1: Coverage of Municipal Government Audits**



*Note: the above graph shows the number of municipalities for which at least one audit report was published during the given electoral term. \*Three reports from 1952 are included in the data for the 1953-1956 electoral term. \*\*The latest publication year of reports in our dataset is 2015, and our data therefore does not include all reports in the 2013-2016 electoral term.*

There are various possible explanations for this pattern. By the early 1960s, the state government started to increase in size and complexity and benefitted from a growing influx of federal transfers. In addition, federal government agencies required municipal governments to do independent audits of the use of federal funds. Thus, the OCPR may have reallocated its scarce resources to auditing other government units (i.e., state government agencies and public corporations)

<sup>17</sup> For more details of this and other examples of findings of corruption in these reports, see our previous work (Bobonis, Cámara-Fuertes and Schwabe 2016)

given a higher expected return in detection of malfeasance in central government units as opposed to local governments.<sup>18</sup>

The decrease in municipal audits also coincided with the severe 1973-74 and 1981-82 recessions, which may have led to budget cuts to municipal auditing activities. The reasons for the reduction in the frequency of audits throughout the 1970s and early 1980s are thus likely due to structural and resource constraints as opposed to being politically motivated. Starting the mid-1980s, stronger leadership from the Comptroller and a string of high-profile municipal corruption investigations by the legislature led to the increase of municipal audits.<sup>19</sup>

### **3. Data and Empirical Methodology**

#### **3.A. Measures of Corruption Based on the Audit Reports**

We use all the OCPR municipal audit reports published since it began operations in 1952 until 2015. These 64 years cover 2,243 municipal audit reports. Each report contains information on findings, individuals involved, type of issue, and the amount of funds involved, among other items of information.

Because the OCPR does not officially classify findings as instances of corruption as such, we created a coding scheme that specifies whether each finding constituted an act of corruption or not. We operationalize corruption as an act by any municipal employee that led to a personal financial or political benefit, as interpreted by the information presented in the audit report. Thus, the mayor receiving a bribe for a contract, using municipal employees for his or her electoral campaign, or an employee pocketing part of the municipal tax collections, are classified as corrupt acts. On the other hand, constructing a retaining wall without the proper permits or poor bookkeeping would not, unless the report stated that it involved the cover-up of a corrupt violation.

To construct municipality-level measures of corruption, we follow Ferraz and Finan (2008; 2011) and BCS (2016) and sum the number of findings of corruption using our definition of corruption in each audit report. Because the OCPR may publish multiple reports on a municipality during one auditing period depending on the size or complexity of the municipal government, we normalize our measures by dividing the sum of findings by the number of reports published in that

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<sup>18</sup> We partially confirm the greater influx in federal transfers based on aggregate data from the Puerto Rico System of National Accounts for the period 1971-2015 (see Figure A1 in the Online Appendix).

<sup>19</sup> We thank Víctor García San Inocencio and Orlando Sotomayor for their insights in interpreting these data.

auditing period. In addition to the total number of corrupt violations, we look at corrupt violations by the mayor or vice-mayor, and those referred to the P.R. Department of Justice (DoJ).

### **3.B. Other Data Sources**

We employ additional data available from the P.R. State Electoral Commission (CEE) containing the results of municipal and territorial-level ballots for the 1976 to 2012 elections. Electoral outcomes at the municipal level for the period 1956-1972 were obtained from Cosme Morales (2017) and Nolla-Acosta and Silén-Afanador (2019). These data allow us to construct measures of electoral characteristics and outcomes for each municipal government and term. We also use annual municipal government budget data for the fiscal years 1991-92 through 2015-16 from the P.R. Office of the Commissioner of Municipal Affairs. Finally, we use municipality-level population estimates generated by the P.R. Institute of Statistics using information from the 1950-2010 U.S. Censuses of Population and Housing.

## **4. Results**

### **4.1 Trends in Municipal Corruption, 1952-2015**

In this section, we report trends in levels of reported corruption throughout this 64-year period. This gives us the opportunity to present an overarching picture of patterns of public corruption in the territory throughout the periods of development and decay. We start the discussion with a graphical analysis of reported violations over time, grouped by electoral term, to shed light on the patterns in the data (Figure 2). Panel A of the figure presents the average number of violations as well as those attributed to the top municipal officials (i.e., mayor or vice-mayor) throughout the period. Panel B also shows the average level of reported findings but compares them to the share of those violations that was referred to the DoJ. In both panels, the measure of corruption represents violations per number of reports issued for a municipality in each term. This adjustment corrects for differences over time in the frequency of reports issued by the OCPR, thus identifying the prevalence of reported corruption in a municipality when an audit was conducted. For purposes of framing historical episodes, we include marker lines for each Comptroller's term in office and for each governor's terms in office in Panels A and B, respectively.

Municipal corruption levels were moderately high during the period between the late 1950s and the mid-1960s, throughout the decades of one-party hegemonic dominance of the Partido Popular

Democrático (PPD). They increase from approximately 1.1 corruption findings per audit report on average in the 1953-56 period to approximately two findings per report in the latter part of the decade and the first term of the 1960s (1.80 and 2.21 findings per report in the 1957-60, 1961-64 terms). Corruption levels decreased in the 1965-1968 and 1969-72 electoral terms, the period following Luis Muñoz Marín’s transition out of gubernatorial office and the ascent and election of Luis A. Ferré and the pro-statehood Partido Nuevo Progresista (PNP) in 1968, ending the PPD’s political hegemony.

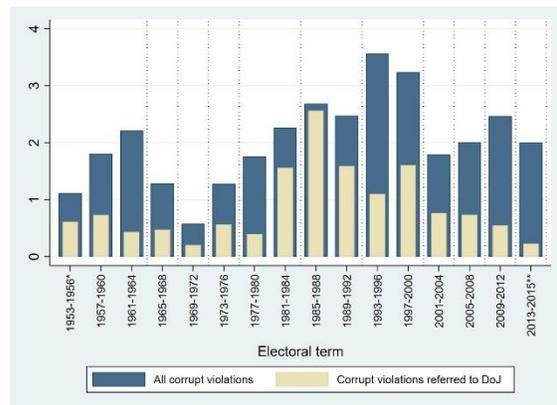
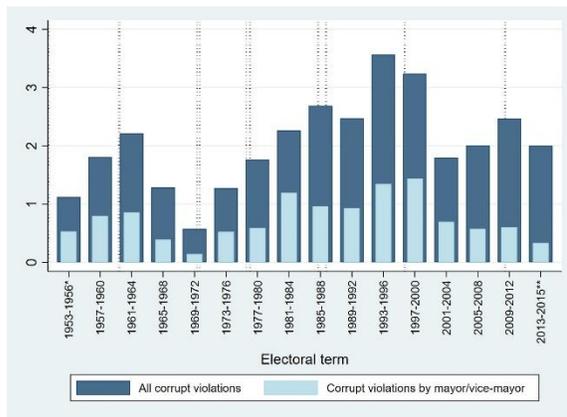
**Figure 2: Average Number of Corrupt Violations by Electoral Term**

Panel A: All violations and violations by mayor/vice mayor

Panel B: All violations and violations referred to PR Department of Justice

(with marker lines for Comptroller terms)

(with marker lines for Gubernatorial terms)



*Note for Panels A and B:* These figures represent the average number of violations per report in each electoral term. \*Three reports from 1952 are included in the data for the 1953-1956 electoral term. \*\*The latest publication year of reports in our dataset is 2015, and our data therefore does not include all reports in the 2013-2016 electoral term. *Panel A:* The dashed vertical lines reflect Comptroller terms (Panel A) . and Gubernatorial terms. (Panel B)

The decrease in corruption seen in the 1969-1972 term – with approximately 0.6 corrupt findings per report on average – is temporary, and is followed by a gradual, consistent rise in reported corruption levels from the mid-1970s until the late 1990s during the last period of robust economic growth in the territory. By the mid and late-1990s, in the era under Pedro Rosselló’s gubernatorial terms in office, municipal corruption levels respectively reach a peak average level of 3.6 and 3.2 findings per report. This observed rise in corruption is consistent with standard models of clientelist politics: increases in the influx of government revenues tend to lead to increases in corruption and patronage relative to investments in public goods and services (Besley and Persson 2011).

