Political Man on Horseback Coups and Development

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Abstract

In this paper I examine the development effects of coups. I first show that coups overthrowing democratically-elected leaders imply a different kind of event than those overthrowing autocratic leaders, and that these differences relate to the implementation of authoritarian institutions following a coup in a democracy. Secondly, I address the endogeneity of coups by comparing the growth consequences of failed and successful coups as well as implementing matching and panel data methods, which yield similar results. Although coups taking place in already autocratic countries show imprecise and sometimes positive effects on economic growth, in democracies their effects are distinctly detrimental. I find no evidence that these results are symptomatic of alternative hypothesis involving the effects of failed coups or political transitions. Thirdly, when overthrowing democratic leaders, coups not only fail to promote economic reforms or stop the occurrence of economic crises and political instability, but they also have substantial negative effects across a number of standard growth-related outcomes including health, education, and investment.

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"So the military acted. Some will term what it did as a coup d'etat. But this would be inaccurate. This political intervention came in response to a crisis; it was not its cause. Just as important, the events of recent days were not a power grab by Egypt's military. The country's soldiers wisely show little appetite for rule. They are entrusting temporary power with judicial authorities and setting up a timetable for political transition. This is as it should and must be."

–Richard Haass, President of Council of Foreign Relations, "Egypt's second chance," July 3 2013, Financial Times

1 Introduction

Do coups matter for economic development? After all, successful coups – i.e. where the military or state elites have unseated an incumbent leader – have occurred 232 times in 94 states since 1950. Moreover, around a quarter of these overthrew democratically elected governments (Powell and Thyne [81]). The prevalence of coups has not been lost on researchers, yet despite an abundance of research aiming to explain the occurrence of coups (see for example Acemoglu and Robinson [7], Collier and Hoeffler [34] & [35], Leon [65], Svolik [90]), much less research has focused on its economic effects.[1] Olsen [79], for example, claimed that coups "often bring no changes in policy." Londregan and Poole [68], in their panel data analysis, find no effects of coups on income.

By now, there is mostly a consensus that significant military influence in politics is detrimental for democracy (Dahl [37], Huntington [52]), Linz and Stepan [70]). Nonetheless, coups instigated by the military and other members of the security establishment in democracies are often met with ambiguity. Western governments have a long history of tacit support for coups overthrowing democratically elected governments, be it left-leaning governments in Latin America or Islamist governments in the Middle East and North Africa (Schmitz [87]). Commentators expressing support for coups often do so invoking extreme outcomes to represent the counterfactual to the coup; if Pinochet had not overthrown President Allende, the latter would have created a Castro-style regime in Chile; if the Algerian army hadn't annulled the elections in 1992, the Islamist FIS would have turned Algeria into an Islamist dictatorship in the Maghreb, and so on.[2] Similarly, the fault for the coup and preceding problems fall invariably upon the ousted leader, with the coup constituting an unfortunate, but necessary, means to rid the country of an incompetent, if not dangerous, leader.[3] Other commentators have pointed out the risks of allowing a military to intervene and dictate post-coup institutions to their advantage,

[1] Two exceptions are the papers on covert US operations during the Cold War by Dube, Kaplan, and Naidu [38] and Berger, Easterly, Nunn, and Satyanath [24].

[2] *"I think all intelligent, patriotic and informed people can agree: It would be great if the U.S. could find an Iraqi Augusto Pinochet. In fact, an Iraqi Pinochet would be even better than an Iraqi Castro."* ("Iraq needs a Pinochet", Jonah Goldberg, Los Angeles Times, December 14, 2006). For a discussion of the Algerian case, see "How to be different together: Algerian lessons for the Tunisian crisis", Open Democracy, February 11 2013, https://www.opendemocracy.net/arab-awakening/hicham-yezza/how-to-be-different-together-algerian-lessons-for-tunisian-crisis

[3] "Blame Morsy," Michael Hanna, Foreign Policy, July 10 2013, http://www.foreignpolicy.com/articles/2013/07/08/blame_morsy_egypt

a "Faustian" bargain likely to bring regime stability but no solution to the real underlying problems behind the conflict in the first place.[4] Yet others lament the human rights abuses following coups, and the inherent ineptitude of military leaders in running the economy.[5]

Coups tend to be endogenous events, and establishing a causal relation between coups and development is therefore a challenge. The unobservable likelihood of a coup, often referred to as 'coup risk' (Collier and Hoeffler [34] & [35], Londregan and Poole [68], Belkin and Schofer [23]), may be driven by many factors also affecting a country's development potential, such as weak institutions, the military's political power, social conflict, and economic crises etc.

In order to address this problem, I employ several empirical strategies including comparing success versus failure in coup attempts, matching methods as well as panel data techniques, using a dataset of coup attempts during the post-World War II era. These methods, in different ways, facilitate comparisons of development consequences of coups in situations with arguably more similar degrees of coup risk. Even though these settings do not necessarily represent random assignment of coup occurrence, they nonetheless serve to establish more reasonable candidates with which coups can be compared against.

Of significant importance is distinguishing coups when they occur in clearly autocratic settings from those where they overthrow democratically elected governments; I show that a coup overthrowing a regime in a country like Chad may have very different consequences than a military leader overthrowing a democratically elected president in a country like Chile. In the former, a coup appears to constitute the manner in which autocracies change leaders. In the latter, coups typically imply deeper institutional changes with long-run development consequences.

I find that, conditional on a coup attempt taking place, the effect of coup success depends on the pre-intervention level of democratic institutions. In countries that were more democratic, a successful coup lowered growth in GDP per capita by as much as 1-1.3 percent per year over a decade. In more autocratic countries, I find smaller and more imprecisely estimated positive effects. These results are robust to splitting the sample by alternative institutional measures, as well as to a range of controls relating to factors such as leader characteristics, wars, coup history, and natural resources. Despite the role of pre-coup GDP dynamics, results are not driven by mean reversion. Moreover, extending the analysis to matching and panel data methods yield similarly robust results. These methods further allow testing relevant adjacent hypothesis and indicate that the effects of successful coups conditional on a coup attempt are not driven by failed coups; nor do the effects of coups simply represent those of transitions to and away from democracy more broadly.

A commonly held view is that coups overthrowing democratically elected leaders often provide the opportunity for engaging in unpopular but much needed economic reforms. Not only do I show that coups fail at this but they also tend to reverse important economic reforms, especially in the financial sector. Furthermore, coups systematically lead to increased indebtedness, an overall deterioration in the net external financial position, and an increased propensity to suffer severe economic crises. A

[4] See for example "A Faustian Pact: Generals as Democrats", Steven A. Cook, The New York Times, July 5 2013; "Egypt Officially Declares What Is and Isn't Important", Nathan J. Brown, New Republic, July 9 2013, http://www.newrepublic.com/article/113792/egypt-president-adli-mansour-makes-constitutional-declaration

[5] "Egypt's misguided coup", Washington Post, July 4 2013, http://www.washingtonpost.com/opinions/jackson-diehl-egypts-misguided-coup/2013/07/04/64bd121c-e4b4-11e2-a11e-c2ea876a8f30_story.html

documented reduction in social spending suggests a shift in economic priorities away from the masses to the benefit of political and economic elites.

This paper adds to the political economics literature on coups in several ways. First, it emphasizes the importance of distinguishing a coup occurring in a democracy versus one occurring in an autocracy. These imply very different kinds of institutional changes and subsequently have different consequences for growth. Second, the robustness in the results across coup attempt analysis, matching, and panel data methods provides a useful way to estimate the development consequences of coups. Finally, previous discussions of coups' economic consequences tend to center around the subsequent implementation of free market policies (Becker [22], Barro [20]). This paper shows that, regardless of whether these policies affect growth or not, coups do not lead to significant economic reforms on average.

