

Fiscal conditions for multiparty elections in dictatorships

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Abstract

Multiparty elections can reduce the likelihood of conflict and help dictators secure their rule, but when does a dictator create electoral institutions? Existing research finds that one of the major reasons regimes introduce multiparty elections is to gain information about opposition demands. This article builds on that argument to explain that a regime's finances determine whether or not it is able to benefit from creating electoral institutions. Dictators use the revenue of the regime to invest in different means of deterring opposition rebellion. A regime's first priority is to build repressive capacity, after which it invests in public spending to buy the support of its winning coalition. Regimes only benefit from multiparty elections when they have sufficient revenue to fund repressive capacity but lack the finances to also buy regime security through massive public spending. Low revenue regimes cannot benefit from elections and high revenue regimes do not need elections to help secure their rule. I test the implications of the argument for regime spending and the creation of multiparty electoral institutions using a global sample of dictatorships between 1972-2014. The results of the hypothesis tests indicate that as revenue increases regimes decrease their shares of spending on repressive capacity but increase shares of spending on the public. The results also indicate the probability that a regime introduces elections rises as revenue increases from a low level, but the probability declines as revenue increases from a high level. The study builds upon the literature for how regime resources and state capacity influence authoritarian strategies of political survival. The findings for spending patterns are consistent with recent research on late modern regimes, and the results for the emergence of electoral institutions are consistent with research that finds dictators must have sufficient resources to survive holding elections.

Keywords: repression, political institutions, public finance, authoritarianism, state-building

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Why do some dictatorships introduce multiparty elections while others remain closed? Elections benefit a dictator's security in office by improving the regime's information about opposition demands (Cox, 2009; Herron, 2011; Little, 2012) and can help a dictator manipulate public opinion through economic incentives (Seeberg, 2018b; Higashijima, 2022). But not all dictatorships have created electoral institutions (Wilson et al., 2022). Regimes that have introduced multiparty elections are diverse regionally, geopolitically, temporally, and economically. Dictatorships which are closed to multiparty elections currently exist in low income and high income countries, in Western allies and non-allies, and occur in multiple regions of the world. What explains which regimes introduce elections and which regimes remain closed?

A robust literature explains why dictators introduce elections but this large literature has mostly overlooked explaining which dictatorships create electoral institutions. Elections in dictatorships are an arena that are biased towards the regime but allow for competition from the opposition (Schedler, 2013). Dictators create electoral institutions to help resolve distributional conflicts (Magaloni, 2008; Blaydes, 2010; Cheibub & Hays, 2017), institutionalize patronage systems (Lust-Okar, 2004, 2006), and possibly commit the dictator to public policy (Hong & Wong, 2020) though constraints on executive power are often due to other types of institutions between the dictator and regime elites (Wright, 2008; Svobik, 2009; Meng, 2020; Paine, 2022). Elections can also help dictators survive in office in the long run, if they can survive in the short run (Knutsen, Nygård & Wig, 2017). Opposition party institutionalization in particular can help stabilize a regime (Kim, Bernhard & Hicken, 2022). The literature explains how elections benefit a dictator's security but does not necessarily explain which regimes create electoral institutions.

This article argues that a dictatorship's revenue determines the regime's spending policies and when the regime creates electoral institutions. The argument relates revenue, budget allocations, and the emergence of elections in a two-step explanation. The first step explains that dictators spend the regime's revenue to prioritize the repressive capacity of the state before spending to buy the support of the regime's winning coalition. The second step explains that a dictator introduces elections when they have spent sufficiently on repressive capacity but lack additional revenue to placate the opposition through public spending.

The article tests hypotheses across both steps in the argument for a comprehensive empirical investigation of the process. Estimation by ordinary least squares with country fixed effects test the hypotheses for spending policies using data from 1980-2014. Estimation by complementary log-log and linear probability models with two-way fixed effects test event history data for when closed dictatorships create multiparty electoral institutions between 1972-2014. The results of the tests are consistent with the implications of the argument.²

This study contributes to new findings regarding how contemporary dictators strategically use electoral institutions (Gandhi & Lust-Okar, 2009; Simpser, 2013; Luo & Rozenas, 2018; Chang & Higashijima, 2023). In particular, the explanation builds on a few seemingly competing arguments

² The results are also robust to a variety of specifications. See the Online appendix for details.

regarding when dictators introduce elections. Previous studies have argued that dictators introduce elections when they are under threat of losing office (Gandhi, 2008) especially when the threat from the opposition is nonviolent (Kim, 2017). Other studies suggest that elections emerge if economic conditions enable the dictator to control the opposition (Solt, 2012; Miller, 2017). These arguments may seem to be competing, but this article identifies the fiscal conditions for when a dictator is under threat and also when a dictator will be able to use elections to promote their survival in office. Dictators are threatened when they lack the finances to simply buy-off the opposition. But dictators must have a repressive capacity sufficient to survive and benefit from elections. The article explains that these conditions occur according to the regime's revenue because of the dictator's incentives for budget allocations.

Additionally, even though this is a study of contemporary authoritarianism, the argument for the development of regime spending relates to a long literature in historical political economy. Major questions in that literature include how the development of regime finance impacted political institutions (Stasavage, 2011; Vogler, 2019), and how political institutions have improved regime finance (Schultz & Weingast, 2003; Stasavage, 2003; Dincecco, 2011; Mitchell & Yin, 2022). The budget allocation argument and findings for contemporary regimes in this article are consistent with observed patterns of spending in late modern regimes (Mitchell, 2022), which suggests a historically persistent process (Abad, Maurer et al., 2021).³

The purposes of elections in dictatorships

Dictators introduce elections as a tool of regime survival (Gandhi, 2008; Gandhi & Lust-Okar, 2009). Dictators use elections for different purposes including co-opting the opposition (Lust Okar, 2004, 2006) and information transmission which can project the strength of the regime or provide the regime with useful information about demands in society (Little, 2017). The purposes of elections differ by the type of information that the election is intended to convey. These purposes, as well as how dictators implement the elections, differ across authoritarian regime types, state capacities, and regime finances.