Finally, we observe a considerable reduction in local corruption levels in the 2000s – during the 2001-2004 and 2005-2008 terms – relative to the preceding period: reported levels decrease to approximately 1.8 and 2.0 findings per report, on average. This coincides with the territorial government’s temporary efforts to curb public malfeasance by expanding anti-corruption efforts at the territorial government level. Among other efforts at the insular level, in January 2001 Governor Sila M. Calderón promulgated Executive Order No.2001-06 with the intention to promote the proper use of public resources and to eradicate government corruption. To further that effort, the Order created the *Independent Citizens’ Commission to Evaluate Government Transactions* – the “Blue Ribbon Commission” – for the purpose of evaluating and investigating significant government transactions.<sup>20</sup>

Reported corruption levels increase moderately in the 2009-2012 period, following the structural break that leads to the final collapse of Puerto Rico’s institutional and economic model, the start of the 2008 Great Recession, the increase in federal funding through the Economic Stimulus Act of 2008 and the American Recovery and Reinvestment Act of 2009, among others. Average levels of corruption increase to 2.5 findings per report in this term, but moderate levels of corruption persist at approximately 2.0 findings per report during the 2013-2015 period, the end of our study period.

Our findings are in line with previous findings in the literature. Using measures of judicial conviction in state and federal tribunals as well as an index of misuse of public resources (combining corruption and waste) from OCPR audits, Segarra Alméstica and Enchautegui Román (2010) show that both measures increased during the 1980s and in the 1990s in particular, briefly decreased in the early 2000s and started to increase again after 2003.

The richness of the audit reports data allows us to document additional details in aggregate trends in reported corruption during this extensive time horizon. First, the levels of corruption attributed to the top leadership in the municipalities – as indicated by violations for mayors and vice-mayors – follows a pattern very similar to the aggregate findings (see Figure 2, Panel A). Approximately 36 percent of corrupt findings are attributed to the top leadership, and this proportion is generally

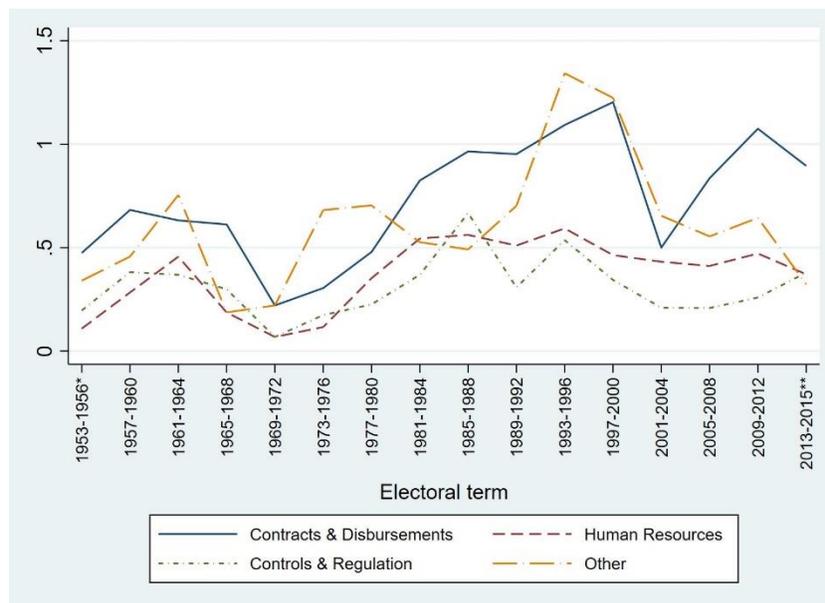
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<sup>20</sup> The Blue Ribbon Commission had the power to evaluate current or past transactions of the executive branch of the PR government with the potential to substantially impact areas such as the government’s structure, the public treasury, the country’s economy and infrastructure, or the citizenry’s trust in government institutions. The Commission had the authority to request information from natural and artificial persons, to require the assistance of the executive branch, and to issue reports to the Governor, including both the findings of any investigation and any recommendations (e.g., adoption of new statutory or regulatory rules, the modification of existing ones, and further proceedings, either administrative, civil, or criminal, against certain individuals). The Commission had confidentiality protections and reports could only be made public by the Governor’s office.

consistent across time periods. Second, we do not observe a clear pattern in reported corruption levels across periods of incumbency of different Comptrollers.<sup>21</sup>

Third, we generally observe a positive relationship between the total number of findings across reports and those referred to the DoJ, but this correlation is conditional on the time period of reference (Figure 2, Panel B). For example, during the hegemonic period of PPD rule between the mid-fifties and the late 1960s—the period encompassing four electoral terms but only two governors—there is no strong relationship between municipal corruption and referrals to the DoJ. The relationship becomes strong and positive during the period between the late 1960s and the mid-1980s, when referrals rise to close the gap vis-à-vis the overall level of violations in the 1981-84 and 1985-88 terms. However, this relationship breaks down under the incumbency of Comptroller Ileana Colón Carlo in the 1989-92 electoral term onwards.

**Figure 3: Average Number of Corrupt Violations per Report, by Electoral Term and Class of Government Activity**



Notes: \*Three reports from 1952 are included in the data for the 1953-1956 electoral term. \*\*The latest publication year of reports in our dataset is 2015, and our data therefore does not include all reports in the 2013-2016 electoral term. See online appendix for details of data categories.

<sup>21</sup> Recall that the measures between each set of vertical dotted lines represents the incumbency period of each Comptroller (see the notes to Figure 3 for details).

We also document time trends by type of violation identified in the municipal audits by municipal government activity classification (see Figure 3). We identify the three most prevalent types of findings: those related to (i) contracts and disbursements, (ii) human resources management, and (iii) lax regulation and controls. We also report the average number of violations by type of administrative practice, including all instances in which a report did not issue a finding in that category.