Of relevance to the study on coups is the literature on the relationship between institutions and development (Acemoglu, Johnson, Robinson [11]; Glaeser, La Porta, Lopes-de-Silanes, and Shleifer [45]; Rodrik, Subramanian, and Trebbi [83]). Coups regularly result in a switch from (and sometimes to) a democratic regime, and thus relates to the literature on the economic effects of transitions (Acemoglu, Naidu, Restrepo, and Robinson [8], Rodrik and Wacziarg [84], Papaioannou and Siourounis [80]). Although coups by definition, and especially when occurring in democracies, tend to depose leaders thru legally questionable and authoritarian means, coups do not always lead to prolonged military rule or sustained autocracy. Whereas in some cases, a coup ushers in a longer period of military dictatorship, in others they return to relative democracy within a few years. Moreover, coups often lead to significant institutional restructuring, such as the military-dictated constitutions in Chile 1980 and in Turkey 1982, which may continue to have consequences long after military rule has transitioned to civil, and even democratic, rule. The focus in this paper thus takes into account the fact that the military does not always continue to rule outright for very long, but instead alters institutions such that it does not have to rule directly.

Coups are drivers of leader turnover, and thus relates to research on leaders (Besley, Persson, and Reynal-Querol [26]; Besley, Montalvo, and Reynal-Querol [25]; Easterly and Pennings [39]; Jones and Olken [57] & [56]). Whereas this literature tends to draw inference from comparing development differences across leader tenures, the focus in this paper is on an event that may continue to influence development outcomes even after the tenure of the first post-coup leader has ended.

Another related literature is that examining the relationship between political instability and economic growth, which has often used coups as a proxy for instability (Aisen and Veiga [13] Alesina Özler, Roubini, and Swagel [16], Alesina and Perrotti [17], Barro ([19]), invariably finding negative correlations between coups and economic growth.[6] This paper differs from this approach by examining the effects of coups, not as a proxy for political instability but rather as a resolution to political crises conditional on the level of political instability.

The rest of this paper is organized as follows. In Section 2 I describe the typical characteristics of coups. Section 3 details the data used in the paper. Sections 4, 5, and 6 explain the coup attempt, matching and panel data methods used to estimate the development effect of coups and report the

[6]For a dissenting view see Campos and Nugent [28]

corresponding results. Section 7 pursues several potential mechanisms with which coups may affect development whereas Section 8 concludes.

2 The Coup d'État

> *"Frenchmen! you will recognize, without doubt, in this conduct, the zeal of a soldier of liberty, and of a citizen devoted to the republic. The ideas of preservation, protection, and freedom, immediately resumed their places on the dispersion of the faction who wished to oppress the councils, and who, in making themselves the most odious of men, never cease to be the most contemptible."*
>
> – Napoleon Bonaparte, "Proclamation to the French People on Brumaire," November 10, 1799 [7]

The first modern coup d'état is generally assigned to the "18 Brumaire" coup in 1799, in which Napoleon Bonaparte and his co-conspirators effectively seized power from *La Directoire*, the then executive body of the French state. Starting with the French revolution in 1789, the subsequent volatile years had resulted in a France impoverished by war and mired in bitter political conflict between various groupings of the state (Woloch [93]). During this period, the French Revolutionary Army was split into different factions, some supporting radical change, some supporting the status quo. After years the Reign of Terror, the Directoire had been set up as a reaction to previous years of dictatorship. The bicameral institution, split between the Council of Five Hundred and the Council of Ancients, became increasingly unpopular with its members prone to infighting and corruption – Britannica describes it as a "fatal experiment in weak executive powers." As Napoleon returned from his expedition to Egypt in 1798, a group of conspirators invited him to join in overthrowing the Directoire.

Although Napoleon at the time was widely popular, with a string of military victories to identify him as a strong and capable leader, the outcome of his coup was far from certain. During several instances it seemed chance had a strong role in determining the outcome – at one point, when confronting a large assembly of politicians in the Council of Five Hundred, Napoleon was physically assaulted and only escaped unharmed with the aid of his brother Lucien.

Even after the initial coup events, Napoleon's power did not reach its zenith until he was able to push thru a constitution that profoundly concentrated power with the First Consul of France, a position he already held. The new constitution allowed him to appoint the Senate, which thru legislation allowed him to rule by decree, and subsequent judicial reform aimed to turn judges into "into automata simply enforcing his code" (Glaeser and Shleifer [46]). Despite Napoleon's coming to power thru extralegal methods and the use of force, his power emanated thru a set of institutions that significantly concentrated power within the executive at the expense of any constraints previously in place.

Ever since Napoleon, numerous coups d'état have occurred throughout the world, for varying

[7] Napoleon's Proclamation to the French People on Brumaire, Napoleon Series, http://www.napoleon-series.org/research/government/legislation/c_proclamation.html

reasons and in different circumstances. Some, like the coups of Chile in 1973 and Turkey in 1980, have overthrown democratically elected governments, resulting in political institutions heavily influenced by authoritarianism with continuing military prerogatives in place even after a return to democracy. In others, like any of the many coups in Africa, coups have become the prevailing way in which state leaders alternate.

Coups tend to occur in conjunction with larger social conflicts between different groups in society. Two such opposing groups have often been workers and employers. The 1973 coup in Chile followed substantial social conflict over redistribution among the country's working class and its business elite; in Algeria in the late 1980s, much of the political Islamist support came from the large masses of unemployed men in urban areas, united in its anger over corruption and cronyism among the political elite. Many coups have thus been particularly supported by the economic elites, as a means to protect their interests (Stepan [89]). As early as 1852, Karl Marx explained the bourgeoisie's support for the authoritarian regime of Louis Napoleon (Napoleon III) as an abdication of political rights in exchange for protection of its economic rents (Marx [73]). It is thus possible that periods of contention, or crises, allow the military establishment the means to negotiate higher rents for themselves in return for supporting either of the conflicting parties.[8] As the military will often have vested economic and political interests in maintaining the status quo, it is therefore no coincidence that coup-makers are often from the armed forces and tend to side more often with existing elites.

Once a coup plan has been hatched, the execution tends to follow a similar, carefully-planned pattern. A selected group, usually officers or other members of the security establishment, surround or take over various strategic locations, such as the airport, TV or stations, parliament, cutting phone lines to influential individuals who may object, and neutralizing political opponents, which mostly means arresting them. Whether by radio or television, the coup-plotters typically announce their coup, blaming the deposed government and its members for the country's problems, while promising quick resolution to said problems.

At this point a sensitive period follows, as the remainder of the security forces and the population as a whole decide whether to accept the coup as fait accompli or whether to resist. Public support is often crucial, and many successful coups have received fair amounts of support among the populace, yet knowing the degree of support ahead of the coup can be tricky and small mistakes can have large consequences. In the Venezuelan coup attempt of 2002 which failed to oust Hugo Chávez, it did so partly due to loyalists within the military as well as Chávez's popularity compared to the coup-plotters. The coup attempt of Alberto Natusch in Bolivia in 1979 failed after unexpected resistance especially by the labor unions. In Spain on February 18th 1981, a coup attempt by Lieutenant-Colonel Antonio Tejero and 200 members of the Guardia Civil may have failed due to a misjudgment of King Juan Carlos support – the coup-plotters gave up shortly after the King of Spain publicly denounced the coup makers.[9] In Chile's 1973, the main obstacle to Pinochet's coup, Admiral Montero, a well-known loyalist to sitting President Allende, was supposedly incapacitated by cutting his phone lines and sabotaging his car. As such, history is full of coup attempts that have both failed and succeeded for

[8] For a theoretical analysis along these lines, see Acemoglu, Ticchi, and Vindigni [10].

[9] According to Colomer [36], one of the conspirators is said to have exclaimed "The next time, cut the King's phone line!"

reasons that were not always beyond the role of chance, and often unrelated to the country's economic growth potential.

