

Budgeting in Authoritarian and Democratic Regimes

Frank R. Baumgartner*, Petra Bishtawi***, Marcello Carammia***, Derek A. Epp*, Ben Noble°, Beatriz Rey†, and Tefvik Murat Yildirim**

Abstract:

We compare patterns of change in budgetary commitments by countries during periods of democracy and authoritarianism. Previous scholarship has focused almost exclusively on democratic governments, finding evidence of punctuated equilibria. Authoritarian regimes may behave differently, both because they may operate with fewer institutional barriers to choice and because they have fewer incentives to gather and respond to policy-relevant information coming from civil society. By analyzing public budgeting in Brazil, Turkey, Malta, and Russia before and after their transitions from or to democracy, we can test punctuated equilibrium theory under a variety of governing conditions. Our goal is to advance the understanding of the causes of budgetary instability by leveraging natural experiments to push the theory beyond democracies and assess its broader applicability.

Presented at the Comparative Agendas Project conference in Lisbon, June 2015

* Political Science Department, University of North Carolina at Chapel Hill

° Department of Politics and International Relations, University of Oxford

** Department of Political Science, University of Missouri in Columbia

† Department of Political Science, Syracuse University

***University of Malta

Punctuated equilibrium theory (PET) describes how as a consequence of disproportionate information processing public policies change in a series of fits and starts, alternating between long periods of stasis where negative feedback forces maintain the status quo and brief, but dramatic, periods of change. While the theory accurately describes a broad range of policy activities, studies of PET have looked almost exclusively at Western democracies, where the wide availability of public budgets and other policy indicators facilitate longitudinal analysis. For example, the 2009 article “A General Empirical Law of Public Budgets” (Jones et al. 2009) focused only on European and North American democracies.

We test PET across different political regimes. First, in the context of authoritarianism and democracy by analyzing public budgeting in Russia from 1999 to 2015, Turkey from 1973 to 2005, and Brazil from 1964 to 2010. We then look at historical data from Malta during periods of colonial rule by the British (1826-1921), colonial self-government (1922-1957), and during a recent period (2001-11) since that country’s 1964 independence.

Democratic and other regimes might differ with regards to budgeting in two opposite ways. On the one hand, autocrats face fewer checks and balances, so one might expect them better to be able to shift quickly in response to shifting context; this could be called the efficiency hypothesis. On the other hand, democracies may have higher capacity to gather information about social and other issues because of stronger and more independent civil society organizations including the press; the information hypothesis.

Under the efficiency hypothesis, an autocratic, working with few institutional constraints such as generating a super-majority (or even a regular majority) in a democratically elected and independent legislature, should be able to shift spending priorities when advisors recognize the

need to do so. This decision-making efficiency would lead us to expect fewer punctuations in regimes where power is concentrated among a few political elites who can operate with broad institutional latitude. Institutional and decision-making frictions are lower, as all the power is concentrated, so decisions should be more efficient. Indeed, “making the trains run on time” is one of the main justifications for authoritarian rule, and democracies are often criticized for high decision costs if not deadlock and stalemate.

Democracies have a countervailing advantage however when it comes to gathering information: they have many uncensored sources of demands, information, and feedback about the impact of current policies through a more vibrant network of civil society organizations including political parties staffed by officials anxious to “feel the pulse” of various constituencies. By contrast, authoritarian regimes may be less capable of gathering, processing, and responding to information about societal problems because they have fewer independent sources of information, and indeed they may suppress certain kinds of information or have highly focused policy priorities. Subsequently, we would expect that the magnitude of punctuation in public budgets during periods of authoritarianism would be greater, as governments either fail to gather or ignore signals for longer than would be possible in democracies, only acting when problems grow so large that they threaten the stability of the regime.

Budget data for each country is compiled from various public records and to our knowledge the datasets assembled here are the longest and most accurate publicly available account of budgeting in any of the four countries. Empirical tests are straightforward and designed to distinguish between the two hypotheses. Using Freedom House scores we classify regimes as either “Not Free,” “Partly Free,” or “Free” for each year of data. Then, for each

country, we draw a distribution of budgetary changes corresponding to the different freedom scores. For Malta, where our data pre-dates the Freedom House scores, we consider the period of self-government as more politically open relative to the period of British colonial rule. Collective evidence strongly supports the information hypothesis, suggesting that any advantage authoritarian regimes gain through institutional efficiency is outweighed by information constraints.

The relative advantage that democratic regimes with a free system of the press and active social mobilizations have with regards to signal detection and problem recognition are poorly understood. Indeed, we know of no budgetary research that systematically compares political regimes with regards to these issues. Our contribution is to push PET forward by looking at the impact of institutional forms on patterns of budget reallocations. For all the regimes we examine there is a combination of policy stability and punctuations, implying that the distinction between authoritarianism and democracy (or different forms of democracy) is not fundamental for understanding budget allocations. The levels of punctuation observed differ substantially however. Theoretically we would expect democracies to have greater informational capacity than other political regimes and this idea finds support in the data. Policy stability can be added to the long list of attributes that favor democratic governance over its alternatives.