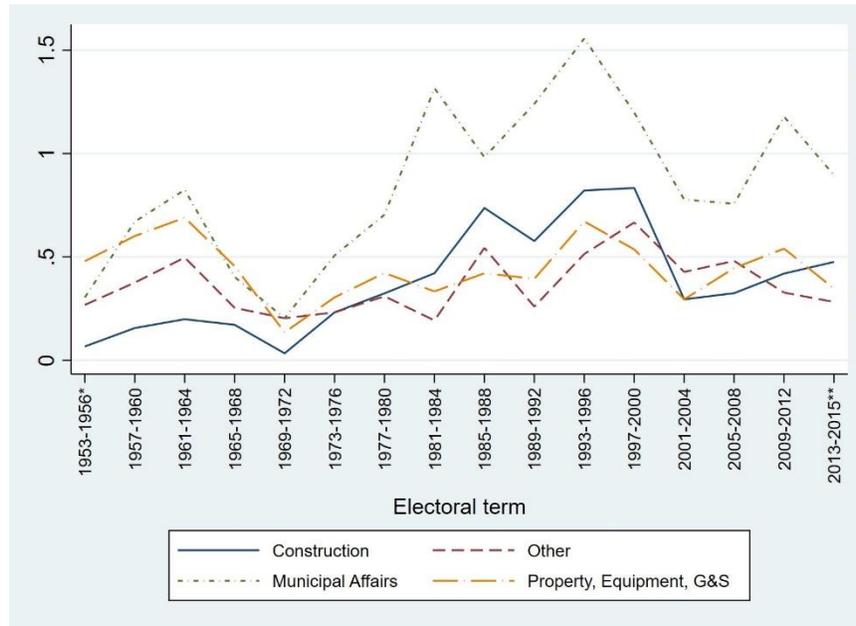
Across the period between the 1950s and up to the 2010s, all three types reflect similar trends, albeit with different aggregate frequencies. Findings related to contracts and disbursements are most prevalent in the 1950s and 1960s during the period of PPD hegemony, and again throughout the 1980s-1990s during the rise in contracting related to construction (see below). Finally, they rise again during the 2009-2012 period, following the increase in federal funds transferred to the territory through the Economic Stimulus Act of 2008 and the American Recovery and Reinvestment Act of 2009, among others. Independent surveys of public employees and business owners confirm this pattern: public employees report that corruption tends to take place most often in contracting with private providers, whereas business owners report that the need for bribery is most common in the awarding of municipal contracts (Enchautegui 2010).

Findings of corruption related to human resources subsume a wide-array of employment-related issues, covering nepotistic hiring, political discrimination, and the uncovering of “ghost” employees, generally used as a device for outright diversion of public funds. Violations related to lax regulation under the category of controls and regulations typically cover practices that enable theft of inventory, loose or absent supervision of private gifts, and of donations between private actors and public officials related to but not limited to currying favors, and the suborning of public employees. Finally, we classify under the rubric of “other” a fairly heterogeneous, but by no means unimportant, set of violations, related to accounting and financial mismanagement, extravagant expenses, and extortion. In general, the frequency of the reported violations for human resource issues and lax regulation appears to be fairly low and map consistently over time to aggregate and to the “other” category. They exhibit a similar rise in the latter part of the 20<sup>th</sup> century.

Figure 4 shows time-trends in corrupt behavior by classification of government activity. This categorization shares some overlap with the conceptualization of municipal affairs owing to how internal municipal operations are oftentimes unclassifiable into particular sectors. We identify the three most common areas involving corrupt activities: (i) construction, (ii) issues related to internal administration, and (iii) procurement, purchase and rental of property, equipment, goods, and services. Activities associated with health, education, telecommunications, advertising, transfers to groups and

individuals, law enforcement, solid waste management, and other maintenance services) are grouped jointly due to the low levels of reported malfeasance in these areas.

**Figure 4: Average Number of Corrupt Violations per Report, by Electoral Term and Area Classification**



Notes: \*Three reports from 1952 are included in the data for the 1953-1956 electoral term. \*\*The latest publication year of reports in our dataset is 2015, and our data therefore does not include all reports in the 2013-2016 electoral term. See online appendix for details of data categories.

There incidence of corruption in the construction sector is low, with a relatively low average level of corruption – between 0.03 and 0.20 findings per report on average – in the period between the 1950s and early 1970s. However, there is an increase between the mid-1970s and the late 1990s. Specifically, incidents peak at 0.82 and 0.83 findings per report in the 1993-96 and 1997-2000 electoral terms, respectively. We also note a relative decline in the findings of corruption related to the procurement of property, equipment, goods, and services throughout this period. This suggests that there has been a substitution in the modes of corruption across municipal government sectors over the decades, possibly consistent with a restructuring of local government activities throughout this time period.

#### 4.2 Relationship with the Political and the Socio-Economic Environment

In this section, we aim to address more fully the underlying relationship between public corruption in Puerto Rico and the structure and competition between political parties, clientelist politics, and short- and long-run economic conditions. To do so, we report correlations between the municipal audit data and a rich array of political, socio-demographic, administrative, and economic measures at the local level. Importantly, we show evidence that the configuration of political practices and institutions play a first-order order role in explaining corruption patterns.

As discussed above, the sudden decrease in public corruption during the start of the period of intense political competition followed by the steady rise in malfeasance in the subsequent decades suggests that political organizations and clientelist politics have influenced the level of corruption. Puerto Rico's political system has traditionally been one of very strong levels of partisan identification and attachment to disciplined political parties (Cámara-Fuertes 2004). This is reflected in the citizenry's political culture. That is, at least up to the 1990s Puerto Ricans had some of the strongest levels of partisan attachment among established democracies and this attachment had important consequences for voter turnout and electoral decisions (Cámara-Fuertes 2004).<sup>22</sup> Anecdotal discussions by political commentators suggest that the levels of political attachment have decreased in the past two decades, a pattern that is confirmed by the support of third parties and independent candidates in the 2016 and 2020 gubernatorial elections.

The political environment is arguably that of a divided and polarized society, where politics are organized along group preferences regarding the territory's political status and party affiliation and where the distribution of benefits to groups organized along such lines is of paramount interest to constituents. The increase in corruption levels also happens concurrently with the greater influx in federal transfers and the last period of sustained growth in the territory.<sup>23</sup> In such weakly institutionalized environments with limited constraints on the use of public resources, exogenous increases in the influx of government revenues tend to lead to increases in corruption and patronage relative to investments in public goods and services (Besley and Persson 2011). We thus proceed to characterize aggregate corruption patterns along political and economic lines.

We estimate a series of regression models to sort out the relative relevance of competing explanations of this phenomenon. Within the limits of our data and research design, we aim to

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<sup>22</sup> Rivera, Seijo and Colón (1991) argue that these levels had already started to weaken somewhat by the end of the 1980s.

<sup>23</sup> We show the trends in gross real federal transfers to Puerto Rico for the period 1971-2015 as Figure A1 in the Online Appendix.

decompose between the competing explanations regarding political structures and organizations, partisanship and electoral incentives, and short-run economic conditions discussed above. We use the data covering the period 1987-2014 due to the lack of availability of municipal budget data for the period preceding the early 1990s.<sup>24</sup>

We estimate the relationship between municipal corruption levels and an array of political, administrative, and economic determinants using the following empirical model:

$$c_{m,t} = \beta X_{m,t} + \gamma_t + \alpha_m + \varepsilon_{m,t}, \quad (1)$$

where  $c_{m,t}$  denotes the number of corrupt violations per report in municipality  $m$  around election year  $t$ , and  $X_{m,t}$  is a set of municipality and mayor characteristics expected to influence a municipality's level of corruption. The terms  $\alpha_m$  and  $\gamma_t$  represent municipality and election intercepts, respectively, and  $\varepsilon_{m,t}$  denotes unobserved characteristics that determine our measure of corruption at time  $t$ . We estimate three models, one for each of the following outcome variables: all corrupt violations, those attributed to the mayor or vice-mayor, and those referred to the DoJ.