When a coup is successful, a council of military leaders is often set up to determine the next couple of steps. At this point, the course of action differs widely. In cases where the coup leadership is firmly vested in one person, that person tends to quickly become the one in control. This sometimes led to strains between the new leader and the military, as in the case of Ziaur Rahman's rule in Bangladesh (1977-1981). Ziaur's strategy of creating a political power base around himself failed to the extent that he was assassinated in a coup attempt in 1981. The seizing of power of Rafael Trujillo in the Dominican Republic, Idi Amin in Uganda, or Muammar Gaddafi in Libya, over time led to personality cults around these military strongmen.

In cases where coup leadership was initially more diffuse among the members of the top brass, the new leadership tended to be less personalized, or at least the new leader was usually given a more limited mandate for governing. In the military regimes of Argentina (Fontana [41]) or Brazil (Stepan [88]), it was common to rotate leadership among the generals. Over the longer term, even though military leadership tended to prefer to not actively govern the country (Cook [32]), they nonetheless retained the ability to make sure their preferred civilian candidates came to hold senior positions. In Turkey, even after democratic elections for parliament were reintroduced after a coup, generals typically claimed the right to have their preferred candidate elected as president of the country. In yet other cases, such as Bangladesh under Ziaur and Ershad, these military leaders attempted to remodel themselves as civilian leaders by establishing political parties and actively participating in elections.

In Appendix Appendix A, I discuss in more detail three individual cases of coups overthrowing democracies: Algeria 1992, Chile 1973, and Turkey 1980, and section Appendix A-1 implements synthetic matching to evaluate the economic consequences of each of these cases.

3 Data

> *"Everywhere that the struggle for national freedom has triumphed, once the authorities agreed, there were military coups d'état that overthrew their leaders. That is the result time and time again."*
>
> –Ahmed Ben Bella, President of Algeria 1963-1965, ousted by military coup in 1965.

As measures for the occurrence of coups and coup attempts, I use the dataset collected by Powell and Thyne [81]. They define a coup attempts as "illegal and overt attempts by the military or other elites within the state apparatus to unseat the sitting executive" and distinguish a successful coup from a failed coup by whether the perpetrators were able to "seize and hold power for at least seven days." Over the period 1950-2010 this results in a total of 457 individual coup attempts in 94 countries, of which roughly half were successful.

Africa and Latin America saw the largest number of coups (37 and 32 percent of the total number of coups respectively), with the Middle East and Asia (13 and 16 percent respectively) trailing behind. Europe, with the fewest number of coup attempts, only experienced 2.6 percent of all coups during the period. Figure 1 shows the distribution of coup attempts over time and country as well as aggregated

by year (upper graph) and by country (right-hand graph) for coup attempts occurring in democracies as defined by Cheibub, Gandhi, and Vreeland [30] (hereby CGV) in the year before the coup attempt.

The period covered in this paper will be limited to the 1955-2001 period, due to the focus on estimating longer-run growth effects. The coup dataset is collapsed to annual levels and is matched with a panel of country-year data, described below.[10] The main focus will be on the growth in GDP per capita collected form the Penn World Tables and adjusted for differences in purchasing power parity (PPP). I calculate the growth rate as the difference in log GDP per capita between year $t+10$ and $t-1$. Calculating growth using the year before the coup attempt as base is done so as to not contaminate the outcome variable by immediate effects of the coup in period t. This ten-year window after the coup is further a result of the tradeoff between estimating longer-run development effects while leaving a large enough sample for analysis

Summary statistics of the control variables included are described in Table 1. These include the natural logarithms of GDP per capita and population at period $t-1$ respectively, as well as the lagged annual five-year, and ten-year growth rates (the latter two will be used in later robustness sections); all from the Penn World Tables.[11] In order to control for past coup experience, I also include the number of years since the last successful coup and the past number of coups.

As measures of military power and size, I include one-year lags of military expenditures as a share of GDP, the ratio of military personnel to the total population, and the lagged annual change in military expenditure per GDP. These variables are drawn from the COW Material National Capabilities.[12] Whereas the two former variables give some indication of the economic and social importance of the military in a country, the latter variable is included to proxy for whether there may be any recent cutbacks in military expenditure, which could result in strains between military and civilian authorities.

As proxies for the institutional environment I control for the past year's level of the Polity Index as well as its lagged annual change. In countries with less open institutions or where power is more concentrated with the executive, this may provide a more amenable environment for a coup. A recent change in such institutions could also have further upset the power balance risking a response from the military. I also control for social unrest using and index based on the first principal component of a number of indicators for domestic conflict from the Cross-National Time-Series Archive.[13] Many countries that eventually experienced a coup – both Chile and Turkey, for example – were preceded by extensive civil violence and unrest. Both Polity and civil violence data is from the Center for Systemic Peace database.[14] I also control for the number of past political transitions to autocracy from CGV.

A final control is leader tenure; the number of years the sitting executive has been in power the year before the coup. Leader tenure may proxy for actual political power (especially in a dictatorship) and popularity (especially in a democracy) thus making an attempted overthrow less likely to succeed.

[10] In seven instances, there were two successful coups in the same year and in the analysis these are treated as one successful coup per year. These were Benin (1965), Bolivia (1978), Brazil (1964), Republic of Congo (1968), Haiti (1988), Nigeria (1966), and Suriname (1980). Exclusion of observations with more than one successful coup has no bearing on the results.

[11] Data available at https://pwt.sas.upenn.edu/

[12] Data available at http://www.correlatesofwar.org/COW2%20Data/Capabilities/nmc3-02.htm#data

[13] The subindicators used to construct the index are general strikes, assassinations, government crises, purges, riots, revolutions, and anti-government demonstrations. Source: http://www.databanksinternational.com/

[14] Data available at http://www.systemicpeace.org/polity/polity4.htm

It may also give and indication of the stability of the regime – for example, the position of Turkey's prime minister changed 5 times in the same number of years preceding the 1980 coup. This variable is from CGV's classification of political regimes. Additional controls are added in Section 4.1.

A central focus in the analysis is estimating the effect across countries with more or less democratic institutions preceding the coup. An obvious way to do this would be to split the sample by democracies and non-democracies at $t-1$ and estimate separate effects in these two samples. Yet this would leave out many countries who, albeit not considered full democracies, still include certain democratic institutions. The interesting comparison, is the one between an elected, but perhaps not fully, democratic regime with at least some legitimacy versus a military-dictated regime. Moreover, in a number of cases, coups overthrowing democracies experience another coup a year or two just afterwards. These subsequent coups are likely a result of the same underlying political problems and in some cases, served to complete the process of a shift from democracy to autocracy.[15]

As coups are more likely to occur in countries with less democratic institutions overall and to allow for a shift from democracy to autocracy through more than one coup, I therefore set a lower bar for democracy in splitting the sample. For most of the main analysis I will employ CGV's classification of democratic regimes to split coups into two groups. The first group of countries, which I will refer to as "democracies" are those that at the time just before the coup had experienced at least one year as a full democracy in any of the last five years. Coup attempts in countries without a single year of democracy during the same time frame are classified as "autocracies". This way of splitting the sample is expanded further in section 4.1 where I show result being robust to alternative measures of democracy.

A key identification problem in estimating the effect of a coup on development is the challenge in separating a coup from growth-affecting factors making coups more or less likely. To illustrate this, Table 1 reports the difference in covariate means across country-years with and without coups. Column 4 shows that these differences are substantial and statistically significant for many variables. Countries where coups occur tend to be poorer with lower past growth, have experienced more coups in the past, shorter intervals between coups, fewer soldiers per capita, less democratic institutions, have had leaders in power for a shorter period of time, and geographic bias toward Africa and Latin America.