Background

Baumgartner and Jones developed PET in 1993 through in-depth case studies of particular policy issues, such as nuclear energy and pesticide use. They found that policy changes in these areas were predominately incremental, but that occasionally radically new ideas would gain momentum causing a tidal shift in budgetary commitments toward these issues. In later work (2005) they introduced a more generalized methodology to demonstrate that government

policymaking is a fundamentally erratic process; characterized by long periods of equilibrium that are intermittently punctuated by dramatic changes. Their argument was this: Because policymakers are boundedly rational and the processing capacity of political institutions is constrained by rules, governments are disproportionate processors of information. The effects on policy change are two-fold. On one hand, an extreme allegiance to the status quo is built into the system. If attention is scarce, most issues most of the time will be ignored and it is difficult to justify changing the status quo in the absence of attention. But issues cannot be ignored indefinitely; societal problems will grow worse over time and eventually need to be addressed. When an issue finally receives attention, policymakers may be forced to enact dramatic policy changes, if only to catch up for the lack of moderate adjustments they failed to make as the problem slowly developed. Thus the model describes a system characterized by friction, where negative feedback forces are predominate, but occasionally give way to periods of rapid self-reinforcing change. With policymakers responding only to a limited number of urgent problems at any given time, issues beneath a threshold level of urgency are put on the back burner as attention is focused on the most pressing issues; there are always more issues that deserve attention than time to attend to them.

Disproportionate information processing has empirical implications. Padgett demonstrated in 1980 that the incremental model of budgeting (Wildavsky 1964) implied that changes in government policy would be normally distributed. If the inputs relevant to governing are stochastic and independent then policies based on an unbiased aggregation of these inputs would from the Central Limit Theorem result in a normal distribution. PET suggests that because governments are disproportionate processors of information the input aggregate process is far from unbiased. Instead some inputs become entrenched and received intense scrutiny, while

many others are routinely ignored. Occasionally this balance is upset and inputs that were previously considered trivial are reprioritized as important indicators of some underlying social problem. Thus PET theory predicts that policy changes will fall into one of two categories: incremental when the status quo prevails, and dramatic during rare periods of imbalance.

Empirical support for this prediction is substantial. A long line of scholarship finds that distributions of changes in public budgets display a punctuated equilibrium pattern, characterized by high central peaks, “weak shoulders,” and very long tails (Jones, Sulkin, and Larsen 2003; Jones and Baumgartner 2005; Breunig and Koski 2006; Baumgartner et.al. 2009; Jones et.al. 2009; Breunig, Koski, and Mortensen 2010; Robinson et.al. 2014). This research focuses on kurtosis, a summary statistic that measures the peakedness of a distribution. Higher kurtosis is generally taken as evidence of greater friction in the policy process that produced the given change distribution.

To date, Lam and Chan (2014) have conducted the only test of the PET in the context of nondemocracies. (Pauw [2007] also demonstrated that South African budgets showed high levels of kurtosis, based on an analysis of program-level budget data from 2003 through 2010.) Looking at the case of Hong Kong, Lam and Chan propose that nondemocracies are characterized by greater friction than democracies because the constitutional design of these regimes centralizes power at the highest level of government, blocking out external interferences to political processes. According to them, in the absence of electoral and participative mechanisms that are characteristic of democratic governments, officials lack the incentive to monitor and respond to the external environment. Of course, one could also note that the non-democratic regimes face few constraints once they decide to reallocate resources: there is no requirement to bargain with an independent legislature, rival parties, or other veto players who

may stand in the way of smooth adjustment to shifting needs. Thus, one could potentially argue that the merit of authoritarianism is in giving full control to the executive to respond to shifting social issues as needed. On the other hand, informational capacity is typically reduced.

Within such a system, Lam and Chan argue, under-response or stasis is extended; changes are reduced to prolong stability through mechanisms of negative feedback. However, the authors predict that pressure for change can build up to dangerous levels; especially when it reaches levels high enough to threaten the authority of the regime. The result of the two dynamics is a highly punctuated policy process “in which the policymaking is too insulated to react until the built-up pressures can no longer be resisted. But once it happens, the policy response can be radical and extremely forceful” (Lam and Chan 2014; 123). We join Lam and Chan in pushing forward to investigate patterns of public budgeting outside the context of advanced industrial democracies.

Hypotheses

Democracies are designed to translate citizen inputs into policy outputs. This is most often achieved through the electoral connection: officer holders wishing to keep their jobs must legislate in accordance with their constituents’ political attitudes. Thus the onus is on policymakers to be active seekers and consumers of information. Lazy representatives who ignore the problems facing their constituents may soon be voted out of office.

Policymakers in authoritarian regimes do not have to answer to voters. This erodes the informational capacity of authoritarian governments on two fronts. First, it creates few incentives for leader to seek out information. Indeed, structures that facilitate the flow of information in democracies, such as freedoms of speech and press, are often missing in authoritarian regimes and information is frequently censored or manipulated in favor of the regime. Second, whatever

information is received by policymakers can more easily be ignored. Autocrats who want to keep their jobs must act only when problems have grown to such an extent that unrest, either within the regime or society at large, appears eminent.

Another set of institutional features of democracies and authoritarian systems works potentially in another way. The autocrat controls the levers of government; the democratic leader may have to negotiate more compromises. So, whereas democratic leaders may get more signals and be more aware of changing social demands or trends, they may not have the capacity unilaterally to respond. An independent legislature, a judicial body, or members of rival parties sharing control of a coalition government may refuse to cooperate; in sum a democratic regime typically has some institutional barriers to action, and these are usually much greater than what would exist in an autocracy.

We therefore propose two competing hypothesis. The first is the “informational advantage” hypothesis. Every government has a certain threshold of institutional response. Below the threshold policymakers ignore problems; above the threshold they attempt to solve them. Authoritarian regimes lack an electoral connection, so the response threshold may be higher than in democracies. In democracies, problems can be safely ignored only until representatives worry that their constituents will vote them out of office. Policymakers in authoritarian regimes can ignore problems to the point at which social discontent threatens regime stability. Voting is much less costly than revolt, so in general we can expect democracies to be more responsive to information. Thus, we hypothesize:

Public budgeting in democracies will show lower levels of kurtosis than other political regimes.