In the literature, dictatorships that hold elections are named electoral authoritarian regimes (Schedler, 2006), competitive authoritarian regimes (Levitsky & Way, 2010), hybrid regimes (Karl, 1995), and electoral autocracies (Lührmann, Tannenberg & Lindberg, 2018). Electoral authoritarian regimes have been further distinguished as hegemonic regimes when the elections do not allow contestation of the government, and competitive regimes when elections allow a minimal degree of contestation (Levitsky & Way, 2002; Schedler, 2002). Scholars classify electoral autocracies as dictatorships that hold multiparty elections which are not free or fair, as opposed to closed dictatorships which hold one party elections, no party elections, or no elections at all (Boese et al., 2021; Wilson et al., 2022).

There is considerable conceptual overlap in these definitions despite their differences. The terms hegemonic and competitive are definitions based on the character or degree of contestation while the closed versus electoral autocracy definitions are based on whether the elections allow multiple parties

³ See also Lindert (2004), Mann (2012), and Ansell & Lindvall (2020).

or not. Despite these differences in definitions, closed dictatorships with one or no party elections are more conceptually similar to hegemonic regimes while electoral autocracies with multiparty elections are more conceptually similar to competitive electoral authoritarian regimes.

The scope of this article focuses on the concepts of closed dictatorship and electoral autocracy. Multiparty elections in electoral autocracies may be partially competitive but are not free or fair because regimes may use repression, fraud, and limitations on political rights in order to bias elections in favor of the government. The emergence of multiparty elections in dictatorships is the phenomenon that this article seeks to explain. Before attempting an explanation of transitions from closed dictatorships to electoral autocracies, we must have a firm understanding of the purposes of elections in dictatorships.

Regimes utilize the information provided by elections for different purposes. Closed and hegemonic electoral regimes are more likely to utilize elections as a means of signaling to the public that the regime maintains overwhelming support. To this end, these regimes tend to use excessive and blatant electoral manipulation (Simpser, 2013). These regimes are also more likely to use elections for co-optation rather than policy responsiveness (Miller, 2015b). Alternatively, electoral autocracies and competitive electoral regimes can gain information about demands from the public and opposition in order to better understand threats to the regime and to subsequently adapt government policy to more efficiently maintain regime security through budget allocations (Blaydes, 2010; Higashijima, 2022).

While authoritarian elections can be useful for improving the security of the regime, not all regimes are able to take advantage of these benefits. Regimes with higher state capacities can use the country's bureaucracy to manipulate voting and thereby use elections to maintain stability (Seeberg, 2014, 2018b, 2021). Regimes can also influence electoral outcomes through economic controls, such as by economic regulations and natural resources (Seeberg, 2018a,b), as well as by distributing regime finances (Higashijima, 2022).

A common way for governments to maintain their winning coalitions is through the allocation of government budgets (Bueno de Mesquita et al., 2003). Multiparty regimes have an advantage in using elections to obtain these benefits because allowing partial competitiveness enables the public and opposition to communicate their preferences. The transmission of information about voter preferences can be beneficial for the regime to more efficiently allocate the budget across both patronage and public goods. Elections support clientelist networks in which voters are dependent on the regime and the regime allocates patronage to their supporters (Magaloni, 2006). But not all budget allocations are associated with patronage. Authoritarian elections can also lead to more spending on public goods when the regime seeks to gain public approval (Miller, 2015a,b).

It is clear from the literature that dictatorships can use elections for different purposes, and the ability for regimes to utilize elections differs by regime finance and state capacity. What is less clear is which regimes introduce multiparty electoral institutions. The next section explains how dictators allocate their budgets and when they allow multiparty elections according to their regimes' revenue.

Fiscal conditions for multiparty elections in dictatorships

The argument explains that when dictators create multiparty electoral institutions depends on the revenue and spending of the regime. The argument proceeds in two steps. The first step of the argument explains how regimes allocate their budgets across spending on repressive capacity and buying-off their winning coalitions through public spending. The second step of the argument explains that dictators introduce multiparty elections when they have high repressive capacity but low public spending. Taken together, regime revenue predicts both the development of regime budgets as well as the emergence of multiparty elections in dictatorships. The following provides a synopsis of the whole argument before proceeding to explain each portion of the argument in greater detail.

A regime allocates its budget to deter opposition rebellion. A regime first prioritizes spending on the repressive capacity of the state. As revenue increases, the regime allocates more of its budget on buying-off the public and opposition. Taken together, as the regime's revenue increases then the proportion of the total budget spent on repressive capacity decreases and the proportion spent on the winning coalition increases. This first step of the argument uses revenue to predict budget allocations, which then create the conditions under which elections emerge.

Elections provide information about how the dictator can better allocate the budget to maintain regime stability. A low-revenue regime is unable to utilize elections to maintain its security in office because it lacks the repressive capacity to survive elections and it has insufficient public spending to use elections to help buy-off a winning coalition. A high revenue regime has high repressive capacity and high public spending which means it does not need to implement elections to maintain office. A middle-revenue regime has high repressive capacity but lacks the financial resources to easily buy-off its winning coalition. These middle revenue regimes benefit from elections because they have repressive capacity sufficient to survive elections and insufficient public spending to simply buy-off the opposition. These middle-revenue regimes introduce multiparty elections to gain information about how to best utilize their limited public spending.

Dictators structure spending to secure the regime

The first step of the argument explains how a dictator determines spending policies in order to secure their survival in office. A dictator seeks policies that will maximize their security by deterring a rebellion from the opposition because they are often jailed or killed after leaving office (Escribà-Folch, 2013; Albertus & Menaldo, 2014). To understand the policies a dictator may take to deter rebellion, we must first consider why an opposition rebels. The opposition's recourse to the authoritarian regime is to fight a rebellion. The opposition has less incentive to fight when what they are getting from the status quo increases compared to what they could be getting from rebellion (Gurr, 1970). When the opposition does not revolt, they enjoy the public spending the dictator provides. But if the opposition rebels and wins, they obtain the spoils of controlling the government.