A growing body of research finds that voters' access to evaluations of politician performance enhances government responsiveness, reduces corruption and rent-seeking behaviors, and promotes electoral accountability, both in the context of Puerto Rico and internationally (BCS 2016; Finan, Olken, and Pande 2017). Following this literature, we take advantage of the structure of OCPR audits and their reporting to investigate whether and how structural political and electoral factors influence levels of corruption. First, audit reports released in the two-year period leading up to an election – defined in BCS 2016 as “timely audits” – are more likely to inform on the incumbent mayor's activities than reports published shortly after an election, due to issues of salience, voter myopia, and a high turnover rate of politicians independent of audit outcomes. Therefore, we use variation in the timeliness of audits within municipalities over time to measure the effects for political responsiveness and accountability to citizens. Theories of political agency predict that we should observe significantly lower levels of corruption in governments exposed to timely audits due to their disciplining and accountability consequences.

Our empirical model thus includes as an important explanatory variable an indicator for whether or not the municipality had a timely audit. We also expand the empirical model with a series

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<sup>24</sup> The results on the political and administrative determinants of corruption reported below are robust to expanding the analysis period to the early/mid-1980s, for which we do not have municipal budget information. We exclude data for the year 2015 given we do not have information around the 2016 election, necessary for the timely auditing analysis described below.

of indicator variables that capture potential political and administrative determinants of corruption, the first being an indicator variable for the political party in power, which measures the regression adjusted-difference in corruption levels in PNP relative to PPD-controlled administrations. A second set of variables indicate whether the mayor is in the opposition relative to the territorial government (i.e., gubernatorial office; and whether the mayor is in the opposite party of the one that appointed the Comptroller in office at the time of the audit.<sup>25</sup> Also included are indicator variables for whether the incumbent mayor's party has won in the past three or more elections (a measure of party incumbency advantage and limited political competition or turnover); and for whether the mayor is in his or her first term in office (as opposed to being a more experienced incumbent).<sup>26</sup> Finally, we control for population levels and municipal budget sizes to account for measures of economic prosperity of the municipality that vary across electoral terms.

We highlight two aspects of the empirical model that are important for understanding the partial correlations described below. First, the models include municipality fixed effects, which control for fixed or very persistent characteristics of municipalities, such as geographic or historical factors affecting corruption outcomes. This specification however inhibits us from measuring how these fixed characteristics of the municipality lead to higher or lower corruption levels, on average. That is, the empirical model relies on measuring how *changes* across electoral terms in these explanatory variables within a municipality correlate with *changes* in municipal corruption levels. Second, including electoral term fixed effects captures aggregate changes that affect all municipal governments in a particular electoral term (i.e., greater levels of federal transfers to the state government). We thus measure how the observed characteristics lead to higher or lower levels of corruption relative to other municipalities in the same period. Note that these municipality and term fixed effects allow us to consider indirectly—but exclude directly from our empirical models—measures of socioeconomic conditions

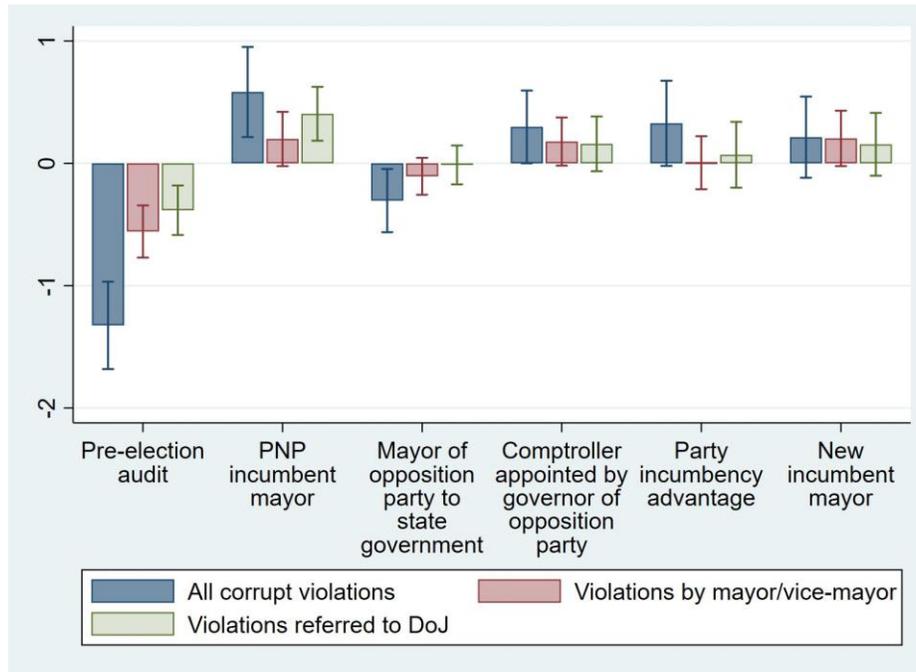
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<sup>25</sup> Since the person responsible for overseeing the audits, and of assigning resources and auditors to them is the Comptroller, we study if a Comptroller appointed by a governor of a different party than the mayor would lead to different levels of corruption than if they belong to the same political party. For example, would a Comptroller appointed by a PPD governor be more “thorough” on audits of a PNP municipality? This difference may be reflected on the levels of corruption in a municipality shown in an audit.

<sup>26</sup> We include in the regression models the number of municipal government reports, the number of municipal consortia reports issued, and the incumbent party's win margin in the previous election as additional controls, to capture additional heterogeneity in audit effort and the short-term political environment in the municipality.

of the municipality that are very persistent, such as household per capita income, poverty rates, or educational attainment levels of the population.<sup>27</sup>

**Figure 5: Audit Structure, Political Characteristics, and Corruption Levels: 1987-2014**



*Notes:* Coefficient estimates (bars) and 95 percent confidence intervals (whiskers) from OLS regressions; standard errors clustered at the municipality level. Each set of bars of a specific color represents the partial correlation estimates from a different regression for each of the three dependent variables: all corrupt violations; violations attributed to the mayor or vice-mayor, and violations referred to the DoJ. See Section 4.2 for a description of all additional control variables.

We report the partial correlation coefficient estimates for each one of the main explanatory variables, together with 95 percent confidence intervals, in Figure 5.<sup>28</sup> Consistent with our earlier work for the period up to 2005 (BCS 2016), we find that timely and foreseeable audits induce a significant short-term reduction in municipal corruption levels of 1.32 (66 percent) fewer reported corrupt violations in municipalities with timely audits relative to those whose audit reports were published after the election. We also find 0.56 (70 percent) fewer corrupt violations per report attributed to the mayor or vice-mayor, and 0.38 (47 percent) fewer violations per report referred to the Department of

<sup>27</sup> Using a different methodology with analogous OCPD municipal audits data, Segarra Alméstica (2010) includes these and other socio-economic measures as controls and find these are generally moderately correlated with municipal corruption levels. Their report conducts a thorough literature on socio-economic determinants of corruption.

<sup>28</sup> The graph was prepared using the *coefplot* command in Stata (see Jann 2014).