The counter hypothesis is that any information gains provided by democratic institutions are outweighed by the frictions that accompany such institutions. This is the “institutional

efficiency” hypothesis, which suggests that authoritarian leaders may be better situated to act to resolve social issues than their democratic counterparts. Furthermore, some autocrats have grander ambitions than preventing revolt and may therefore be more responsive to information. Examples of authoritarian regimes that adopt democratic institutions to maintain power are abundant in the literature (Gandhi & Przeworski 2007, Brownlee 2007, Gandhi 2008, Magaloni 2008, Malesky & Schuler 2010; Brancati 2014). Many authoritarian regimes may combine information search with the institutional freedom to act rapidly in order to solve developing social problems, thus greatly reducing overall levels of friction. The institutional efficiency hypothesis thus states:

Public budgeting in autocracies will show lower levels of kurtosis than other political regimes.

Although autocrats might face fewer institutional constraints – particularly regarding executive-legislative relations – the ability to act decisively might be hindered by intra-elite policy differences. As Tsebelis (2002: 90) notes, “while nondemocratic regimes are generally considered to be single veto player regimes, close analysis may reveal the existence of multiple veto players.” Roeder (1993), for example, analyses the within-regime roots of resistance to systemic reform in the Soviet Union. If this is the case, then it is likely to moderate any authoritarian advantages over democracies in reducing institutional sources of friction.

Budget Data

Previous scholarship has focused almost exclusively on Western democracies because these countries make available longitudinal data. Using original source documents we introduce four new datasets: public budgets in Russia from 1999 to 2015, Turkey from 1973 to 2005, Brazil from 1972 to 2010, and Malta from 1826 to 1957 and from 2001 to 2011. These budget series are

significant in that they span periods of authoritarian and democratic rule, allowing a unique test of PET theory. Table 1 provides a summary of the data.

Table 1. Data Characteristics

Country	Time Period	N	Budget Type
Russia	1999-2004; 2005-2007; 2011-2015	950	Budget Authority
Turkey	1973-2005	553	Budget Authority
Brazil	1964-1985; 1995-2010	1,810	Budget Authority
Malta	1827-1937; 1947-57; 2001-2011	3,074	Expenditures

Note that for Russia and Brazil, inconsistencies in the reporting and management of public records preclude the use of uninterrupted time series. Another limitation is that budget authority is unavailable for Malta and instead we use annual expenditures. Budget authority measures the amount of authorized spending, rather than the amount that was actually spent in a given year, and is therefore a better measure of government decision-making. However, budget authority is often unavailable and scholars have substituted expenditures with no large effect on the shape of budget distributions.

We also proceed with some caution as to the reliability of the budgetary record during periods of authoritarian government. Authoritarian regimes are known to repress or alter information, which may compromise the integrity of any budget data that is made public. A symptom of this is the relative inconsistency in the use of budget categories during the authoritarian periods. Categories are often redefined from one year to the next, which limits our ability to assess longitudinal changes in budgetary priorities. This is more problematic in Russia and Brazil, where our data covers lengthy periods of authoritarian rule, and less so for Turkey, which sees only relatively brief military interventions during our period of study, and Malta where the British kept accurate accounting records, known as “Blue Books.” We do not claim that the data we assemble for the authoritarian periods is complete in the sense that it records every allocation made by these regimes, only that it is the most complete account that can be

compiled from public records. But we have no reason to believe that authoritarian regimes systematically repress either very small or very large allocations; censorship should be neutral with respect to the shape of budget distributions. Before proceeding to results, we briefly review each dataset and the historical context of each country during the periods of study. We are also careful to include those budget categories which are consistently defined between two years; that is, we exclude from the analyses below any budget changes which might reflect a shift in the definition of the stated budget category. (That is, the changes we report below are real, not artifacts of shifting category definitions.)

Russia

The political environment has varied considerably in post-Soviet Russia. Following the collapse of the Soviet Union, the country experienced an unprecedented level of political competition, media freedom, and economic liberty. However, the concomitant collapse in state capacity meant that President Yeltsin's tenure was also marked by economic turbulence, threats to the territorial integrity of the federation, and "feckless pluralism" (Carothers 2002: 10) instead of consolidated multi-party politics. In response to this impression of disorder, Vladimir Putin set out on a project of re-establishing state control on his election to the presidency in 2000 — an aim aided greatly by the concurrent rise in world oil prices.

Although there are notable differences in how post-Soviet Russia's political system has been classified, there is a broad consensus of an authoritarian turn under the leadership of President Putin. Freedom House changed its classification of Russia from "Partly Free" in 2003 to "Not Free" in 2004, citing "the virtual elimination of influential political opposition parties within the country and the further concentration of executive power" (Freedom House 2005). Along with executive dominance over the legislature — thanks to the rising seat share of the

“party of power,” United Russia — the Putin administration clamped down on media freedom, removing most independent television news outlets. In addition, oligarchs with political pretensions — most notably Mikhail Khodorkovsky — were threatened into exile or imprisoned.

This narrative of increased executive control was also reflected in budgeting practices. Whereas budgets passed in the 1990s were subject to intense lobbying during legislative passage, often resulting in delayed promulgation and making the resulting laws un-implementable, budgeting in the 2000s became a much more orderly affair, with fewer channels for outside influence on executive tax and spending decisions. However, the rise of the executive branch and subsequent gains in institutional efficiency went hand-in-hand with the loss of public transparency. Information for the 2008 through 2010 budgets are not available, as complete sub-category spending figures were not made public by the executive — something that, according to Cooper (2007: 2), constituted an “unprecedented degree of classification [opacity] of the budget.”