Comparing cases of successful versus failed coups given a coup attempts ought to imply comparing cases more similar to each other, and so reduce some of the imbalance in covariates relative to the comparison of successful coups and no coup events at all. To see if this is the case I plot standardized differences of means for these two types of comparisons in Figure 3 (defined as the difference in sample means between treated and control groups divided by the squared root of their average sample

[15] Examples include Guatemala in 1982, Nigeria in 1983, Thailand 1976, and Uruguay in 1973, which were all followed within less than three years by another coup. Especially the case of Uruguay in 1973-1976 is of interest here. The coup in 1973 served to shift power from parliament to the then sitting, and democratically elected, president Juan María Bordaberry, with the help of the military (Gillespie [49]). Political conflict between Bordaberry and the military then resulted in a following coup in 1976 which resulted in the military ousting Bordaberry. If the parameter of interest is the effect of coups overthrowing *democratically-elected leaders*, then the second coup is highly relevant, whereas if we're most interested in the effect of coups overthrowing *democratic institutions*, then the latter coup is less so. The subsequent alternating between different definitions of democracy in the subsequent analysis is precisely to show that the main effects documented in this paper are robust to these considerations.

variances) where points to the right of the origin denote covariates having higher values for treated cases and the opposite for points to the left of the origin. When comparing coups with cases with no coup events, denoted by the circles, the covariate imbalance is sizeable, especially for democratic regimes, which has a median standardized difference of means of 0.33. Restricting the comparisons to that of coup success versus coup failure conditional on a coup attempt, the filled circles, reduces the overall imbalance by two-thirds. In some cases, like leader tenure, there are remaining covariate differences, suggesting a role for regression adjustment in the subsequent analysis.[16]

4 Coup Attempts Results

> *"Once we have carried out our coup and established control over the bureaucracy and the armed forces, our long-term political survival will largely depend on our management of the problem of economic development. Economic development is generally regarded as a "good thing" and almost everybody wants more of it, but for us... the pursuit of economic development will be undesirable, since it militates against our main goal: political stability."*
>
> – Robert Luttwak, *Coup d'État – A Practical Handbook'*

Before getting to the results, it is useful to briefly illustrate the immediate consequences of a successful coup versus both unsuccessful coups and instances with no coups. Figure 2 shows the coup consequences of coups in the same year on leader turnover, military leader turnover, incidence of leader death, as well as changes in democracy, executive constraints, and social unrest. The important point in this figure is that it illustrates the systematically different nature of coups depending on whether they overthrow democratically-elected leaders or not. Coups overthrowing democracies, compared to autocracies, are much more likely to see a switch from a civilian to a military leader, large changes in political institutions, lower likelihood of leader deaths, and to some extent also less violence overall. This is consistent with coups overthrowing democracies serving mostly to change political institutions whereas those overthrowing autocracies appear mostly to – sometimes terminally – remove leaders. For the failed coups, there is very little difference between those occurring in democracies or autocracies.[17] As coups exhibit such different characteristics based on the type of regime overthrown, I will estimate separate effects of coup success for democracies and autocracies.

As a graphical exposition to the results below, Figure 4 shows year-demeaned averages of GDP per capita for a decade-long window around a coup attempt, where the series are indexed to the year before the coup. The upper graphs show the successful coups group compared to its pre-coup trend. For both democracies and autocracies coups result in lower income trajectories than in their pre-coup periods. The bottom two graphs add the average income per capita for the failed coup cases. For democracies, successful – compared to failed – coups have similar ten-year trends although they appear to exhibit somewhat higher growth in the five-year period preceding the coup. The divergence in income paths after the coup events are clear, with successful coups performing significantly worse.

[16] I will employ matching techniques to explicitly reduce the covariate imbalance in Section 5.

[17] As can be seen in the figure, leader deaths are more likely in failed coups against autocracies than in failed coups against democracies, but this is also because leader deaths are more likely even without any coup attempts.

For autocracies, the pre-coup trends converge in the last five years before the coup and exhibit no discernible difference in income paths after the coup.

Somewhat noteworthy is that, although there appears to be evidence of economic slowdowns in the run-up to coup events for both autocracies and democracies, the former exhibits a longer-term *downward* pre-coup trend while the latter exhibits a *positive* one. This is another reason for thinking of coups in autocracies versus democracies as different types of events. In autocracies, coups tend to occur following longer periods of economic decline, whereas in democracies they appear more to follow periods of economic growth leading up to an economic crisis. Incidentally, both Chile and Turkey went through periods of rapid growth leading up to the crises that bore the coups of 1973 and 1980 respectively (see Figure A-1).

To further refine the analysis, I estimate the effect of a successful coup on growth using the following regression specification:

$$\Delta y_{i,t+10} = \alpha + \beta S_{it} + \mathbf{X'}_{i,t-1}\boldsymbol{\gamma} + \delta_g + \zeta_t + \varepsilon_{it} \tag{1}$$

where $\Delta y_{i,t+10} \equiv ln(y_{i,t+10}) - ln(y_{i,t-1})$ is difference in the natural logarithm of GDP per capita between year $t+10$ and $t-1$ in country i, S_{it} is the incidence of a successful coup in year t, and $\mathbf{X}_{i,t-1}$ is a vector of controls in period $t-1$. The specification includes fixed effects for years (ζ_t) and geographic region (δ_g). Furthermore, I add fixed effects for the number of coup attempts per year – as pointed out by Jones and Olken [57] in their study of assassination attempts, a likely assumption is that the likelihood of success is increasing in the number of attempts per year.

The key identification assumption in this empirical design is that, conditional on a coup attempt and the set of covariates, $\mathbf{X}_{i,t-1}$, any omitted factor which systematically affects coup success has no bearing on an economy's growth prospects. To the extent that $E[\varepsilon_{it}|S_{it}, \mathbf{X}_{i,t-1}] = 0$, the effect of a successful coup is

$$\beta = E[\Delta y_{i,t+10}|S_{it} = 1, \mathbf{X}_{i,t-1}] - E[\Delta y_{i,t+10}|S_{it} = 0, \mathbf{X}_{i,t-1}] \tag{2}$$

This expression illustrates the estimand as the treatment effect of a successful versus a failed coup conditional on the occurrence of a coup attempt. The analysis of a subsample of coup attempts – rather than the full sample – allows comparisons of treatment and control groups with more similar degrees of coup risk.

Table 2 presents the main effects of coups on growth, as estimated using equation (1). Each odd column represents an estimate of the effect with only year and region controls whereas even columns include the full set of controls described in the previous section. Splitting the sample into the more autocratic versus more democratic reveals two groups with rather different growth rates. The former experienced an average ten-year growth rate of 6 percent in log points, the latter 18 percent in log points.

In Panel A I report a naive regression including both observations with coup attempts as well as those without. These estimates are either close to zero and insignificant columns (1-4) or are sensitive to the inclusion of controls (columns 5-6). Given the shown large differences in pre-coup

covariates between coups and non-coups when also including non-attempts, these estimates are of limited causal relevance. The same specifications in Panel B include only coup attempts, where in the first two columns coup success has little bearing on growth for the sample including all political regimes, with estimates statistically insignificant and relatively small in magnitude. Splitting the sample into democracies and autocracies, however, reveals estimates of opposite signs. In columns 3-4, for countries considered more democratic, the estimate is -8.5 percent without, and -14.2 percent with, covariates. Both estimates are statistically significant at conventional levels. In countries considered more autocratic, the estimate is 2.4 percent without, and 8.2 percent with, covariates, and the latter estimate is statistically significant. Using the estimates with controls in columns 4 and 6, this represents an annual *reduction* of around 1.3 percent for democracies and an annual *increase* of 0.74 percent for autocracies. Both estimates are of significant magnitudes, suggesting that successful coups has considerable growth effects, but of opposite signs depending on the pre-coup type of political regime.