Therefore, dictators can deter rebellion either by making a rebellion less likely to succeed or by increasing the opposition's value of the status quo. The dictator has two spending policy options to deter rebellion. They can spend on the repressive capacity of the regime to decrease the likelihood that a revolt succeeds, or they can spend to maintain the support of their winning coalition. Either policy reduces the incentives for the opposition to rebel. These carrot and stick policies have recently been

cogently incorporated into a single concept of political control (Hassan, Mattingly & Nugent, 2022). In that regard, this portion of the argument is a logic of political control for a regime's spending decisions.

Spending on repressive capacity deters mobilization by decreasing the opposition's probability of winning a rebellion and makes rebellion more costly. The purpose of spending on repressive capacity is for domestic security and to deter opposition mobilization by punitive threats. Police are typically a regime's primary means of repression, but a country's military becomes involved when an opposition rebels (Svolik, 2013). Spending on repressive capacity increases the threat of repression, but not necessarily the use of repression. A state's ability to repress an opposition is a necessary condition for the successful use of repression, but the argument does not explain when a regime must resort to using repression. Instead, the argument explains spending on repressive capacity, which allows the regime to threaten the opposition with the use of repression.

Spending to maintain a winning coalition can also deter rebellion by positive inducements rather than by coercion. This form of spending can include both patronage for specific regime supporters as well as public goods which benefit everyone. Dictators strategically target patronage spending to constituents and opposition groups to increase their own security in office (Bueno de Mesquita et al., 2003; Magaloni, 2006; Higashijima, 2022). Dictators also increase spending on public goods according to electoral signals (Miller, 2015a,b; Little, 2017). Moreover, patronage and public goods spending are not always distinct. While schools, hospitals, and military bases can provide public goods of education, health, and security, the geographic allocation of spending on these institutions can occur through clientelist networks. Since both patronage and public goods can be beneficial for a regime to maintain a winning coalition, the present argument does not distinguish between patronage and public goods.⁴ The argument refers to both of these types of spending collectively as public spending.

The dictator must determine the levels of spending on repressive capacity and the public that will secure the regime. A dictator must first prioritize spending on repressive capacity because without a coercive threat to deter rebellion, an opposition can easily overthrow the regime. This conforms to arguments that a government's first priority is to create a preponderance of power through a monopoly on the use of violence (Hobbes, 1904; Tilly, 1992; Bates, 2001). This is also consistent with the Machiavellian view that a ruler should seek to be both feared and loved, but that being feared is of primary importance (Viroli, 1992). Repression is of such primary importance to regime security that it was the original purpose of developing fiscal capacity (Dincecco, Federico & Vindigni, 2011).

Dictators initially spend on the state's repressive capacity, but each additional unit spent on repressive capacity has a decreasing marginal benefit. This means each unit spent provides an additional security benefit, but the next unit spent is a little less effective than the prior unit. For instance, if a hypothetical regime has a police force of 1,000 then adding one additional police officer would provide a greater marginal benefit than if the police force were 1,000,000. The cost of the additional officer would be the same across the two hypothetical regimes but the benefit of an additional officer is greater when the total police force is smaller. This is what is meant by the phrase,

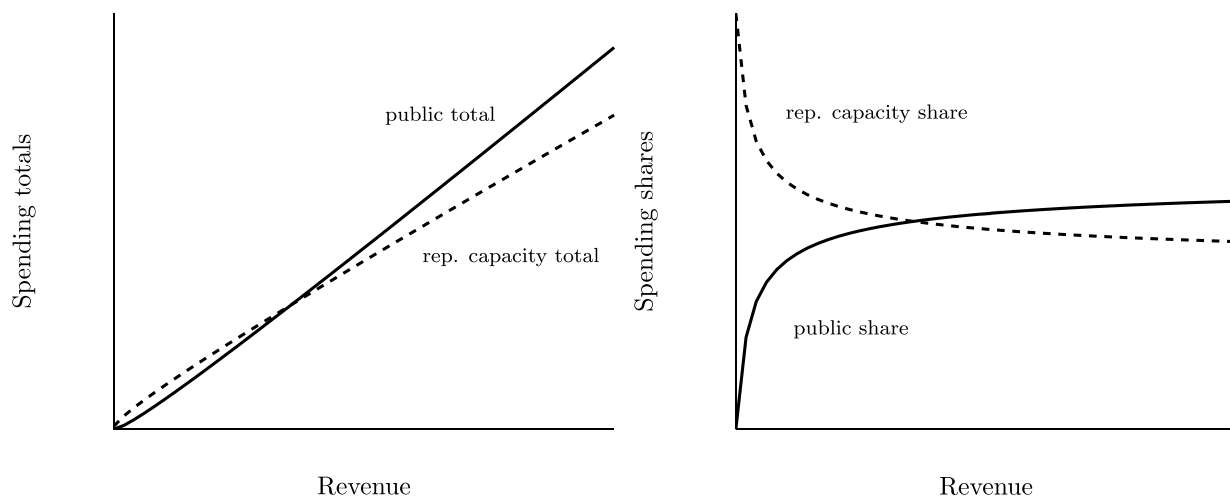
⁴ The argument does not attempt to explain the differences in patronage versus public goods spending in dictatorships.

an increase in spending on repressive capacity has a decreasing marginal benefit.

Since repressive capacity has a decreasing marginal benefit, eventually spending another unit to coerce compliance will provide the dictator with a lower marginal benefit than spending that unit on the winning coalition. This is why solely using only a threat of repression can be less effective than jointly offering resources for regime supporters while threatening repression to detractors. At higher levels of revenue, the dictator also spends on the public in order to gain their quasi-voluntary compliance (Levi, 1988).

Similarly, public spending has decreasing marginal returns which means that both spending on repressive capacity and the public are always increasing along with revenue. However, spending on repressive capacity and the public as proportions of total revenue decrease and increase, respectively. A regime spends a much greater share of its budget on repressive capacity when it has low revenue. As the budget grows the share of repressive capacity spending decreases and the share of public spending increases, even though the total amounts of spending on repressive capacity and the public each increase. This explains why a poor country such as North Korea predominately spends on repressive capacity with very low public spending, and why China can spend heavily on the public even though it also spends massively on repressive capacity.