Turkey

The history of Turkish democracy can best be described by large fluctuations starting from the multiparty politics in 1950. Although the end of single-party political system was of great importance for the democratization of Turkish politics, the newly elected government under the leadership of Adnan Menderes soon embraced undemocratic practices to restrict opposition activities. As the deteriorating relations between government and opposition reached its peak in 1960, the military intervened in politics for the first time since the establishment of the Republic (1923), removing the government party from office and executing its leaders. Shortly afterwards, in 1961, elections were held and Turkish politics entered into a new phase, one in which polarization and political violence increased dangerously to the point at which the military

intervened in politics for the second time by delivering memoranda. However, violence and political instability continued to develop (Tachau and Heper 1983). In the following ten years, politics was mostly dominated by unstable coalition and minority governments, resulting in right-wing/left-wing political violence. For the third time, in 1980, the military took control of the government and banned all the political activities temporarily until 1983. The influence of military on politics has been restricted only after late 2000s during the AKP's (Justice and Development Party) government.

Although Turkish politics faced three military interventions in two decades (1960, 1971 and 1980), the role that the military played was categorized as “moderator” and “guardian” as these military regimes ended soon after the political authority was restored (Tachau and Heper 1983). Instead, the conditions that put Turkey among “partly-free” countries emerged under civil governments. Electoral threshold of 10% that prevented certain parties from winning seats in parliament and bans on political activity of the Kurdish elite harmed political rights and civil liberties in Turkey during 1990s. Moreover, freedom of expression had long been limited in Turkey; many journalists were accused of insulting state officials and imprisoned in 1999 (see Freedom House Report Turkey 1999), which received much attention particularly from the EU and leading non-profit organizations.

The Turkey data covers the period of 1973-2005; 1974-1979 is categorized free and 1980-2005 partly free. The latter period coincided with the rise of the Kurdish movement in the country: Turkey's treatment of its Kurdish citizens has been the main obstacle to the democratization of Turkish politics (Ergil 2000). There are good reasons to expect that certain political and social groups were isolated from the decision-making process and their demands were not taken into consideration during this period.

Brazil

Our analysis focuses on the years of authoritarian rule (1964-1985), and, in the democratic period, the years of center party rule (PSDB, 1995-2002, during which the president was Fernando Henrique Cardoso) and the years of left party rule (Workers' Party, or the PT, 2003-2010, during which the president was Luiz Inácio Lula da Silva). The authoritarian years under the Brazilian military can be divided into two periods. The first (1964-1974) was characterized by the dominance of a hard-liner group of military officers, economic prosperity, and the relative absence of social unrest. The second (1975-1985) was characterized by the dominance of the moderate group of military officers, economic crisis, and presence of social unrest.

The first period of the military regime was marked by the severe restriction of political and civil rights. The government interfered in almost all labor unions and civil society organizations, strikes were banned and student movements were declared to be extinct. Political rights were also suspended. The government established indirect elections for presidents and governors. Only two political parties were allowed to exist: the *Aliança Renovadora Nacional* (ARENA), the regime party, and the *Movimento Democrático Brasileiro* (MDB), the opposition party. During this period, rulers temporarily shut down Congress in 1968 and edited the Institutional Act 5 (AI5), suspending all democratic rights and constitutional freedom.

During the second period of the military regime, Brazil's economy started to suffer the effects of the oil shock of 1973 combined with the maintenance of investments in unfavorable conditions. Although the government tried to contain the crisis, a second oil shock (1979) jeopardized its plan. The annual rate of inflation did not stop growing during this period, which did not stop the Brazilian military regime from focusing on economic growth at all costs (Skidmore 1988). President João Figueiredo, the last military ruler to occupy office, turned to the IMF for assistance (Baer 2014) in 1982. Several sectors of society began to organize in this

period (for instance, the “*Diretas Já*” movement demanded direct presidential elections between 1983 and 1984), which forced the government to promote some institutional reforms, such as the end of the censorship of radio and television.

The transition to democracy occurred in March 1985 when President José Sarney took office after the death of Tancredo Neves, who had been indirectly elected president by an electoral college. Freedom House notes the transition, changing its classification of Brazil from “Partly Free” to “Free” in 1985.¹ These political changes also marked the beginning of a tumultuous economic period. From 1985 to 1994, Brazil had four different currencies (Cruzado, Cruzado Novo, Cruzeiro, and Cruzeiro Real). The country suffered with hyperinflation that reached levels as high as of 81.3% in a single month in 1990 (Bresser Pereira and Nakano 1991). Budget data for this period is scarce and unreliable. For these reasons we exclude 1986 to 1994 from our analysis.

Malta

Malta was under direct rule of the British Crown since 1800. British troops were called to liberate the island from the Napoleonic army after only two years of French domination, which in turn had posed an end to the unique confederal theocracy of the Order of St. John, known as the government of the Knights. When the British took over Malta, they centralized decisions under their authority. Ever since, the political history of colonial Malta was one of continuous

¹ Freedom House ranks the country as Partly Free again from 1993-2002. Such classification is justified by increases in violence and lawlessness on the part of the police, upsurge of organized crime, lack of respect for indigenous rights, and corruption within the federal government. From 2003 on, Freedom House ranks the country as Free due to improvements in political rights. In particular, Freedom House highlights the holding of a free and fair election in which an oppositional presidential candidate of a different ideology from the ruling coalition (Luiz Inácio Lula da Silva, Workers’ Party) was elected.

requests of self-government by the Maltese, and reluctant, intermittent concessions by the UK (Frendo 2000).

The British rule of the first decades was effectively a “gubernatorial autocracy” (Cremona 1997). Representatives of the Maltese population were kept out of any decision-making body, and civil liberties were suppressed. The King bluntly rejected the requests of constitutional government, representative political bodies, independent tribunals, and freedom of expression. Representation in a consultative Council of Government with consultative powers was first granted in 1835; Maltese members, however, were a minority, and they were nominated rather than elected.