Justice (all significant at conventional confidence levels). This is strong evidence that there are important effects on electoral accountability and disciplining of the municipal audits program. Knowing that a report is likely to come out shortly before an election, municipalities improve their governance practices.<sup>29</sup>

To understand the mechanisms through which this may occur, we searched *El Nuevo Día*—arguably the most important national newspaper in Puerto Rico—for any news coverage of the municipal audit reports during the 2000 and 2004 election years (January 1st through election-day on the first Tuesday of November). In 2000, there were 127 news articles on OCPR municipal audit reports in 10 months of coverage relating to 37 municipalities. , whereas there were 35 news reports covering 22 municipalities in 2004. Most of the coverage was from press conferences by politicians themselves, in addition to news where the OCPR was the source. This meant that the information would be diffused in the campaign trail by speeches, press releases, and the media. Thus, OCPR audit reports became, in at least some races, part of the electoral campaign itself (Cámara-Fuertes and Bobonis 2015).

Results in Table 6 also allow us to examine whether municipal governments politically aligned with the party of the governor’s office are more or less likely to incur in acts of corruption. The higher-level government may transfer resources disproportionately to politically aligned municipalities: this might induce greater corruption levels through multiple mechanisms discussed in the literature.<sup>30</sup> These mayors may also perceive to be less electorally or judicially accountable if there were less oversight or more protection from higher levels of government. We find mixed evidence regarding this hypothesis: non-aligned municipalities exhibit 0.30 (25 percent) fewer reported corrupt violations than aligned ones ( $p$ -value = 0.021), but the pattern is not statistically robust (0.11 fewer corrupt violations attributed to municipal leaders (24 percent;  $p$ -value = 0.164).

We also find very suggestive evidence of higher reported corruption levels in municipalities in which the mayor is in the opposite party of the one that appointed the Comptroller in office at the time of the audit. The point estimates suggest that non-aligned municipalities of this alternative form exhibit 0.30 (25 percent) higher reported corrupt violations than aligned ones ( $p$ -value = 0.049). The

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<sup>29</sup> In Bobonis, Cámara-Fuertes, and Schwabe (2016), using data for the 1987-2005 period, we document that this improved governance is not sustained in subsequent terms.

<sup>30</sup> See Solé-Ollé and Sorribas-Navarro (2008), Brollo and Nannicini (2012), Timmons and Broid (2013), Corvalan, Cox, and Osorio (2018) for evidence of co-partisan bias in the allocation of intergovernmental transfers in Spain, Brazil, Mexico, and Chile, respectively. Borrella Más (2014) finds that politically aligned municipal governments in Spain exhibit higher levels of corruption than non-aligned ones, controlling for numerous other determinants.

differences are less precisely estimated but similar in proportional terms when we study corruption attributed to the municipal leadership and findings referred to the DoJ.<sup>31</sup> Among other competing explanations, this may be the result of the OCPR placing more auditing resources and effort on municipalities governed by a representative of the rival party.

There is a modest and statistically insignificant correlation of municipal corruption levels with (a) our measure of party incumbency advantage at the municipal level as well as with (b) an incumbent's seniority (whether he or she is in the first term in office).<sup>32</sup> There are competing forces that could help explain such moderate effects. For example, more political competition could help improve the selection of honest leaders or those with preferences congruent with those of constituents or induce stronger discipline and responsiveness among those elected incumbents.<sup>33</sup> On the other hand, party competition that is extraneous to an incumbent's performance while in office could limit an incumbent's expected time horizon in power. Although mayors with more seniority tend to be more competent than first term mayors (BCS 2016), they may engage in more corruption as there may be "learning by doing" in the establishment of spoils systems and patronage networks. On the other hand, incumbents in more competitive seats or in their first term may engage in corruption as their restraint may not improve their re-election prospects.

We examine the evidence regarding the gap in corruption levels between PNP and PPD municipal administrations. Estimates from the empirical model show that municipal governments under the control of mayors affiliated to the PNP exhibit higher levels of corruption when conditioning on numerous other political, economic, and administrative determinants of municipal corruption. The point estimate indicates that we observe 0.58 more findings of corruption per report in these administrations relative to administrations by PPD-affiliated mayors (a 56 percent increase in proportional terms;  $p$ -value = 0.002). A similar pattern emerges when examining findings referred to the DoJ: 0.40 more findings per report, a 98 percent difference in proportional terms ( $p$ -value < 0.001), and although somewhat less precisely estimated, a similar pattern emerges for corruption attributed to the top leadership (0.20 more findings per report, a 49 percent difference in proportional terms;  $p$ -value = 0.078). This is a robust stylized fact, given that our model essentially makes comparison across

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<sup>31</sup> The estimates of the gap using the findings attributed to the municipal leadership and those referred to the DoJ are 0.18 (40 percent;  $p$ -value = 0.075) and 0.16 (33 percent;  $p$ -value = 0.161), respectively.

<sup>32</sup> The relationship is similarly modest and imprecisely estimated if we alternatively use a linear control for the number of terms an incumbent mayor has been in office.

<sup>33</sup> See Besley (2006) and Olken and Pande (2012) for a detailed review of these arguments and a survey of the empirical evidence regarding the plausibility of these effects, respectively.

administrations of different political parties within the same municipality. This gap is also noticeable based on a comparison of the unadjusted difference.<sup>34</sup>We posit several possible explanations that are eminently speculative since we have none or insufficient data to examine these rigorously. A first possible explanation is related to structural aspects of the PNP and its political base that may induce higher levels of corruption, on average. For instance, the party may disproportionately attract politicians and bureaucrats more prone to engage in corruption, a political selection effect. The political agency literature argues that corruption may be more valuable for dishonest politicians or bureaucrats, or those with worse outside options in the labor market – those politicians of “lower quality” (Besley 2006; Brollo et al. 2013). If the party and voters disproportionately tend to select lower quality candidates for office, on average, this could partly explain the observed differences across administrations.

Another hypothesis is heterogeneity in the preferences and composition of the supporters of these two parties may induce these differences. For multiple reasons documented in the literature, constituents of higher socio-economic status tend to be less forgiving of corruption than those of lower status. Given that the PNP has traditionally garnered support from poorer and less-educated citizens—especially the urban poor—perhaps supporters of the PNP at the local level tend to be on average more forgiving of corruption than supporters of the PPD and this is reflected in the governance choices of incumbents. We do not have data to examine this hypothesis empirically, but others have shown qualitative evidence in favor of this composition of PNP supporters (e.g., Romero Barceló 1974; Benítez 1991; Quintero Rivera 1986).

We finally show suggestive evidence that additional socio-demographic and resource-related factors influence corruption levels in the short-run. However, these relationships are not significant in statistical terms once we condition on the multiple political factors. Specifically, the association between corruption and local government resource levels (budget size) predicts that an increase in \$100 million dollars in resources would increase corruption by 0.75 findings per report; however, the relationship is very imprecisely estimated ( $p$ -value = 0.92).<sup>35</sup> The estimated relationship with municipal population levels implies that an increase in 10,000 residents would increase reported corruption by 0.146 findings per report, a moderate and statistically insignificant relationship ( $p$ -value=0.16). These

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<sup>34</sup> See the discussion on corrupt violations, by electoral term and incumbent party at the municipal level (and Figure A2) in the Online Appendix for details.

<sup>35</sup> The point estimates of the correlation between findings attributed to the top leadership and municipal budgets (in millions of dollars) is 0.639, a large relationship but imprecisely estimated ( $p$ -value=0.22). The relationship reverses in sign for findings referred to the DoJ (point estimate = -0.311,  $p$ -value=0.59).

relationships are qualitatively similar in a comparison of unadjusted differences.<sup>36</sup> These results are consistent with the argument that macroeconomic processes are not sufficiently strongly linked to changes in the levels of corruption over time, in contrast with earlier work examining aggregate trends at the territorial level.<sup>37</sup> We conclude that the overall findings are broadly consistent with the view that corruption is strongly linked to political processes related to political competition and party alignment and, importantly, to the monitoring of public officials.