Figure 1 provides graphic depictions of levels and proportions of spending for each category according to the argument. The level of spending on repressive capacity and the public each monotonically increase with revenue, as indicated in Subfigure 1a. Repressive capacity spending is initially greater as a proportion of total spending, but decreases with revenue as shown in Subfigure 1b. The opposite is true of public spending. Public spending as a proportion of revenue increases as revenue increases, which is shown in Subfigure 1b.



(a) Spending on repressive capacity and the public increase with revenue. (b) The share of spending on repressive capacity decreases (public increases) with revenue.

Figure 1. Hypothesized relationship of revenue and spending on repressive capacity and the public.

Spending totals hypothesis: An increase in revenue increases the levels of spending on repressive capacity and the public.

Spending proportions hypothesis: An increase in revenue decreases (increases) spending on repressive capacity (the public) as a proportion of total spending.

When dictators create multiparty electoral institutions

The second step of the argument explains the conditions under which dictators introduce electoral institutions. Multiparty elections benefit a regime by providing information about the opposition's demands, but dictators otherwise prefer to rule without the hassle of elections. Dictators introduce elections when they have spent sufficiently on repressive capacity but lack the resources to buy-off the opposition. Since revenue predicts spending on repressive capacity and the public, revenue also predicts when dictators introduce elections.

Dictators prefer to rule by their own authority, if they can, without the restrictions of political institutions such as power sharing with other elites (Magaloni, 2008; Svoboda, 2009) or by legislatures to co-opt the opposition (Gandhi, 2008; Wright & Escribà-Folch, 2012). However, dictators face a fundamental problem in obtaining information about the preferences of the polity (Wintrobe, 2000). Authoritarian regimes without representative institutions are limited in their abilities to distribute public spending efficiently. Elections in dictatorships help the regime determine how to allocate scarce resources. These resources can be distributed to elites, bureaucrats, and citizens, all of which can help the regime to placate the opposition (Blaydes, 2010; Higashijima, 2022). There are other potential benefits of elections in dictatorships, as mentioned above, but the mechanism in this argument relies upon how elections impact the regime's spending policies.

Regimes with low revenue tend to be unable to secure their rule without domestic conflict (Collier et al., 2003; Paine, 2016). Since these regimes are at risk of conflict, they have interest in creating institutions that may help secure the regime from domestic unrest, however a regime requires a state capacity sufficient to survive elections (Seeberg, 2014, 2018b). A low revenue regime has not yet developed its repressive capacity to deter the opposition from organizing against the regime. This risk to the regime is greater if the regime allows the opposition to organize by multiparty elections.

Moreover, if revenue is low then the regime cannot begin significant public spending. When public spending is minimal or nonexistent, elections do not provide an information benefit to the ruler. In such situations, multiparty elections may be more destabilizing by allowing political organizations (Przeworski, 1991) since the dictator has a limited ability to use budget allocations to influence electoral outcomes (Higashijima, 2022). Low capacity regimes must engage in electoral fraud to win elections, which creates greater risks of electoral backlash. A dictatorship with low revenue has minimal repressive capacity, cannot use elections to improve the distribution of public spending, and thus does not have incentive to create electoral institutions. Then, low revenue regimes are typically better off avoiding elections, or severely restricting elections to one or no parties in hegemonic regimes.

As a regime's revenue increases from a low level, its repressive capacity improves which

enables the regime to allocate more public spending. As public spending increases from a low level, the regime gains a means of buying the favor of their winning coalition. Once regimes have both a repressive capacity to maintain authority and some public spending that can be used to buy-off a winning coalition, the regime can benefit from the information provided by elections. This suggests that dictatorships are more likely to introduce elections as their revenue increases from a low level. However as revenue continues to increase, elections become less useful to improving regime security because the dictator can spend substantial amounts to buy-off a winning coalition.

High revenue dictatorships do not introduce elections because dictators generally prefer to rule without elections and high revenue regimes do not need elections to help them rule. When regimes have high revenue to distribute to their winning coalitions, the information benefit of elections is less important for the regime's stability. The regime has a large amount of resources to distribute which means the efficiency gains due to information are less important to the dictator.⁵ This can lead to wasteful public spending projects but inefficiency does not threaten a ruler if the regime's finances are great enough. The high revenue dictator can enjoy a secure regime through massive public spending. Therefore as revenue increases in a high revenue regime, a dictator is less likely to introduce elections.

Figure 2 plots the hypothesized relationship of revenue and the probability that the dictator creates electoral institutions. When revenue is low, elections are ineffective at helping the dictator secure the regime. As revenue increases from a low level, elections become more effective for securing the regime because the dictator is able to utilize the information gained about preferences to distribute public spending. As revenue further increases to a high level, public spending also increases which reduces the necessity of introducing electoral institutions to deter mobilization and rebellion.

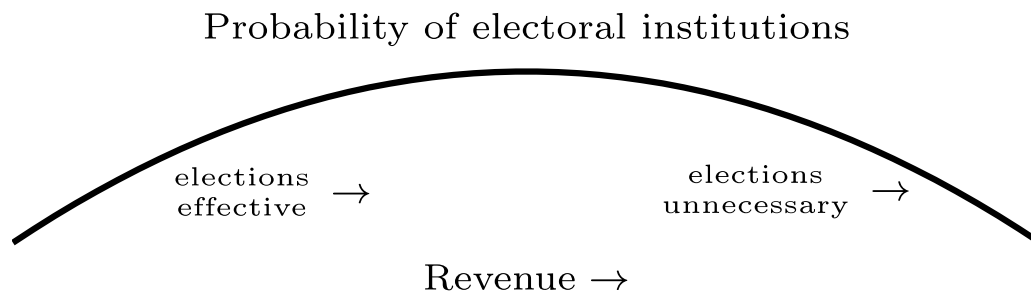


Figure 2. Hypothesized relationship of revenue and the creation of electoral institutions.

Electoral institutions hypothesis: Revenue has a non-monotonic, upside down-U relationship with the probability that a dictator creates electoral institutions, consistent with the following two statements.