The first elected Council of Government was introduced with the 1849 constitution. Maltese representatives were still a minority of the members, and suffrage was limited by sex, age, literacy, property, and income; which restricted the electorate to less than four percent of the population. In addition, while the Council had decision-making power, the Governor could override its deliberations. A new constitution granted in 1887 established a Legislative Council with a majority of elected Maltese representatives. However, the Governor could still veto or override its decisions, and while limitations to suffrage were relaxed, the electoral body was still restricted to five percent of the population. When the elected members took a confrontational stand against the colonial government, the constitution was revoked.

A real change was introduced in 1921, when social pressures created by WWI led to the promulgation of a new constitution. The Amery-Milner constitution introduced a bicameral system with legislative powers. A number of matters – including trade, foreign relations and defense – were reserved to the Imperial government; and suffrage was still restricted, including by sex. And yet, the 1921 constitution marked a radical change with the introduction of self-rule.

The next significant change happened in 1947, when a national assembly approved a new constitution which introduced universal suffrage and restricted the reserved matters to those touching “public safety.”

While post-second world war Malta had fully representative institutions, it still was a British colony. The 1961 Constitution finally established “the state of Malta” which obtained independence from Britain on 21 September 1964 following a referendum. The Constitution was amended in 1974 to make Malta a Republic. Although Malta had a democratic constitution, a free press, and a pluralistic party system, the first decades after independence were years of democratic consolidation. Its perfect two-party system, coupled with hyper-majoritarian political institutions (Pace and Carammia forthcoming), meant that one party could rule the country after winning the elections by narrow margins of as little as one thousand votes. The charismatic government of Dom Mintoff, the leader of the Labour party in government between 1971 and 1987, was particularly controversial. Mintoff steered Malta toward the non-aligned movement, and tightened relations with such countries as Libya and North Korea. Eventually, civil liberties were tightened during the final years of Labour government. This reflects in Freedom House rankings, where Malta is classified as Partly-Free between 1983 and 1987. That was a short parenthesis, however; for the rest of the period covered by Freedom House, independent Malta was always classified as a free country. In 2004, forty years after gaining independence, Malta became a member of the European Union; four years later, it introduced the Euro as its currency.

Results

Freedom House quantifies the amount of political rights and civil liberties citizens enjoy. Based on these composite elements, Freedom House assigns countries a rank of “Worst of the Worst,” “Not Free,” “Partly Free,” or “Free.” These aggregate scores are available annually from 1972 to

2014 and the first step in our analysis is to assign each year of budgetary data its corresponding freedom score. For Brazil and Malta, budget data is available prior to 1972. Indeed, Maltese budgets are available as far back as 1826. Our main analysis excludes any year where we cannot assign a Freedom House score, but in the appendix we consider the full time series and divide the data based on regime transitions. For example, Malta transitioned from colonial rule to a period of colonial self-government in 1922. We find that results are highly complementary.

Having assigned Freedom House scores, we then calculate annual percent change values for each spending category. As discussed there is some inconsistency across budget categories. If a category had a change in its substantive definition in a certain year or was not reported, we do not calculate a percent change value for that year. We also take a new approach to accounting for inflation. The data spans years of political and economic turmoil; each country introduced at least one new currency or experienced a significant currency revaluation during our period of study. This makes inflation adjustments difficult and in many cases there is no consensus within the scholarly community about how such adjustments should be made. Rather than adjusting for inflation prior to calculating percent changes (the standard approach in the literature), we calculate changes relative to total government growth in that year. For example, if a budget category saw an annual change of 10% and the total budget for that year grew by 7%, we consider that a 3% change for that category in that year. While atypical, this approach is both necessary given the historical context of our study and most importantly it preserves the essential element of the analysis, which is to assess how governments reprioritize problems. Most importantly, it has no practical effect on the shape of the budget change distributions, which is our concern. It simply centers the change on an annual value of zero percent growth, whereas in

fact of course the average growth could have been higher. As our concern is whether the shape is close to Normal or has high kurtosis, shifting the mean in this manner is not a concern.

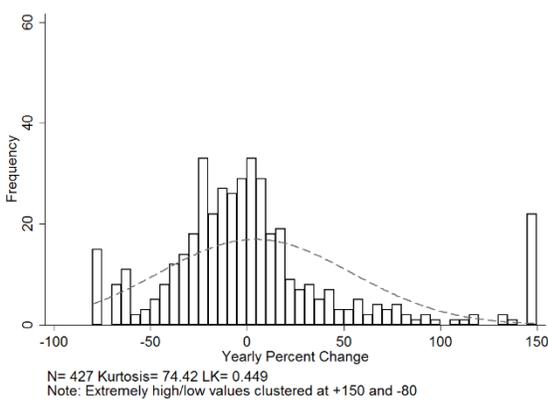
We pool percent change values into distributions for each country and each Freedom House rank. These percent change values simply represent the number of cases in which a given budget was changed by x percent, compared to its value in the previous year and the rate of overall government growth. Table 2 summarizes the results and Figure 1 presents the corresponding distributions. Budgeting in each country follows a punctuated equilibrium pattern, with a tall central peak (indicating the predominance of incremental changes) and very wide tails (indicative of dramatic spending changes). This pattern is especially pronounced in Turkey during the “Partly Free” period and least pronounced in Brazil, where the budget distributions come closest to the normal. L-kurtosis is a standardized version of kurtosis that is robust against the disproportionate effects of outlying values. A normal distribution has an l-kurtosis of 0.123, with higher values indicating greater leptokurtosis. Looking at the l-kurtosis values in Table 1 confirms the visual evidence from the figures, budgeting is leptokurtic.