In the full sample, as well as the one including only autocracies, there are always at least two coup attempts per year. In the democracy sample, in 10 out of 98 cases there is only one attempt per year. Excluding one-per-year coups have no bearing on the magnitude of the estimate but improves precision somewhat; the estimate of a successful coup is then -0.142 (with a standard error of 0.049).[18]

In the coup attempts analysis, the opposite signs in coup effects on growth depending on the political regime is consistent with the idea that coups occurring in democracies and autocracies represent very different forms of political shocks. In autocracies, coups' role as a modus operandi for leader turnover may thus marks the effect a new ruler, with possible positive growth consequences. In the more democratic countries, it is likely the sharp institutional changes driving the growth effects.

4.1 Robustness Checks

The robustness of the main results is explored in Tables 3 and 4. The first of these two tables compares the baseline result in column 1 with a range of other specifications in columns 2-11. Column 2 adds additional coup-related controls: the total number of any previous coup attempts, the number of years since the last coup attempt, and two controls for a country's global military rank – both in terms of expenditure and personnel respectively – to control for factors related to military's strength as well as its political past. Column 3 adds additional leader controls including pre-coup leader age, the number of instances of irregular leader turnovers in the last five years, as well as a dummy variable for whether the leader implemented any radical change. All these variables except the last one are from the Archigos dataset.[19] The variable on radical policy dummy is from Colgan [33] and takes on the value of one if at least three of the following policy changes were implemented: major changes to the constitution, adoption of Marxism or fascism as a political ideology, change in official state name, major changes in property rights law (such as nationalization or land reform), major policy changes with regards gender, changes in state religion, and the creation of any government council

[18] The number of clusters is 35 in the democracy sample regression and 58 in the autocracy sample regression. Adjusting the standard errors for clustering using Cameron, Gelbach, and Miller [27] wild bootstrapping in Panel B's columns 4 and 6 results in a p-values of 0.032 (compared to 0.01) and 0.05 (compared to 0.039) respectively. These results are available on request.

[19] Available at https://www.rochester.edu/college/faculty/hgoemans/data.htm

with significant powers. This last variable is meant to capture any controversial reforms that may have emboldened political elites and the military to act against the government. Column 4 includes additional controls for whether a country was involved in any civil, interstate, or extrastate warfare in period $t-1$ using the PRIO/Uppsala Armed Conflicts Database as well as the number of peace years preceding the coup. An unpopular war may serve as a strong motive for a coup d'etat. Column 5 adds controls for years of schooling as well as the share of population with completed tertiary education using data from Barro and Lee [21]. Column 6 adds pre-coup controls for the oil and gas value as a share of GDP, the oil price, and the lagged five-year change in the oil price, all from Ross [86]. Neither of the above mentioned specification checks affect the coefficients in any meaningful way.

Columns 7 and 8 weights observations differently than in the baseline specification; by the inverse number of total coups preceding the coup in the former column; and by the number of years since the last successful coup in the latter. The former specification thus puts greater weight on countries where coups are less common, essentially giving each country equal weight. The latter specification instead puts more weight on instances preceded by longer periods of non-intervention. Although in the latter of these columns the estimate on successful coup is only marginally statistically insignificant, the magnitude remains unchanged. These two specifications therefore suggest that the baseline effect is not driven by a few particularly coup-prone countries, such as Argentina, Bolivia, or Sudan; nor is it driven by "follow-up" coups, like those in Benin, Ecuador and, or Syria.

The last two columns adds region-decade fixed effects in column 9 and a stratified propensity score in column 10 (similar to Jones and Olken [57]. In the former, there may be region-specific factors that make coup success for more likely in different decades (like Latin America in the 1960s and 1970s for example). In the latter column, the propensity score is obtained by estimating a probit regression of successful coup instances on the covariates from the baseline regression in column 1, then splitting the predicted probability into ten dummy variables for every decile of the propensity score. These dummies are then added to the growth regression in column 9. Whereas these specifications lower precision of the estimates, they do not affect the magnitude for democracies in any meaningful way. The baseline results are also robust to controlling for past growth rates over longer periods – 5 years and 10 years – as can be seen in column 11. Whereas the estimates of coups in democracies remain largely stable and significant, the corresponding estimates for autocracies are somewhat less robust.[20]

Panel A of Table 4 varies the measure used to separate the two groups of democracies and autocracies from each other. Columns 1 and 2 divide the groups by whether a country had at least one year of CGV defining it as a democracy over 5 years (column 1, i.e. the baseline estimate) and 10 years (column 2). In column 3, the sample is split by whether CGV defined the country as a democracy in $t-1$. In the following two columns, I split the sample using a lagged average Polity score above 0.5 (i.e. when Polity's $DEMOC$ indicator is larger than the $AUTOC$ indicator) over 5 years (column 4) and 10 years (column 5) respectively. Column 6 splits the sample by whether a country had been a CGV democracy in the last 5 years or whether the lagged five year change in the Polity variable increased by at least one standard deviation (0.26), which incidentally also is very close to the 0.3 value

[20]The results are also robust to several measures of international influence and economic links with either of the US or the USSR. These estimates are available on request.

that PolityIV qualifies as signifying a "regime change".[21] This last split groups democratic countries together with those having made significant strides towards democracy, which would include the case of Algeria in 1992 discussed in Section Appendix A.

For the sample of autocracies, the estimates remain positive although some lose significance and vary somewhat in magnitude. For the sample of democracies, none of the ensuing estimates deviate meaningfully in magnitude – albeit in statistical significance – and all are close to the baseline estimate of a 14 percent drop in growth over a decade.

Panel B of the table reports results from sample splits using alternative variables. Countries that are relatively more democratic tend to be both richer, more educated, and more populous. Of additional interest is to what extent the effect of coups vary by the availability of natural resources. Furthermore, recent work by Marinov and Goemans [72] suggest the effects of coups may systematically differ depending on whether the coup occurred during or after the Cold War. Columns 1-6 therefore splits the sample by a dummy for natural gas or oil resources (column 1), median GDP per Capita (column 2), years of schooling (column 3), and population (column 4), past five-year growth (column 5) respectively. The final column 6 splits the sample by whether coup occur before or after the end of the Cold War in 1989.

As can be seen from results in Panel B, in none of these alternative sample splits are there any statistically significant growth effects of successful coups that may explain why there are differing effects by political regime. In particular, the absence of any significant effects based on past growth in GDP suggests the results are not driven by mean reversion. Thus, the result that successful coups affect growth is robust to a large degree in democracies, to a lesser degree in autocracies, and unlikely driven by dimensions correlated with democracy.

Finally, Figure 5 shows how coups affect growth in the short run versus the long run by varying s in the outcome variable $y_{i,t+s} - y_{i,t-1}$ in using the same specification as in equation 1 including also lagged five-year growth. Whereas for all regimes and autocracies the estimates tend to be either close and statistically indifferent from zero (in the former) or positive but short-lived (in the latter), for democracies the estimates grow with the window used to calculate the growth rate. The effect of coups here is marginally significantly positive in the first year, effectively the year of the coup, consistent with the idea that coups serve to end political conflicts and crises and may thus have positive but short-lived effects. But when growth is observed over a longer period, the effect turns negative and remains statistically significant throughout the fifteenth year after the coup.

5 Matching Results

In the previous section, comparing coup success conditional on a coup attempt resulted in units more observably comparable in terms of covariate imbalance. Under the assumption that coup success is independent of potential growth conditional on a coup attempt and covariates, this provides a meaningful estimate of the effect of coups. But if coup attempts exhibit characteristics making them very different from cases without coup attempts, this estimate may differ from the average treatment

[21] See "PolityIV Political Regime Characteristics and Transitions, 1800-2013 Dataset Users Manual," http://www.systemicpeace.org/inscr/p4manualv2013.pdf

effect of coups among the full sample of data available. It is therefore useful to complement this with additional strategies taking advantage of the full dataset available. The matching methods used below also take advantage of the non-coup-attempts to construct control units more comparable to those experiencing coups.