## 5. Discussion and Conclusion

Public corruption and patronage politics have been at the front and center of Puerto Rico's trajectory throughout the past century. Despite this history—and the broad public discussion regarding the characterization of Puerto Rico as a clientelist society—there has been limited scholarly work addressing this issue. Our study represents a step towards understanding aggregate patterns of public corruption in the territory – with a focus on municipal governments affairs. It is based on a unique longitudinal database of all 2,243 municipal audit reports carried out by the Office of the Comptroller of Puerto Rico throughout a sixty-four-year period, since its inception in 1952 until 2015.

We show that the most salient trends in public corruption at the local level broadly correspond to the three periods of fundamental economic and political change that altered governance practices in the territory. In addition, we perform a partial correlation analysis to sort out the relative relevance of competing determinants of this phenomenon. Through this analysis, we show that the patterns of corruption are broadly consistent with the view that it is strongly linked to political cleavages, and less consistent with the view that macroeconomic processes are strongly linked to these forms of misgovernance over time.

Our study of municipal corruption in Puerto Rico informs discussions regarding Puerto Rico's failure to sustainably develop into a non-clientelist, “successful” society.<sup>38</sup> Substantial research points

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<sup>36</sup> See the discussion on the relationship with municipal population levels and municipal government budgets (as well as Figures A3 and A4) in the Online Appendix for details.

<sup>37</sup> These findings stand in contrast with previous work examining the relationship of economic conditions across PR municipalities and the misuse of public resources. Using a different outcome variable, an index that incorporates both public corruption and waste, and a design that captures variation in the level of corruption (excluding municipality and time fixed effects), Segarra Alméstica (2010) identifies that the local unemployment rate as well as the municipal population's education attainment levels and poverty rates correlate with the outcome measure. She also shows that a comparable index at the state level is positively associated with the territory's business cycle.

<sup>38</sup> Clientelist societies are characterized by a pervasive prevalence of patronage and corruption networks; the dependence on social connections between privileged groups over the criterion of merit in all kinds of economic and political relations;

to the idea that in captured democracies, elected politicians are neither accountable nor responsive to their constituencies (e.g., Lizzeri and Persico 2001; 2004; Keefer 2007; Stokes et al. 2013).<sup>39</sup> As shown empirically in other contexts, clientelist machines curtail the effective delivery of public services and establish patron-client insurance arrangements with citizens (i.e., providing them contingent transfers in the event they experience hardship) in exchange for their electoral support. This gives clientelist machines an electoral advantage as well as the ability to engage corruption and rent seeking while maintaining sufficiently broad electoral support (Anderson, Francois and Kotwal 2015; Bobonis et al. 2018; 2019). These clientelist politics, pervasive in Puerto Rico throughout the era of PPD hegemonic dominance (García-Colón 2006), can help explain the high levels of corruption during that period.

Following a temporary fall in corruption levels during the advent of political competition in the late 1960s, patronage and public corruption has risen again in the long era of intense electoral competition between the PPD and PNP. Political polarization has increased and the organization of sociopolitical life along group identity lines – with strong allegiances to these political parties that partly reflect preferences regarding the territory’s political status – has solidified. One can argue that this divided society, where the distribution of benefits to groups organized along such lines is of paramount interest to constituents, has increasingly been subject to the “politics of fear” (Padró-i-Miquel 2007). In such societies, political leaders can be corrupt and still receive the group's support because replacing them increases the chances that the opposition will gain control of government. If all political parties or groups are subject to similar concerns, the fear of another political group coming to power is heightened since they too could be represented by a corrupt representative. This may result in inferior political leaders ascending to power no matter which group they represent and extracting enormous resources from the economy and even from their own supporters (Padró-i-Miquel 2007; Burgess et al. 2015; Anderson and Francois 2020). This is a plausible rationalization of the underlying forces that have led to of a decay in the quality of government in the territory, as argued by Pantojas García (2015; 2021).

Our study also confirms the important role played by the OCPR’s monitoring apparatus in countering these forms of misgovernance. Despite the prevalence of intense party-specific political

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a high degree of dysfunctionality and inefficiency of the state apparatus and bureaucracy; and capture of government by elites and special interest groups for their private benefit as opposed to the public’s welfare (Acemoglu and Robinson 2012; Fukuyama 2014).

<sup>39</sup> See Piattoni (2001), Kitschelt and Wilkinson (2007), Baland and Robinson (2008), Bardhan and Mookherjee (2012), Robinson and Verdier (2013), Stokes et al. (2013), and Anderson, Francois, and Kotwal (2015) as examples of the literature characterizing clientelist politics and its consequences.

loyalties, technocratic anti-corruption efforts are effective at reducing corruption, particularly in more competitive jurisdictions (BCS 2016). As we have also shown in earlier work, information regarding corruption is processed across ideological loyalties in Puerto Rico in a manner that enables voters to sanction and hold corrupt officials accountable. These accountability efforts are thus effective in spite of the prevalence of high electoral loyalties—as proxied by non-competitive elections—and of high ideological affinity—as indicated by correspondence between the governor’s and the mayor’s party—which appear to influence the proclivity to engage in corruption among elected municipal officials. While clientelism exists and appears linked to political loyalty and to corruption, it does not fully determine voters’ behavior.

We conclude with an overarching challenge posed by citizens, scholars, and policymakers alike: the perceived limited effectiveness of the public’s ability to mitigate clientelism and corruption by the political class. In a recent interdisciplinary review of the literature on what works to reduce corruption, Gans Morse et al. (2018) conclude with the recognition that when corruption is a systemic problem, addressing it requires broad, large-scale, comprehensive efforts instead of piecemeal or individual-level solutions. In a more critical review, Prasad, Martins da Silva, and Nickow (2019) argue that systems of social norms considered moral according to certain criteria (i.e., taking care of one’s kin) contribute to the pervasiveness of political corruption and limit the effectiveness of even broad anti-corruption efforts. Future research will benefit from a more in-depth examination of these issues and from the detailed study of the institutional frameworks that may be necessary to achieve stronger social and political development in the territory.

## References

- Acemoglu, Daron, and James A Robinson (2012). *Why Nations Fail: The Origins of Power, Prosperity and Poverty* (1st). 1st ed. New York: Crown, 529.
- Agrait, Luis E. (1972). “Las elecciones de 1968 en Puerto Rico.” *Revista de Ciencias Sociales*, 16(1), 17-60.
- Anderson, Robert W. (1965). *Party Politics in Puerto Rico*. Stanford: Stanford University Press. 269pp.
- Anderson, Robert W. (1973). “Puerto Rican Politics: At the Crossroads or in a Rut? Reflections on the Elections of 1972.” *Caribbean Studies*, 13(2), 5-18.
- Anderson, Siwan, Patrick Francois, and Ashok Kotwal (2015). “Clientelism in Indian villages.” *American Economic Review*, 105(6), 1870-1816.