Table 2. Kurtosis by Freedom House Rankings

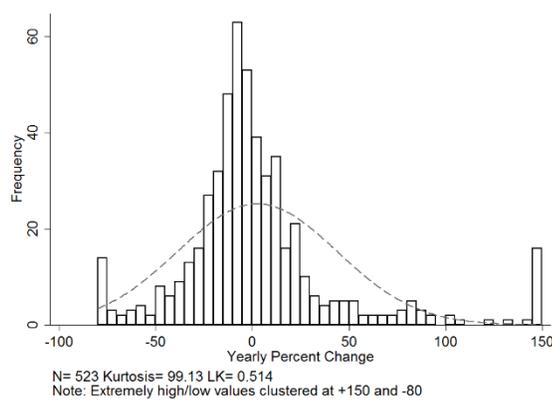
Country	Time Period	N	Kurtosis	L-kurtosis
Russia				
Partly Free	1999-2004	427	74.42	0.449
Not Free	2005-2007; 2011-2015	523	99.13	0.514
Turkey				
Partly Free	1973; 1980-2005	553	444.62	0.721
Free	1974-1979	102	91.21	0.673
Brazil				
Partly Free	1972-1985; 1995-2001	979	87.36	0.354
Free	2002-2010	575	231.39	0.321

Figure 1. Change Distributions by Freedom House Rankings

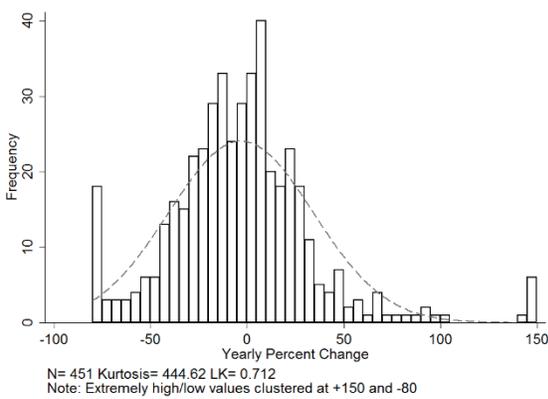
A) Russia, Partly Free



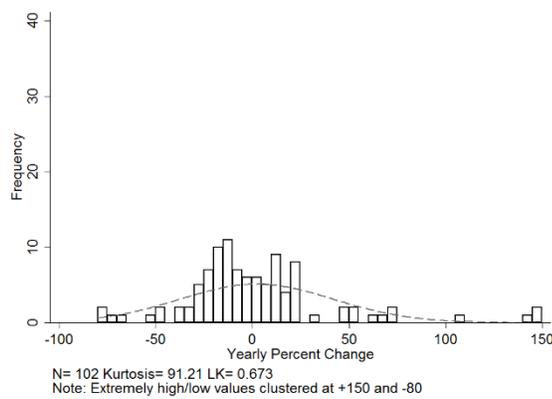
B) Russia, Not Free



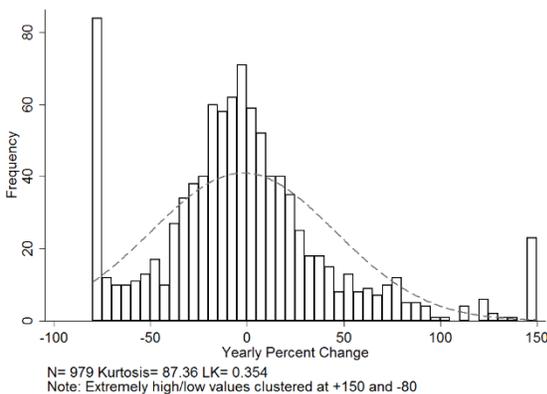
C) Turkey, Partly Free



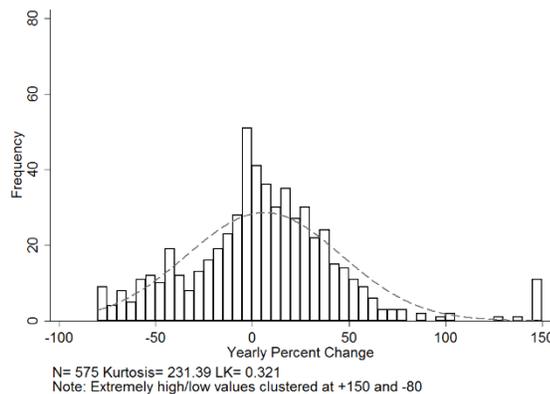
D) Turkey, Free



E) Brazil, Partly Free



F) Brazil, Free



Evidence supports the information hypothesis rather than the efficiency one in all three cases. In each country the transition toward greater freedom (and a more open system of government) corresponds with a drop in l-kurtosis, indicating a lower magnitude of punctuation during these periods. While the differences in l-kurtosis are only modest, they all point in the same direction. Furthermore, these findings support evidence presented by Lam and Chan (2014) that l-kurtosis is lower during periods of democratic governance. Collectively the results are compelling and suggest that democratic structures provide a powerful informational advantage, which conditions the policymaking process. Note, however, that greater freedom is not so important as to outweigh other inter-country differences. For example, the budget distribution during the “Not Free” period in Russia is still closer to the normal than the distribution for the “Free” period in Turkey. Political freedoms are important, but we still have a long way to go in explaining budgetary patterns across countries.