- An increase in revenue when revenue is low increases the probability of electoral institutions.

⁵ A dictator in a high-revenue regime can also enjoy plenty of rents without resorting to elections for efficiency gains in spending.

- *An increase in revenue when revenue is high decreases the probability of electoral institutions.*

Research design

The sample is all dictatorships from 1972-2014 for which data are available and the unit of analysis is country-year. Equations 1 and 2 below test the spending totals and proportions hypotheses by ordinary least squares (OLS) estimators with country fixed effects and errors clustered by country. In the empirical models, subscript i is for country, subscript t is for year, X_{it} is a matrix of control variables, and κ and ϕ are vectors of coefficients. Spending on repressive capacity and the public are tested in separate models. For simplicity of notation, subscripts to distinguish the different categories of repression and public spending dependent variables are suppressed.

$$\text{Spending category total}_{it} = \lambda_0 + \lambda_1 \text{Revenue}_{it} + X'_{it} \kappa + \mu_i + \epsilon_{it} \quad (1)$$

$$\text{Spending category \%}_{it} = \pi_0 + \pi_1 \text{Revenue}_{it} + X'_{it} \phi + v_i + \omega_{it} \quad (2)$$

Equation 3 tests the electoral institutions hypothesis by estimating the probability that a closed dictatorship transitions to electoral autocracy. This hypothesis suggests a duration data format, in which an event is when a closed dictatorship introduces multiparty elections (see the Data section below). Given this, the research design includes two methods of testing the hypotheses. The first method estimates transitions to electoral autocracy by complementary log-log with random effects. This method is useful because it estimates categorical or event-based duration data which provides an asymmetric link function that adjusts to data with few failure events (Box-Steffensmeier & Jones, 2004). In the empirical model below, subscript i is for country, subscript t is for year, Z_{it} is a matrix of control variables, γ is a vector of coefficients, and u are random effects.

$$\text{pr(Electoral institutions)}_{it} = \beta_0 + \beta_1 \text{Revenue}_{it} + \beta_2 \text{Revenue}_{it}^2 + Z'_{it} \gamma + u_i \quad (3)$$

The second method is estimation by linear probability models with two-way fixed effects (TWFE) of countries and years. The TWFE approach is useful because it assures within-unit inferences. The TWFE model includes ψ as a vector of coefficients, c are country fixed effects, and a are year fixed effects.

$$\text{pr(Electoral institutions)}_{it} = \delta_0 + \delta_1 \text{Revenue}_{it} + \delta_2 \text{Revenue}_{it}^2 + Z_{it} \psi + c_i + a_t + e_{it} \quad (4)$$

The electoral institutions hypothesis is tested according to the following condition:

$$\frac{\partial \text{pr(Elections)}}{\partial \text{Revenue}_{low}} > 0 > \frac{\partial \text{pr(Elections)}}{\partial \text{Revenue}_{high}} \quad (5)$$

The condition in Equation 5 states the electoral institutions hypothesis according to the empirical

model, with *low* and *high* subscripts denoting an increase in revenue from low and high levels, respectively. The hypothesis implies that $\beta_1 > 0$ and $\beta_2 < 0$ (or equivalently that $\delta_1 > 0$ and $\delta_2 < 0$). If $\beta_1 > 0$, then the probability that a regime creates electoral institutions increases with revenue when revenue is low. But if $\beta_2 < 0$, the effect of revenue decreases as revenue increases. At some point, $\frac{\beta_1}{-2\beta_2}$, an increase in revenue no longer increases the probability that electoral institutions are created. After that point, further increases in revenue reduce the probability a dictator introduces electoral institutions.

Data

There are different dependent variables to test each hypothesis. The spending hypotheses are tested with data from Statistics on Public Expenditures for Economic Development (SPEED 2019). These data are available for most countries in the world from 1980-2017 and are primarily based on the International Monetary Fund's Government Finance Statistics but extended through various other sources such as the World Bank's Public Expenditure Reviews and budget documents from individual countries. The *repressive capacity* spending category consists of defense spending which includes funding for the military, civil defense, and policing. The *public* spending category is the sum of health, education, and social protection spending. Health spending includes of medical equipment, hospitals, and public health services. Education spending includes of primary, secondary, and post-secondary education. Social protection includes of sickness, disability, old age, survivors, family and children, unemployment, and housing. The dependent variables are constructed for both spending totals and shares of spending for each of the repressive capacity and public spending categories.⁶ Spending totals are in log of constant 2010 billion USD and spending shares are measured as percentages (1-100 scale).

The electoral institutions hypothesis is tested with data from the Varieties of Democracy, Regimes of the World indicator (Lindberg et al., 2014; Lührmann, Tannenberg & Lindberg, 2018) Version 12 (V-Dem 2022), which categorizes regimes as closed dictatorship, electoral autocracy, electoral democracy, and liberal democracy. Closed dictatorships have no multiparty elections and electoral autocracies have multiparty elections that are not free and fair. The dependent variable, *electoral institutions*, is coded as zero for all years that a regime is a closed dictatorship and one in the year that a transition to electoral autocracy occurs by creating multiparty electoral institutions. All subsequent years of electoral autocracy following a transition are omitted, which means the variable represents the duration of closed regimes. Electoral and liberal democracies are omitted from the sample.⁷

The explanatory variable is a country's logged total annual revenue in 2010 USD excluding

⁶ Spending shares are calculated without the category, other sectors, because it is unrepresentative. The results are robust to including this category as a control variable.

⁷ Regimes that were closed autocracies and instituted multiparty elections but failed to retain office which resulted in democratization are not excluded from the sample because of how V-Dem codes regime transitions.

grants. The natural log of revenue reduces inefficiency due to right-skewness. These data are provided by the World Bank (2021). Since data on dictatorship finances are relatively scarce, the sample is extended with revenue data from Bodea, Garriga & Higashijima (2019).

Controls include economic, institutional, and conflict variables. Countries with growing economies and populations tend to grow their government budgets. Stagnation can also create political instability. GDP growth and population growth control for economic and demographic changes that could influence revenue, patterns of spending, and potentially impact a dictator's decision to create electoral institutions. Data for these variables are from the World Bank (2021).