- Anderson, Siwan, and Patrick Francois (2020). “Political Quotas and Governance.” Working paper, Vancouver School of Economics.
- Baland, Jean-Marie and James A. Robinson (2008). “Land and Power: Theory and Evidence from Chile” *American Economic Review*, 98(5), 1737-1765.
- Banfield, Edward C. (1958). *The Moral Basis of a Backward Society*. New York: Free Press.
- Bardhan, Pranab (2002). “Decentralization of Governance and Development.” *Journal of Economic Perspectives*, 16(4), 185-205.
- Bardhan, Pranab, and Dilip Mookherjee (2012). “Political Clientelism and Capture: Theory and Evidence from West Bengal, India.” UNU-Wider Research Paper, 97.
- Barreto, Amílcar A., and D. Munroe Eagles (2000). “Modelos ecológicos de apoyo partidista en Puerto Rico, 1980-1992.” *Revista de Ciencias Sociales*, 9(1), 135-165.
- Bayrón Toro, Fernando (1989). *Elecciones y Partidos Políticos de Puerto Rico (1809-1988)*, Mayagüez: Editorial Isla, Inc., 1977.
- Benítez, Celeste (1991). ¿Cómo votaron los caseríos de San Juan? *Homines*, 15(2)-16(1), 102-105.
- Besley, Timothy (2006). *Principled Agents? The Political Economy of Good Government*. Oxford, UK: Oxford University Press.
- Besley, Timothy, and Torsten Persson (2011) *Pillars of Prosperity: The Political Economics of Development Clusters*. Princeton, NJ: Princeton University Press.
- Bobonis Gustavo J., Luis Raúl Cámara-Fuertes, and Rainer Schwabe (2016). “Monitoring Corruptible Politicians.” *American Economic Review*, 106(8), 2371-2405.
- Bobonis, Gustavo J., Paul J. Gertler, Marco Gonzalez Navarro, and Simeon Nichter (2018). “Vulnerability and Clientelism.” NBER Working Paper #23589.
- Bobonis, Gustavo J., Paul J. Gertler, Marco Gonzalez Navarro, and Simeon Nichter (2019). “Government Transparency and Political Clientelism: Evidence from Anti-Corruption Audits in Brazil.” CAF Working Paper #2019/05.
- Bobonis, Gustavo J., Mark Stabile, and Leonardo Tovar (2020). “Military Training Exercises, Pollution, and their Consequences for Health.” *Journal of Health Economics*, 73, 102345.
- Borrell Mas, Miguel Ángel (2015). “Partisan Alignment and Political Corruption: Theory and Evidence from Spain.” Universidad de Alicante Working Paper WP-AD 2015-07.

- Brollo, Fernanda, and Tommaso Nannicini (2012). “Tying Your Enemy's Hands in Close Races: The Politics of Federal Transfers in Brazil.” *American Political Science Review*, 106(4), 742-761.
- Brollo, Fernanda, Tommaso Nannicini, Roberto Perotti, and Guido Tabellini (2013). “The Political Resource Curse.” *American Economic Review*, 103(5), 1759-1796.
- Burgess, Robin, Remi Jedwab, Edward Miguel, Ameet Morjaria, and Gerard Padró-i-Miquel (2015). “The Value of Democracy: Evidence from Road Building in Kenya.” *American Economic Review*, 105(6), 1817-1851.
- Cabán, Pedro A. (2002). “Puerto Rico: State Formation in a Colonial Context.” *Caribbean Studies*, 30(2), 170-215.
- Cámara-Fuertes, Luis Raúl (2004). *The Phenomenon of Puerto Rican Voting*. Gainesville, FL: University of Florida Press.
- Cámara-Fuertes, Luis Raúl (2010). *La Ideología de los Legisladores Puertorriqueños*. Publicaciones Puertorriqueñas.
- Cámara-Fuertes, Luis Raúl, and Gustavo J. Bobonis (2015). “Challenging Corrupt Politicians? Audits, Electoral Selection, and Accountability in Municipal Elections.” Working paper, University of Toronto.
- Caraballo Cueto, José (2020). “The Economy of Disasters? Puerto Rico Before and After Hurricane Maria.” *CENTRO Journal*, forthcoming.
- Caraballo-Cueto, José, and Juan Lara (2018). “Deindustrialization and Unsustainable Debt in Middle-Income Countries: The Case of Puerto Rico.” *Journal of Globalization and Development*, 8(2), 20170009.
- Colonnelli, Emanuele, Jorge Gallego, and Mounu Prem (2020). “What Predicts Corruption?” Working paper, Universidad del Rosario.
- Comisión de Derechos Civiles (1993). *Informe sobre discrimen político en el empleo público en Puerto Rico*. <https://www.cdc.pr.gov/InstitutoDeEducacion/RecursosEducativos/Informes/Informe%20El%20Discrimen%20Pol%C3%ADtico%20en%20el%20Empleo%20P%C3%BAblico%20en%20Puerto%20Rico%201993-CDC-030.pdf>
- Cordero Nieves, Yolanda (2012). “El discrimen político en el empleo público.” in Colón-Morera, José J., and Idsa E. Alegría-Ortega (eds.). *Puerto Rico y los derechos humanos: una intersección plural*. San Juan: Ediciones Callejón, pp.349-368.

- Cosme Morales, Joel. A. (2017). *Partidos Políticos, Sistemas Electorales y Puerto Rico*. CreateSpace Independent Publishing Platform.
- Clark, Truman R. (1973). "Educating the Natives in Self-Government": Puerto Rico and the United States, 1900-1933." *Pacific Historical Review*, 42(2), 220-233.
- Duany, Jorge (2017). *Puerto Rico: What Everyone Needs to Know*. Oxford, UK: Oxford University Press.
- Enchautegui Román, María E. (2010). "Modalidades de la corrupción en Puerto Rico: Perspectivas de los empleados públicos." *Proyecto sobre el mal uso de los recursos del gobierno*. Unidad de Investigaciones Económicas, Universidad de Puerto Rico.
- Finan, Frederico, Benjamin A. Olken, and Rohini Pande (2017). "The Personnel Economics of the Developing State." Chapter 6 in Banerjee, Abhijit V. and Esther Duflo (eds.) *Handbook of Economic Field Experiments*, North-Holland, Volume 2, Pages 467-514.
- Fukuyama, Francis (2014). *Political Order and Political Decay: From the Industrial Revolution to the Globalization of Democracy*. Farrar, Straus, & Giroux, pp. 658.
- Gans Morse, Jordan, Marina Borges, Alexey Makarin, Theresa Mannah-Blankson, Andre Nickow, and Dong Zhang (2018). "Reducing Bureaucratic Corruption: Interdisciplinary Perspectives on What Works." *World Development*, 105, 171-188.
- García-Colón, Ismael (2006). "Playing and Eating Democracy: The Case of Puerto Rico's Land Distribution Program, 1940s-1960s." *CENTRO Journal*, 18(2), 167-189.
- García-Colón, Ismael (2009). *Land Reform in Puerto Rico: Modernizing the Colonial State, 1941-1969*. Gainesville, FL: University Press of Florida.
- Harris, Dona (2007). "Bonding Social Capital and Corruption: A Cross-National Empirical Analysis." Working paper, University of Cambridge.
- Hernández Acosta, Javier J. (2019). *Encuesta Mundial de Valores para Puerto Rico: 2018*. Instituto de Estadísticas de Puerto Rico.
- Jann, Ben (2014). "Plotting regression coefficients and other estimates." *The Stata Journal*, 14(4): 708-737.
- Jiménez, Fernando, Manuel Villoria, and Mónica García Quesada (2012). "Badly Designed Institutions, Informal Rules and Perverse Incentives: Local Government Corruption in Spain." *Lex Localis Journal of Local Self Government*, 10(4), 363-381.