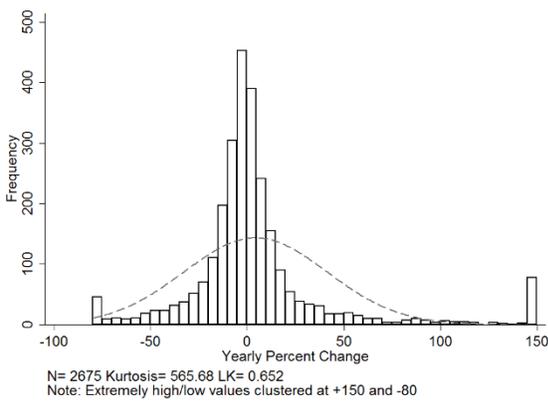
Colonial and independent Malta

Malta was part of the British Empire from 1826 until 1964 and because the British kept detailed management records of all their colonies, it is possible to assemble budget data for Malta during almost the entire colonial period. This is what we do. We assembled the dataset referencing the original colonial “Blue Books” for the period 1827-1936. We also cover one decade after WWII,

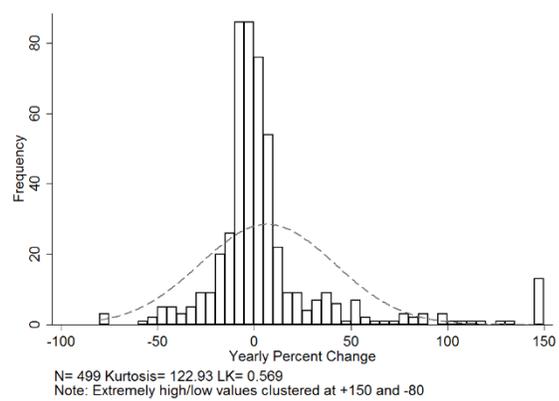
using the “Financial Perspectives” books as a source of data on expenditures between 1947 and 1957. To our knowledge this is the first test of PET in a colonial setting. It also provides a further test of our hypotheses. Malta was granted home-rule by the British in 1921, so while still a colony, this marked an important transition toward a more open and participatory form of government. We can therefore divide the colonial era into two periods, with the expectation that political freedoms should be greater during the period when the Maltese people could run their own government. Finally, we complement our analysis of the colonial period with recent data covering the decade 2001-2011, that we obtained from Malta’s National Statistics Office. We can thus compare colonial with independent Malta, a fully free country – and for most of the time covered, also a member of the European Union. In this way, we can replicate the study of the effect of transition to full democracy on the case of Malta. Figure 2 shows change distributions for these three periods.

Figure 2. Colonial Budgeting in Malta

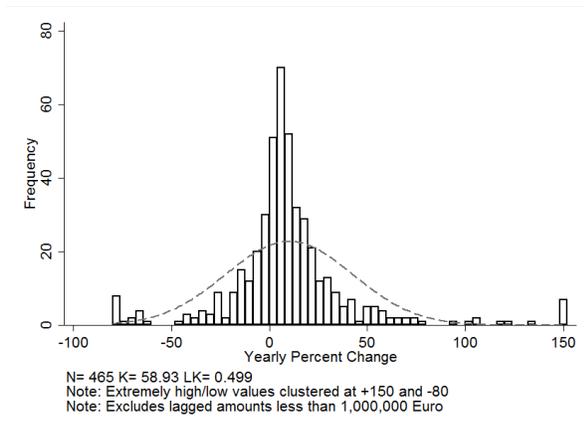
A) British Rule



B) Self Rule



C) Independence, Free



During the period of British rule the l-kurtosis associated with the distribution is 0.652, but when the Maltese gain greater autonomy l-kurtosis is 0.569. L-kurtosis is even lower (0.499) during the 2001-2011 period, after full consolidation following independence and transition to democracy. This continues the trend established by the previous analysis. As governments transition toward greater freedom, their budgetary processes gain stability. Gains in informational capacity provided for by democratic structures seem clearly to outweigh any institutional efficiency afforded by authoritarian government. Our information hypothesis is confirmed and we can reject the efficiency hypothesis.

Conclusion

A robust literature has now explored PET theory with regards to budgeting, but that literature has almost exclusively been focused on advanced industrial democracies, with some attention to subnational budgets (e.g., states, municipalities, and school districts) within these nations. Here we present just the second example of detailed attention to the shape of budgetary change in a nondemocratic settings, building on the work of Lam and Chan (2014). We hope to expand on this work which must first start with more data collection in non-democratic systems, and then to explore the various aspects of democratic and authoritarian states to gather information, and to

act on it. In particular, as we collect more data from different types of regimes, it may be possible to pinpoint particular institutions or civil rights that affect the informational capacity of governments, and subsequently their decision-making processes. In addition, we hope to collect data on other variables of interest – particularly economic instability – in order to exclude alternative explanations for distribution differences across regime types. We also note that there is great inter-state variation in the shape of budgetary change distributions that a focus on political regimes appears insufficient at explaining. Ultimately we would hope to gain a better understanding of the all factors – political, social, or economic – that affect the stability of government agendas.

Appendix

Not every democracy or autocracy is the same, so by using the Freedom House rankings we gain a consistent measure of the openness of different regimes over time. But Freedom House scores are available only through 1972 and for Brazil and Malta we have budget data from further back in time. There are also some concerns about the accuracy of the Freedom House scores. For these reasons we replicate our analysis, using regime transitions as the dividing points in the data, rather than the Freedom House ranks. Table 1A shows the results.

Table 1A. Kurtosis by Regime

Country	Time Period	N	Kurtosis	L-kurtosis
Russia				
Democracy	1999-2004	427	74.42	0.449
Authoritarian (Putin)	2005-2007; 2011-2015	523	99.13	0.514
Turkey				
Democracy	1973-1979; 1983-1996; 1998-2005	484	454.37	0.736
Military	1980-1982; 1997	69	4.91	0.195
Brazil				
Military	1964-1985	944	80.70	0.376
Democracy	1995-2010	866	229.78	0.283
Malta				
Colonial	182-1921	2,675	565.68	0.652
Colonial Self-Rule	1922-1957	499	122.93	0.569
Independence/Democracy	2001-2011	465	58.93	0.499

Using the longer data series for Brazil and the different dividing points for each country does not substantively alter the results. We still see a lower magnitude of punctuation during periods of greater political openness. This reassures us that the results we present are not spurious products of any particular coding system, but instead reflect real differences in the abilities of democracies to process and act on information.