A regime's sources of funding can impact a dictator's policy incentives. Dictators with natural resources or foreign aid may finance their security in office with less concern for public policy demands such as spending priorities or elections. Oil revenue windfalls can even prompt repression and conflict (Carey et al., 2022). Natural resource rents as a percent of GDP controls for resource dependence, and log of development aid received (2018 USD) controls for external sources of financing (World Bank, 2021). A dictator with greater natural resource rents has access to more funding than the level of economic development alone might suggest since the dictator is able to rely less on taxation (Ross, 2001). Foreign aid can prop up a dictator by substituting-out the dictator's reliance on domestic capital (Bueno de Mesquita & Smith, 2009; Clark, Golder & Golder, 2017). Foreign aid can also influence the introduction of electoral institutions when a regime is unable to resort to repression because of pressure from donors.

The organization of the regime influences the need for spending to maintain stability. Authoritarian regime types can determine approaches to economic growth which can boost regime revenue, and may also influence whether or not a regime creates electoral institutions (Wright, 2008; Wilson & Wright, 2017). Controls for regime type include dummy variables for party based regimes (single or multiparty), military regimes, and monarchies. Data for authoritarian regime types are from Teorell (2010) which was updated in Wahman, Teorell & Hadenius (2013) and again in 2017. These categories exclude regimes that do not control their own borders or are transitional.

Additional controls account for processes that may influence revenue and the creation of electoral institutions. Domestic conflict can reduce revenue, increase repressive capacity spending, and may pressure dictators to create or revoke electoral institutions. A civil conflict dummy variable controls for domestic turmoil (Gleditsch et al., 2002; Pettersson & Wallensteen, 2015). Elections have spread globally in the past few decades, and transitions to electoral autocracy have accumulated over time. Global trends in regime type may also impact domestic revenue through international transactions. The percent of all dictatorships with electoral institutions controls for the diffusion of electoral autocracy (Przeworski, 1991; Gleditsch & Ward, 2006). Temporal controls include a time trend for the sample and time since last event t , t^2 , and t^3 (Carter & Signorino, 2010).

Tests of the spending hypotheses

Table I reports the results for tests of the spending totals and shares. Models 1 and 2 are the results for spending totals, and models 3 and 4 are the results for the spending shares. The coefficients in all of

the models are consistent with the spending hypotheses. Each of the coefficients in models 1-3 are statistically significant at the 99% level and the coefficient in Model 4 is significant at the 95% level.

In models 1 and 2 both the dependent and independent variables are logged. We can interpret the coefficients on log of revenue in terms of percentage increases that also predict percentage increases in the levels of repressive capacity spending and public spending. For example, a 10% increase in revenue is associated with a $[(1.1)^{\lambda_1} - 1] \times 100 =$ percentage increase in the dependent variable, where λ_1 is the coefficient on revenue. In Model 1, a 10% increase in revenue predicts a $[(1.1)^{0.489} - 1] \times 100 = 4.8\%$ increase in repressive capacity spending, statistically significant at the 99% level. The result for public spending in Model 2 is similar to repressive capacity spending in Model 1. In Model 2, a 10% increase in revenue predicts a $[(1.1)^{0.800} - 1] \times 100 = 7.9\%$ increase in public spending, statistically significant at the 99% level. An increase in revenue increases the level of repressive capacity spending as well as the level of public spending. These results are consistent with the hypothesis for spending totals.

Table I. Revenue predicts spending on repressive capacity and the public.

	Spending totals		Spending shares	
	(1) Rep. capacity (log)	(2) Pub (log)	(3) Rep. capacity %	(4) Public %
(log) Revenue	0.489** (0.076)	0.800** (0.079)	-3.943** (1.257)	3.840* (1.831)
GDP growth	0.000 (0.003)	-0.001 (0.004)	0.002 (0.057)	-0.032 (0.060)
Population growth	0.002 (0.021)	-0.084* (0.037)	1.169 (0.859)	-1.932* (0.934)
Resources % GDP	-0.000 (0.004)	-0.013** (0.005)	0.109 (0.072)	-0.492** (0.161)
(log) Aid	0.002 (0.007)	-0.016** (0.005)	0.293* (0.125)	-0.293† (0.159)
Civil conflict	0.200* (0.095)	-0.069 (0.064)	3.960** (1.352)	-1.188 (1.554)
Party	0.206 (0.156)	0.028 (0.099)	0.370 (1.875)	-4.292 (3.403)
Military	-0.062 (0.162)	-0.182 (0.110)	0.089 (2.161)	-8.800† (4.792)
Monarchy	0.144 (0.186)	-0.376** (0.120)	4.959 (4.318)	-13.959** (4.502)
Constant	-11.704** (1.747)	-16.777** (1.832)	100.824** (29.843)	-10.873 (43.436)
Observations	1,170	1,213	1,170	1,213
Countries	76	77	76	77
R^2	0.270	0.595	0.146	0.188

Models 1 and 2 test the hypothesis for spending totals. Models 3 and 4 test the hypothesis for spending shares. All models are estimated by OLS with country fixed effects. Errors clustered by country are in parentheses. † $p < 0.1$, * $p < 0.05$, and ** $p < 0.01$.

Models 3 and 4 test the spending allocations hypothesis. The dependent variables are repressive capacity spending and public spending as percentages of total spending. We can interpret the

coefficients on the log of revenue as percentage increases in revenue that predict percentage point increases or decreases in the proportions of repressive capacity or public spending. For example, a 10% increase in revenue is associated with a $\pi_1 \times \log(1.1)$ = percentage point increase in the dependent variable, where π_1 is the coefficient on revenue. In Model 3, a 10% increase in revenue is associated with a $-3.943 \times \log(1.1) = -0.376$ percentage point decrease in the proportion of repressive capacity spending, statistically significant at the 99% level.