The assumptions required for matching estimators to identify the effect of coups is that coup assignment is independent of potential growth, conditional on the covariates, and that the probability of experiencing a coup is bounded away from zero and one (Imbens and Rubin [53], Imbens and Wooldridge [55]). In this section I use three matching methods: the bias-corrected matching estimator of Imbens and Abadie [3], the inverse probability weighting estimator (Hirano, Imbens and Ridder, [51]), direct matching on the propensity score, as well as entropy balancing (Hainmueller [50]), .

As for the first method, it uses Abadie and Imbens [3] matching with replacement and bias adjustment, improving upon simple matching estimators by adjusting for remaining differences within exact matches using linear regression, while also allowing for estimating standard errors robust to heteroskedasticity. The second method, the inverse probability weighting (IPW) estimator (Imbens and Wooldridge [55], involves first estimating a propensity score using probit for the incidence of the treatment $\widehat{P_{it}} = Pr(S_{it}|X_{i,t-1})$, then running a regression of the outcome on the treatment weighting observations by

$$\widehat{w_{it}} = \frac{S_{it}}{\widehat{P_{it}}} + \frac{(1 - S_{it})}{1 - \widehat{P_{it}}} \tag{3}$$

possibly adding the covariates to the regression. I also show results for direct nearest-neighbor matching on the propensity score. The final matching method used here is the entropy balancing scheme suggested by Hainmueller [50] which uses maximum entropy reweighting scheme that calibrates unit weights so that the reweighted treatment and control group satisfy prespecified balance conditions to incorporate information about known sample moments. The weights are then used in a similar fashion as in the IPW estimator.

The covariates used to match treated and control units are the same continuous variables as in Section Appendix A with the addition of decade-specific time fixed effects. Also, I match directly on five lags of log GDP per capita to control for GDP dynamics, following Acemoglu et al. [8]. For all four estimators, I implement the matching separately for the full, the autocratic, and the democratic sample respectively. In the case of entropy balancing, for the sake of reaching convergence, I match only on the continuous covariates, while controlling for time fixed effects in the ensuing regression.

Matching treated and control units in a panel dataset may result in matches to the same country at different time periods. This is not a problem in general but poses a complication if there's extensive matching of treated units to control units that are both from the same country as well as temporally adjacent to the coup, which would make the estimates hard to interpret. For this reason I exclude observations that, for a given country, are within ten years before or after a coup in the same country. Thus, I allow matching with same country but only in periods where that match is far enough away in time from a coup.

Figure 6 shows the standardized differences in means of the covariates for the four matching estimators compared to the unmatched data. All forms of matching improves substantially upon the

imbalance, by at least two thirds but often more, compared to the unmatched data.

Table 5 reports the matching results on decade growth in GDP per capita for the full sample in Panel A, democracies in Panel B, and autocracies in Panel C. The bias-corrected matching estimates yield close to zero and statistically insignificant estimates for the sample of all regimes as well as that of autocracies, whereas they are negative and overall precisely estimated for democracies at roughly equal magnitudes as in the comparison of coup attempts. Changing the number of nearest neighbor matches from one in column 1 to four in column 2 results in a somewhat larger but similar estimate, while adding region-decade fixed effects (column 3) to the covariates used for matching results in an almost identical estimate as in first one. Varying the definition of democracy using the binary CGV (column 4) or Polity (column 5) measures, or a modified Polity indicator (column 6) which also includes among the democracies any country that experienced a larger than 0.3 increase in the Polity indicator over the past five years, does not affect the estimates meaningfully. The final estimate using the bias-corrected matching estimator includes only the coup attempts, and is again near-identical to the main estimate in column 1.

The remaining columns report estimates using the IPW (column 8), propensity score matching (column 9), and entropy balancing (column 10) estimators. These yield consistently negative estimates for democracies but interestingly, they now also show negative estimates for autocracies. The variability of the effects of coups in autocracies thus contrast with the stable negative effects of coups found in democracies.

As in the previous section using only coup attempts, the extent to which these matching estimates reflect causal effects is only as strong as the conditional independence assumption underlying it. The strength of the combination of analyzing coup attempts and using matching, however, is that they approach the identification assumption from different angles, the former by comparing units with arguably similar propensity to experiencing a coup, the latter by finding observably similar units in a more flexible way.

The matching approach further allows testing of several adjacent hypothesis bearing on the main result. These include the effects of coup attempts and failed coups, as well as that of political transitions. The two former are useful as they may shed light on the the relevance of comparing coup attempts, and whether the effect of a successful coup conditional on a coup attempt measures the effect of coup success or failure per se. The latter, testing the effect of political transition, may tell us to what extent the effects of successful coups are similar to those of transitions from one state to another.

Table 6 reports results of the effects of five different treatments: successful coups (columns 1-2), failed coups (columns 3-4), any coup attempt (columns 5-6), and political transitions (columns 7-10) to and away from democracy. The latter are implemented using two alternate definitions of democracy and transitions respectively. In columns 7-8, I use the CGV [30] measure of democracy to define whether there has been a transition from one political system to another and whether the pre-coup political system was democratic or not. In columns 9-10 I define the transition variable as taking a value of one if Polity IV's REGTRANS variable assigns an event as constituting either a "transition" or a "regime change" and zero otherwise. For both the CGV and Polity measures of transitions, Panel A estimates the effect of any political transition, Panel B the effect of transitions from democracy to

autocracy, and vice versa in Panel C. All results in this table are estimated using nearest neighbor matching, with one nearest neighbor in odd columns, and 4 nearest neighbors in even columns.

In Panel A, none of the treatments yield any robust or significant estimates. For the democratic sample in Panel B, however, the previously reported strong negative results from successful coups contrast with – when failed or attempted coups are the main treatments – more imprecise estimates much closer to zero. Moreover, the negative estimates of political transitions in the last four columns are less than half the magnitude of the effects of coups and only marginally significant in one of the four columns. It is thus unlikely that the estimated effect of successful coups simply represents the effect of democratic reversals more generally. This is consistent with a key implication of coups being not necessarily the formal change in political system, but the deeper institutional effects coups overthrowing democracies have. Furthermore, the absence of an effect of failed coups is consistent with the comparison successful and failed coup attempts in Section 4 reflecting an economically relevant effect of the former and not the latter. In Panel C, however, a failed coup attempt against a sitting autocrat exhibits a negative significant estimate. It is thus possible that positive effects of successful coups in autocracies in Section 4 could reflect the negative effects of failed coups.

To complement what up until now been a cross-sectional analysis, the following section shifts the empirical focus to the panel structure of the data.

6 Panel Data Results

6.1 Within-Attempt Effects of Coups on Growth

To expand the analysis of coup attempts from Section 2, in this section I transform the coup attempts data into a panel dataset where each panel unit is the country-attempt period and the within-panel observations are ordered as time period before or after the coup attempt. More precisely, I exclude all observations except the coup attempt incidences, then – using the lags and leads of the outcome and covariates – I reshape the data into a panel dataset with country-coup-attempt as the panel unit and the time period being time from coup attempt, allowing for ten periods before the attempt and twenty periods after the attempt. Shifting the analysis to a comparison of pre- versus post-coup period, I then specify the following regression specification, using GDP per capita in levels as the outcome following previous research (Acemoglu, Johnson, Robinson, and Yared [6]):

$$y_{jt} = \alpha_0 + \sum_{s=1}^{K} \alpha_s y_{j,t-s} + \gamma \bar{S}_{jt} + \sum_{s=1}^{K} \mathbf{X'}_{j,t-s} \boldsymbol{\delta_s} + \zeta_j + \theta_t + \varepsilon_{jt} \quad \forall t \in [-10, T] \tag{4}$$

where y_{jt} represents the log GDP per capita for country-coup-attempt j at time t, $\bar{S}_{jt}$ is an indicator taking the value 0 before a successful coup and 1 forever after (and thus zero for all time periods in an unsuccessful coup attempt), $\mathbf{X}_{j,t}$ is a vector of control variables, and ζ_j and θ_t represent country-attempt and time fixed effects respectively. The estimate γ_s thus corresponds to the effect of post-coup regimes relative to the average income per capita for that country-attempt period. The strength of

this approach is twofold: on one hand, it allows estimating the effect of coup success conditional on a coup attempt while holding many (possibly crucial) factors constant over the attempt-period that could affect the likelihood of coup success as well as potential growth. It also abstracts away from what time period to use in calculating the growth rate as the outcome.