References

- Baer, Werner. 2014. *The Brazilian Economy – Growth and Development*. Colorado: Lynne Rienner Publishers.
- Baumgartner, Frank R., and Bryan D. Jones. 1993. *Agendas and Instability in American Politics*. Chicago: University of Chicago Press.
- Baumgartner, Frank R., Christian Breunig, Christoffer Green-Pedersen, Bryan D. Jones, Peter B. Mortensen, Michiel Neytemans, and Stefaan Walgrave. 2009. Punctuated Equilibrium in Comparative Perspective. *American Journal of Political Science* 53 (3): 602-619.
- Brancati, Dawn. 2014. Democratic Authoritarianism: Origins and Effects. *Annual Review of Political Science* 17:313–26.
- Bresser Pereira, Luiz Carlos, and Yoshiaki Nakano. 1991. Hiperinflação e estabilização no Brasil: o primeiro Plano Collor. *Revista de Economia Política* 11(4): 89-114.
- Breunig, Christian and Chris Koski. 2006. Punctuated Equilibria and Budgets in the American States. *Policy Studies Journal* 34: 363-79.
- Breunig, Christian, Koski, Chris, and Peter B. Mortensen. 2010. Stability and Punctuations in Public Spending: a Comparative Study of Budget Functions. *Journal of Public Administration Research and Theory* 20 (3): 703–722.
- Brownlee, Jason. 2007. *Authoritarianism in an Age of Democratization*. New York: Cambridge University Press.
- Carothers, T. 2002. The End of the Transition Paradigm. *Journal of Democracy* 13: 5-21.
- Cooper, J. (2007). “Military expenditure in the three-year federal budget of the Russian Federation, 2008–10.”
http://www.sipri.org/research/armaments/milex/publications/unpubl_milex/unpubl_milex_default/cooper2007 (accessed 6 June 2015).
- Cremona, J.J. 1997. *The Maltese Constitution and Constitutional History since 1813*. Valletta: PEG.
- Ergil, D. 2000. The Kurdish Question in Turkey. *Journal of Democracy*, 11: 3, p.122-135.
- Freedom House (2005). *Freedom in the World*. <https://freedomhouse.org/report/freedom-world/2005/russia#.VXLf2FxFviko> (accessed 6 June 2015).
- Freedom House (1999), *Freedom in the World*, <https://freedomhouse.org/report/freedom-world/1999/turkey#.VXObt0lxFp8> (accessed 11 June 2015).

- Frendo, H. 2000. *The Origins of Maltese Statehood: A Case Study of Decolonization in the Mediterranean*. Valletta: PEG.
- Gandhi, Jennifer, and Adam Przeworski. 2007. Authoritarian institutions and the survival of autocrats. *Comparative Political Studies* 40(11):1279–301.
- Jones, Bryan D., Tracy Sulkin, and Heather A. Larsen. 2003. Policy Punctuations in American Political Institutions. *The American Political Science Review* 97: 151-169.
- Jones, Bryan D. and Frank R. Baumgartner. 2005. *The Politics of Attention: How Government Prioritizes Problems*. Chicago, IL: University of Chicago Press.
- Jones, Bryan D., Frank R. Baumgartner, Christian Breunig, Christopher Wlezien, Stuart Soroka, Martial Foucault, Abel François, Christoffer Green-Pedersen, Chris Koski, Peter John, Peter B. Mortensen, Frédéric Varone, and Stefaan Walgrave. 2009. A General Empirical Law of Public Budgets: A Comparative Analysis. *American Journal of Political Science* 53: 855-73.
- Lam, Wai Fung and Kwan Nok Chan. 2014. How Authoritarianism Intensifies Punctuated Equilibrium: The Dynamics of Policy Attention in Hong Kong. *Governance*. doi: 10.1111/gove.12127.
- Magaloni, Beatriz. 2008. *Voting for Autocracy: Hegemonic Party Survival and its Demise in Mexico*. Cambridge, UK: Cambridge Univ. Press.
- Malesky, Emund, and Paul Schuler. 2010. Nodding or needling: analyzing delegate responsiveness in an authoritarian parliament. *American Political Science Review* 104(3):482–502
- Pace, R., and Carammia M. Forthcoming. Malta. In J. M. De Waele, N. Brack, J.-B. Pilet (eds), *Les Démocraties Européennes*, Paris: Armand Colin.
- Padgett, John F. 1980. Bounded Rationality in Budgetary Research. *American Political Science Review* 74: 354-72.
- Robinson, Scott E., Carla M. Flink, and Chad M. King. 2014. Organizational History and Budgetary Punctuation. *Journal of Public Administration Research and Theory* 24: 459-71.
- Roeder, P. 1993. *Red Sunset: The Failure of Soviet Politics*. Princeton, New Jersey: Princeton University Press.
- Skidmore, Thomas E. 1988. *The Politics of the Military Rule in Brazil: 1964-1985*. New York: Oxford University Press.

Tachau, F., & Heper, M. 1983. The State, Politics, and the Military in Turkey. *Comparative Politics*, 17-33.

Tsebelis, G. 2002. *Veto Players: How Political Institutions Work*. Princeton, New Jersey: Princeton University Press.

Wildavsky, Aaron. 1964. *The Politics of the Budgetary Process*. Boston, MA: Little Brown.