As revenue increases, the proportion of spending on repressive capacity decreases but the proportion of spending on the public increases. In Model 4, a 10% increase in revenue is associated with a $3.840 \times \log(1.1) = 0.366$ percentage point increase in the proportion of public spending, statistically significant at the 95% level. The results for repressive capacity and public spending are consistent with the spending shares hypothesis. As revenue increases, total spending on either category increases but the proportion of repressive capacity spending decreases while the proportion of spending on the public increases.

The coefficients in the spending proportions models are also substantively large in magnitude. When revenue increases by 10%, a -0.38 percentage point decrease in repressive capacity spending and a 0.37 percentage point increase in public spending would seem rather minor unless you consider how these values impact actual budget allocations. The average annual total spending in the sample (Model 1) is \$37.8 billion (2010 USD). Consider how -0.37 and 0.38 percentage point decreases and increases impact the categories of spending for a budget of \$37.8 billion. This illustration utilizes a static budget of \$37.8 billion to keep the calculation tractable even though budgets also change over time. For context, the average annual growth in revenue is 5.4% and the average ten year growth in revenue is 85.0% according to the sample in Model 1.

A yearly -0.37% decrease in the proportion of repressive capacity spending within a total budget of \$37.8 billion represents a decrease of about -\$140 million annually. This figure does not mean that the level of repressive capacity spending is shrinking each year as revenue increases. Rather, it reflects -\$140 million less additional spending on repressive capacity when revenue increases by 10%. The level of repressive capacity spending increases as revenue increases, but at a lower rate because the proportion of spending on repressive capacity is decreasing. Similarly, a 0.38% increase for an annual budget of \$37.8 billion suggests an additional \$144 million in public spending each year. These results are completely consistent with the spending hypothesis, and the substantive magnitude of the spending results are quite large.

Tests of the electoral institutions hypothesis

Table II reports the results for the models of transitions of closed dictatorships to electoral autocracies. The results are robust across model specifications, including estimation by complementary log-log and TWFE. The direction and statistical significance, and substantive magnitude of the coefficients are similar across the models. The sizes of the coefficients are different because of the differences in estimation procedures, not because of substantive magnitudes.⁸ The results are interpreted according

⁸ See the Online appendix for a comparison of the substantive magnitudes.

to the predicted probabilities and marginal effects in Figure 3 below.

Table II. Revenue predicts transitions to electoral autocracy.

	Complementary log-log			LPM Two-Way Fixed Effects		
	(5)	(6)	(7)	(8)	(9)	(10)
(log) Revenue	3.419*	5.334*	4.211 [‡]	0.688**	0.558**	0.448*
	(1.609)	(2.615)	(2.674)	(0.232)	(0.197)	(0.186)
(log) Revenue ²	-0.077*	-0.128*	-0.102 ^{‡‡}	-0.016**	-0.014**	-0.012*
	(0.036)	(0.059)	(0.060)	(0.006)	(0.005)	(0.004)
GDP growth	-0.007	-0.002	-0.003	-0.001	-0.001	-0.002
	(0.019)	(0.019)	(0.019)	(0.002)	(0.001)	(0.001)
Population growth	-0.163*	-0.082	-0.029	0.001	0.000	0.003
	(0.082)	(0.089)	(0.089)	(0.005)	(0.005)	(0.004)
Resources GDP	-0.018	0.001	-0.000	0.002	0.002 [†]	0.001
	(0.012)	(0.014)	(0.015)	(0.001)	(0.001)	(0.001)
(log) Aid	0.048	-0.007	-0.010	0.005 [†]	0.001	0.000
	(0.035)	(0.049)	(0.052)	(0.002)	(0.002)	(0.001)
Civil conflict	0.181	0.387	0.552	-0.022	-0.032	-0.015
	(0.313)	(0.510)	(0.517)	(0.044)	(0.051)	(0.054)
Electoral regime %	0.031	0.031	0.058	-0.049	-0.028	-0.027
	(0.031)	(0.042)	(0.048)	(0.120)	(0.083)	(0.081)
Party		3.288**	3.169**		0.302**	0.262**
		(0.682)	(0.734)		(0.096)	(0.096)
Military		0.282	0.173		-0.074	-0.079
		(0.575)	(0.582)		(0.129)	(0.128)
Monarchy		0.000	0.000		0.216	0.160
					(0.138)	(0.129)
Time trend	-0.006	0.037	0.022	0.063	0.040	0.038
	(0.041)	(0.058)	(0.064)	(0.133)	(0.093)	(0.091)
<i>t</i> Time since last event			0.404**			0.051**
			(0.155)			(0.015)
<i>t</i> ²			-0.025**			-0.003**
			(0.009)			(0.001)
<i>t</i> ³			0.0004**			0.00004**
			(0.0001)			(0.00001)
Constant	-41.616*	-62.077*	-51.850 [†]	-6.321 [†]	-4.818 [†]	-3.743
	(17.753)	(28.688)	(29.124)	(3.652)	(2.837)	(2.990)
Observations	903	610	610	903	812	812
Countries	77	70	70	77	75	75
<i>R</i> ²				0.104	0.248	0.281

The dependent variables are transitions from closed dictatorship to electoral autocracy based on the Varieties of Democracy Regimes of the World measure. Errors clustered by country are in parentheses. [†] $p < 0.1$, * $p < 0.05$, ** $p < 0.01$, and [‡] means the (log) Revenue and (log) Revenue² coefficients are jointly statistically significant above the 95% level ($p=0.0364$).

The coefficients on revenue and its squared term in all of the models in Table II are in the direction anticipated by the elections hypothesis. The coefficients for log of revenue are positive, and the coefficients on their squared terms are negative. All of the coefficients are statistically significant at the 95% level or above, except Model 7 in which the coefficients are jointly statistically significant at the 95% level. The directions and statistical significance of the coefficients are necessary but not

sufficient for testing the elections hypothesis. The peak of the probability for a transition must also be in the middle of the distribution of revenue.

Figure 3 plots the probability of elections and the marginal effect of revenue from Model 5 with 95% confidence intervals. The maximum point of the curve in Subfigure 3a for a transition to electoral autocracy is at log of revenue equal to 22.2, which is revenue of about \$4.4 billion in 2010 USD. The inflection point of the curve is well within the range of the minimum and maximum of the observed data, as evidenced by the rug plot in Figure 3.