I estimate equation 4 with one and five lags as well as 10 and 20 periods after the coup respectively in Table 7 using as covariates the same number of lags of log GDP per capita, log population, social unrest, Polity index, leader tenure, years since last coup, number of previous coups, military expenditure, military personnel per population, number of previous changes to autocracy, and fixed effects for time and the coup attempt respectively. Panel A is a 20-year panel ($T = 10$), while panel B is a 30-year panel ($T = 20$) with even columns reporting results with 5 lags of the covariates and odd columns reporting only one lag. The reported coefficients of coup success are multiplied by 100 to ease interpretation, and standard errors are robust and clustered by country-attempt period.

In all cases, the cumulative estimates of lagged income per capita is statistically less than one (suggesting there is no unit root in the empirical process for log GDP per capita). The effect of a post-coup regime is negative in the sample including all political regimes, but of different sign depending on whether the coup occurs in an autocracy or a democracy. Estimates are trivially small for autocracies in columns 3 and 4, whereas for democracies in columns 5 and 6 the estimates are consistently negative and statistically significant at conventional levels. Regardless of the number of lags for the covariates, income per capital is between 1.3-1.9 percent lower after successful coups compared to the cases where coups fail. The serially-correlated nature of GDP further implies that this will accumulate over time, and the cumulative long-term effects can be estimated as

$$\frac{\hat{\gamma}}{1 - \sum_{s=1}^{K} \hat{\alpha}_s} \tag{5}$$

where hat implies estimated parameters. For the estimates in columns 5 and 6, this means that in the long-run successful coups reduce income per capita by between 12.2-15.5 percent. These estimates are consistent with cross-sectional estimates as long as the decade reduction in growth remains persistent (as figure 5 seemed to suggest).

These complement the previous analysis of coup attempts by holding constant factors that may affect coup success and potential growth over the coup-attempt period, such as slow-moving institutional factors, international acceptance for overthrowing democratic leaders etc, while retaining the focus on cases of severe economic and political crisis. In the following section, I relax the assumption that the effect of a coup is constant for a specified period after the coup while also allowing comparisons with country-years without attempts.

6.2 Within-Country Effects of Coups on Growth

In this subsection I use panel data with country fixed effects and country-specific trends to estimate the effect of a coup. Instead of specifying the treatment variable as a before-after dummy as in the previous section, I allow coups to have lagged effects on income per capita and use the following

regression specification (following the example of Cervellati et al [29] in estimating one panel regression with interactions instead of separate case-specific regression):

$$y_{i,t+1} = \alpha_0 + \sum_{s=0}^{10} \Big\{ (\alpha_s + \alpha_s^D D_{i,t-s}) y_{i,t-s} + (\beta_s + \beta_s^D D_{i,t-s}) A_{i,t-s} + (\gamma_s + \gamma_s^D D_{i,t-s}) S_{i,t-s} + \\ + \mathbf{X}'_{i,t-s}(\boldsymbol{\delta_s} + \boldsymbol{\delta_s^D} D_{i,t-s}) + \lambda_s D_{i,t-s} \Big\} + \zeta_i + \theta_t + \phi_i t + \varepsilon_{it} \tag{6}$$

where $y_{i,t+1}$ is log of GDP per capita in $t+1$, A_{it} is the incidence of a coup attempt in year $t-s$, S_{it} is the incidence of successful coup, $\mathbf{X}_{i,t-1}$ is a vector of controls, which as the second line in the specification indicates, is then interacted with the democracy dummy $D_{i,t-s}$. The specification includes fixed effects for years (θ_t) countries (ζ_g) and country-linear trends ($\phi_i t$). The country-linear trends have an important role in capturing the longer-run differences in political-economic development paths that could lead some to prosperity and absence of coups and others to poverty and coup occurrence (see Acemoglu et al [6] for the context of income and democracy).[22]

The interpretation of the coefficients $\hat{\gamma}_s$ has a similar interpretation as in previous sections, namely the effect of a successful coup at $t-s$ conditional on a coup attempt. The interpretation of the coefficient $\hat{\beta}_s$, however, is not necessarily the effect of a coup attempt, but also captures various elements of coup risk, political instability etc. In the case of this latter coefficient, given the imbalance in covariates observed in Figure 1 it is much more difficult to distinguish the effect of a failed coup from the effect of the factors that make coup attempts more likely, although it is nonetheless an important correlate of such factors. The estimate of interest is the sum of coefficients $\sum_{s=0}^{10} \hat{\gamma}_s$ and $\sum_{s=0}^{10} \hat{\gamma}_s^D$, i.e. the cumulative effects of coups occuring in autocracies and democracies respectively. These estimates indicate the effect of a coup on income per capita over a period of ten years.

In Table 8, column 1, I first estimate a regression without the coup attempt, $A_{i,t-s}$, terms and without any interactions with democracy, reporting the sum of coefficients representing the effect of coups among all political regimes, which is small and statistically insignificant. I also report the p-values of tests whether the sum of coefficients is statistically different from zero in square brackets. In column 2, I continue to exclude the $A_{i,t-s}$ terms but now include interactions with democracy, resulting in a cumulative estimate of coups in democracies of around -15 percent. Including the $A_{i,t-s}$ and interaction terms in column 4 results in a similar, albeit somewhat larger, estimate of -20 percent. The individual coefficients for the s lags of the $A_{i,t-s}$ and $S_{i.t-s}$ terms are plotted in Figure 7, showing that, for the latter, both shorter as well as longer lags of coups are significantly negative, whereas lags of coup attempts, as well as coup success in autocracies hover around, and are statistically indifferent from, zero (consistent with the matching estimates in Table 6). Moreover, adding quadratic country-trends (column 5), extending the number of controls (6), or varying the definition of democracy (7-9) has no meaningful bearing on the result that coups result in negative growth when overthrowing democracies. Interestingly, the cumulative estimates on (failed) coup attempts, although they have

[22] As the average time period within panels is around 30 years, any mechanical bias in the estimation of lagged dependent variables using the within estimator is likely to be very small. Judson and Owen [58] suggest that the Nickell bias is of the order of 1 percent for this length of the panel.

the opposite signs as successful coups, are close to zero and are always statistically insignificant. As a result, estimates of the total effect of coups overthrowing democracies (unconditional on a coup attempt) is also negative, statistically significant and of similar magnitude as that of a coup conditional on an attempt.

Applying the same formula for the long-term effect of a coup as in section 4, using the -0.224 estimate from column 4, results in a very large long-term estimate of -0.224/(1-0.734)=-0.84. This corresponds to the permanent effect of coups if a country would experience a coup *every year forever*, a highly unlikely situation and taken literally this long-term estimate is rather uninformative. Instead, a more realistic measure is to think of the modified estimate -0.224/10=-0.0224 as the average annual effect of a coup over a ten year period and -0.084 as the long-run effect of coups occurring once every 10 years.