- Keefer, Phillip (2007). "Clientelism, Credibility, and the Policy Choices of Young Democracies." *American Journal of Political Science*, 51(4), 804-821.
- Kitschelt, Herbert, and Steven I. Wilkinson (2007). *Patrons, Clients and Policies: Patterns of Democratic Accountability and Political Competition*. New York, NY: Cambridge University Press.
- Lizzeri, Alessandro, and Nicola Persico (2001). "The Provision of Public Goods under Alternative Electoral Incentives." *American Economic Review*, 91(1), 225-239.
- Lizzeri, Alessandro, and Nicola Persico (2004). "Why Did the Elites Extend the Suffrage? Democracy and the Scope of Government, with an Application to Britain's 'Age of Reform'." *Quarterly Journal of Economics*, 119(2), 707-765.
- Magaloni, Beatriz (2006). *Voting for Autocracy: Hegemonic Party Survival and its Demise in Mexico*. Cambridge, MA: Cambridge University Press.
- Meléndez Vélez, Edgardo (1998). *Partidos, Política Pública y Status en Puerto Rico*. San Juan, PR: Ediciones Nueva Aurora.
- Mora, Marie T., Alberto Dávila, and Havidán Rodríguez (2018). *Population, Migration, and Socioeconomic Outcomes among Island and Mainland Puerto Ricans: La Crisis Boricua*. Lanham, MD: Lexington Books.
- Nannicini, Tommaso, Andrea Stella, Guido Tabellini, and Ugo Troiano (2013). "Social Capital and Political Accountability." *American Economic Journal: Economic Policy*, 5(2): 222-250.
- Nolla-Acosta, Juan José, and Elizabeth Silén-Afanador (2019). *Guía de Resultados y Estadísticas Electorales de Puerto Rico, 1899-2017*. Lulu.com, Raleigh, NC.
- Office of the Comptroller, Commonwealth of Puerto Rico. "Misión, Visión y Valores." <https://www.ocpr.gov.pr/nuestra-mision-vision-y-valores/> (accessed November 18, 2020).
- Olken, Benjamin A., and Rohini Pande (2012). "Corruption in Developing Countries." *Annual Review of Economics*, 4, 479-509.
- Pabón, Milton (1972). *La cultura política puertorriqueña*. Rio Piedras: Editorial Yagüey. 314pp.
- Padró-i-Miquel, Gerard (2007). "The Control of Politicians in Divided Societies: The Politics of Fear." *Review of Economic Studies*, 74(4), 1259-1274.
- Pantojas-García, Emilio (2015). *Crónicas del colapso: economía, política y sociedad de Puerto Rico en el siglo veintinueve*. San Juan, PR: Ediciones Callejón.
- Pantojas-García, Emilio (2021). "Puerto Rico's Colonial Legacies and Neocolonial Constellations: Economy, Society and Polity." In Burchardt, Hans-Jürgen, and Johanna Leinius (eds.), (*Post-*

- )Colonial Archipelagos – Comparing the Legacies of Spanish Colonialism in Cuba, Puerto Rico, and the Philippines*". Ann Arbor: University of Michigan Press.
- Pérez Chiqués, Elizabeth H. (2018). *Patronage as a System of Insiders and Outsiders: Lessons from the Commonwealth of Puerto Rico*. Doctoral Dissertation, State University of New York at Albany.
- Piattoni, Simona (2001). *Clientelism, Interests, and Democratic Representation: The European Experience in Historical and Comparative Perspective*. New York, NY: Cambridge University Press.
- Prasad, Monica, Mariana Borges Martins da Silva, Andre Nickow (2019). "Approaches to Corruption: A Synthesis of the Scholarship." *Studies in Comparative International Development*, 54(1), 96-132.
- Putnam, Robert D. (1993). *Making Democracy Work: Civic Traditions in Modern Italy*. Princeton: Princeton University Press.
- Putnam, Robert D. (2000). *Bowling Alone: The Collapse and Revival of American Community*. New York: Simon & Schuster.
- Quintero Rivera, Angel G. (1986). *Conflictos de clase y política en Puerto Rico*. Río Piedras: Ediciones Huracán.
- Report of the Military Governor of Porto Rico on Civil Affairs. Puerto Rico. Military Governor, (1899-1900 : George W. Davis).
- Rivera, Ángel Israel, Ana Irma Seijo, and Jaime W. Colón (1991). "La Cultura Política y la Estabilidad del Sistema de Partidos en Puerto Rico." *Caribbean Studies*, 24(3/4), 175-220.
- Robinson, James A., and Thierry Verdier (2013). "The Political Economy of Clientelism." *The Scandinavian Journal of Economics*, 115(2), 260-291.
- Romero Barceló, Carlos (1974). *La Estadidad es para los pobres*. San Juan: Partido Nuevo Progresista.
- Santana Rabell, Leonardo (1993). "Introducción: Fulgor y Decadencia de la Administración Pública en Puerto Rico." *Revista de Administración Pública* 25, 1-24.
- Segarra Alméstica, Eileen V. (2010). "Factores que inciden en el mal uso de los recursos del gobierno y la corrupción en Puerto Rico." *Proyecto sobre el mal uso de los recursos del gobierno*. Unidad de Investigaciones Económicas, Universidad de Puerto Rico.
- Segarra Alméstica, Eileen V., and María E. Enchautegui Román (2010). "Patrones y tendencias en el mal uso de fondos públicos en Puerto Rico." *Proyecto sobre el mal uso de los recursos del gobierno*. Unidad de Investigaciones Económicas, Universidad de Puerto Rico.

- Seligson, Mitchell A. (2002). "The Impact of Corruption on Regime Legitimacy: A Comparative Study of Four Latin American Countries." *Journal of Politics*, 64(2), 408-433.
- Stigler, George (1971). "The Theory of Economic Regulation." *Bell Journal of Economics and Management Science*, 2(1): 3–21.
- Stokes, Susan C., Thad Dunning, Marcelo Nazareno, and Valeria Brusco (2013). *Brokers, Voters, and Clientelism: The Puzzle of Distributive Politics*. New York City: Cambridge University Press.
- Timmons, Jeffrey F., and Daniel Broid (2013). "The Political Economy of Municipal Transfers: Evidence from Mexico." *Publius: The Journal of Federalism*, 43(4), 551–579.
- Toro, Harold J. (2014). "Economic change and social stasis: Puerto Rico as a case study of stratification and development." *Research in Social Stratification and Mobility*, 36, 101-119.
- Toro, Harold J. (2017). "Legacies of opportunity and economic integration: Path dependent labor force participation in Puerto Rico's development." *Research in Social Stratification and Mobility*, 49, 47-60.
- Villaronga, Gabriel (2010). "Constructing Muñocismo: Colonial Politics and the Rise of the PPD, 1934-1940." *CENTRO Journal*, 22(2), 173-197.
- Wachs, Johannes, Taha Yasseri, Balázs Lengyel, and János Kertés (2019). "Social capital predicts corruption risk in towns." *Royal Society Open Science*, 6(4), 1-13.
- Wells, Henry (1968). *The Modernization of Puerto Rico: A Political Study of Changing Values and Institutions*. Cambridge: Harvard University Press.