Subfigure 3b plots the marginal effect of log of revenue, which visually indicates the test for the condition in Equation 5. When log of revenue increases from a low level, the marginal effect of increasing revenue is positive and statistically significant, at the 95% level. At log of revenue of about 22.2 the inflection point is reached and the predicted marginal effect becomes zero. At high levels of log of revenue, the marginal effect of increasing revenue is negative, and again statistically significant at the 95% level. Figure 3b indicates that Condition 1 is met and the results are consistent with the hypothesis. These results are also robust to the TWFE model specifications.⁹

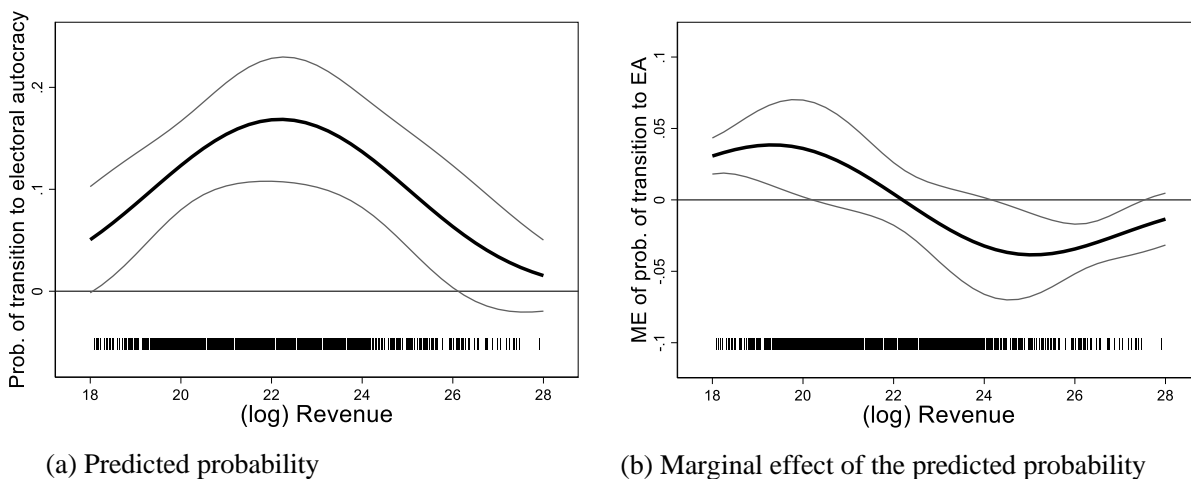


Figure 3. Increasing revenue from a low (high) level increases (decreases) the probability of elections. Confidence intervals are 95%. Rug plots indicate the distribution of the sample.

The results suggest that when revenue increases from a low level, the probability of a dictator introducing elections increases. But when revenue increases from a high level, the probability that a dictator introduces elections decreases. This corresponds to the interpretation that dictators with low and high revenue are less likely to introduce elections than dictators with moderate levels of revenue. For reference, very low revenue can be thought of as dictators with revenue of about \$78 million to about \$300 million (2010 USD), which corresponds to about the 1st and 10th percentiles in the sample (Model 5). The median dictator in the sample has about \$2.5 billion in revenue. Very high revenue in the sample is about \$37 billion to \$470 billion, which represents the 90th to 100th percentiles.

⁹ See the Online appendix for details.

This section tested the main hypothesis of the argument, that transitions to electoral autocracy follow an upside-down U parabolic relationship with revenue. The previous section tested the spending allocations hypotheses. The empirical evidence supports the expectations from the argument for how dictators structure their spending and how they decide when to introduce electoral institutions. Dictators first prioritize repressive capacity spending, but focus on public spending as revenue increases. Dictators also introduce elections when they have spent sufficiently on repressive capacity but do not have the financial ability to buy-off the opposition.

Discussion and conclusion

This study has explained how regime spending and a logic of political control determines when dictators introduce elections in contemporary regimes. The argument builds upon existing theory and evidence that explain how finance and state capacity influence the ability for regimes to successfully utilize elections. While this article has progressed our understanding of the conditions in which multiparty elections emerge in dictatorships, the study has important limitations that could be productive avenues for future research.

The argument builds upon existing research in which dictatorships with greater state capacities and economic resources are better able to use elections to promote their own survival in office (Seeberg, 2018b; Higashijima, 2022). We can understand from these arguments that not only does increasing state capacity suggest that dictators are more likely to introduce elections, they are also more likely to survive the elections they hold. This may explain why regimes that survive elections in the short term are better able to survive in the long term (Knutsen, Nygård & Wig, 2017). Additionally the argument in this article helps clarify that high revenue regimes do not need to hold elections, which provides a useful scope condition for how state capacity explains which regimes successfully utilize elections to maintain office.

This article also contains important limitations that could be productive avenues for future research. This study categorized spending into two broad groups of repressive capacity and public spending, but this study does not consider how public spending may be used to fund public goods versus patronage to constituents. Distinguishing regime incentives for general versus targeted spending, as well as targeted repression offers interesting questions for future inquiry.

This study also does not distinguish potentially destabilizing types of public spending such as education or communication technology. While empirically we observe that dictators tend to limit or control these types of spending (Bueno de Mesquita & Smith, 2011), future studies of regime finance should consider how demands for spending influence dictator security. For example, see Hollenbach (2019) for a historical analysis of demands for education.

Lastly, the argument does not consider the quality of elections. The argument might potentially imply that the quality of elections changes as revenue increases from different levels. However there could potentially be some path dependency in regimes that create elections if the public gains an expectation for the right to vote. Future work might consider the conditions under which dictators weaken electoral institutions. There are also many terrific new projects developing on similar

questions, for instance see (Boese & Eberhardt, 2021; Reuter, 2021; Wilson et al., 2022).

Replication data

The dataset, codebook, and do-files for the empirical analysis in this article, along with the online appendix, are available at <https://www.prio.org/jpr/datasets/>. All analyses were conducted using Stata version 16.

Biographical statement

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