Regardless of whether an analysis of coup attempts, matching, or panel data strategies are used, I arrive at the same conclusion as to coups' growth effects in that, when they overthrow democratic regimes and regardless of the existence of political and economic crises, this subsequently leads to lower growth. This contradicts the view on coup regimes as being necessary to implement growth-inducing economic reforms and other policies in crisis-prone environments with weak democratic institutions. As such, of interest is to examine the effects of coups on related economic and political outcomes that could be considered as possible mechanisms for growth.

7 Potential Mechanisms

> *"Only those who believe in democracy are entitled to democratic freedoms."*
> – Kenan Evren, Chief of the General Staff 1978-1983, President of Turkey 1980-1989.

In this section I examine several possible channels in which coups could affect development. I specify the following regression specification for the outcome $z_{i,t+1}$

$$z_{i,t+1} = \alpha_0 + \sum_{s=0}^{10} \Big\{ (\mu_s + \mu_s^D D_{i,t-s}) z_{i,t-s} + (\alpha_s + \alpha_s^D D_{i,t-s}) y_{i,t-s} + (\beta_s + \beta_s^D D_{i,t-s}) A_{i,t-s} + (\gamma_s + \gamma_s^D D_{i,t-s}) S_{i,t-s} + \mathbf{X'}_{i,t-s}(\boldsymbol{\delta_s} + \boldsymbol{\delta_s^D} D_{i,t-s}) + \lambda_s D_{i,t-s} \Big\} + \zeta_i + \theta_t + \varepsilon_{it}$$

which is identical to equation 6 except for the additional lagged $z_{i,t-s}$ terms and the omission of the country-linear trend.[23] Table 9 reports results of the effect of coups on the investment share of GDP (from Penn World Tables), public (non-military) expenditure per GDP (from the World Bank), log infant mortality (the World Bank), years of schooling (Barro and Lee [21]), as well as an index measure of economic reforms. The latter is an index of economic reforms created by Giuliano, Mishra and Spilimbergo [47], which is itself an average of several indices for the product market, agriculture, trade, financial system, current account and capital account sectors. These are all variables either

[23] Adding linear trends does not meaningfully change the magnitude of the estimates but tends to increase standard errors substantially as the number of observations is significantly lower for most of the outcomes in this section.

thought to be conducive to economic growth or representing different components of it, with little need for introduction. I also add three outcome measures of economic crises, a highly relevant intermediary outcome as economic crises are often the reason for political instability and drivers of coups. The first measure is a dummy taking the value 1 if per capita growth is negative that year and zero otherwise. The second is a dummy variable for extreme values of inflation taking on the value 1 if consumer inflation is in the 10th or 90th percentile (i.e. either extreme deflation or extreme hyperinflation) and zero otherwise. The third is an indicator for the occurrence of a systemic bank crisis (significant bank runs, losses in the banking system, bank liquidations etc) as measured by Laeven and Valencia [63]. The last two outcomes in the table provide measures of international finance policies, the net external position (net total assets per GDP) as well as indebtedness (net debt per GDP), both from Lane and Milesi-Ferretti [64].

Except for the outcome related to economic reforms, the table shows coups overthrowing democracies having invariably detrimental effects on these outcomes: lowering investment and schooling, increasing infant mortality and the incidence of economic crises, while also deteriorating countries' international financial positions and increasing indebtedness. As for reforms, estimates are negative, albeit statistically insignificant, suggesting that if anything coups lead to less economic reforms. The effect on average reforms furthermore mask some variation in the sectors reforms occur in, and Table 11 shows the effect of coups being particularly severe on reforms in the financial sector, an important driver of economic growth (Levine [66]). This is of significance as it runs contrary to an explanation of coups generating low growth over a short-to-medium run because of implementing reforms that only results in growth returns in the longer run. This particular result shows that this is unlikely as I document coups not only failing to promote reforms, but in several cases even hindering them.

Equally relevant is the cutbacks in public non-military spending and, to the extent that these mostly represent social spending, this is (despite the lower number of observations in this regression) consistent with the view of coups as elite entrenchment (Acemoglu et al [10]) pushing policies away from spending on areas like health, education (as evidenced by columns 3 and 4) and poverty alleviation.

If certain political problems, like instability, crises etc, lead to coups then how do coups themselves affect these outcomes? As documented by scholars of coups (Finer [40] and Luttwak [71]) achieving political stability is often a main goal. For this purpose I investigate coup effects on a number of outcomes, including not just democracy itself but also incidences of military rule, social unrest, political transitions, irregular leader turnover, state failures, subsequent coups, as well as relations with the US.

The first two columns has as the outcome democracy (as defined by CGV) and military rule (as defined by Geddes et al [43]) at time t+1. These may seem obvious but they are there to show that coups overthrowing democracies are clearly autocracy- and military rule-promoting, and in contrast to what coup leaders typically proclaim, the coups themselves do not lead to democratic outcomes as the negative estimates for democracy and positive for military rule show. The subsequent outcomes show that, except for reducing social unrest (a rather unsurprising result given the often autocratic nature of the post-coup regimes), coups tend to increase the likelihood of irregular leader transfers (as defined by Goemans et al [48]), and although the estimates on subsequent coups in columns 7 and 8

are not statistically significant, their magnitudes are considerable.[24]

The last two outcomes relate to relations with the US, a highly relevant outcome given the country's documented propensity to engage in regime change through coups (Berger, Easterly, Nunn and Satyanath [24], The first is the total US trade and aid as a share of a country's GDP and the second is the existence of US sanctions against the country in question. For the former, there is no significant effect of a coup on increased economic relations with the US, but there is a clear increased chance of being under US sanctions.

This exercise leaves us with a range of possible mechanisms with which coups may harm economic growth when they overthrow democracies. The common thread appears to be a switch away from policies promoting social spending, health and education outcomes without any real progress in terms of economic reforms, and instead a higher propensity to suffer economic crises and deteriorating international financial positions. Significant decreases in public expressions of social discontent coupled with a susceptibility for irregular leader turnover is consistent with the political discourse shifting away the public arena toward a more entrenched political elite.

8 Concluding Remarks

The development consequences of coups remains a widely debated topic, both in economics and beyond. In July 2013, a military coup in Egypt overthrew a sitting and highly controversial president elected by a popular majority. Despite the questionable legal manner in which the coup occurred or the bloody aftermath that ensued, many prominent commentators expressed either direct or indirect support for the coup.[25]

Together with recent ones overthrowing democratically elected leaders in Honduras in 2009, Maldives in 2012, Mali in 2012, and Thailand in 2014, these illustrate the continued relevance of the coup both in politics as well as for development. Even in countries where coups have not occurred for a long while, constitutions often stipulate an ambiguous role for the military as guardian of the state.[26]

Whereas in more autocratic countries, coups may represent the modus operandi for political turnover, in democratic countries they often result in deeper institutional change with significant longer-term consequences. The imposition of martial law and the associated human rights abuses that

[24] The reducing effect of coups on measures of social unrest (strikes, riots, anti-government demonstrations etc) further differentiates the mechanisms those coming from the effect of democratic transitions. For example, Acemoglu et al [8] find a reducing effect of a transition to democracy on a related measure of social unrest. This suggest the effects of coups are rather different in nature than the effects of transitions.

[25] For example, see "Egypt's second change," Richard N. Haas, Financial Times, July 3 2013, http://blogs.ft.com/the-a-list/2013/07/03/egypts-second-chance/?; "After the Coup in Cairo – The U.S. shouldn't cut off aid to a new Egyptian government", Wall Street Editorial, July 7 2013, http://online.wsj.com/news/articles/SB10001424127887324399404578583932317286550; "Political Islam Fails Egypts Test", Roger Cohen, The New York Times, July 4 2013 http://www.nytimes.com/2013/07/05/opinion/global/political-islam-fails-egypts-test.html; and "Democracy in Egypt Can Wait," Charles A. Kupchan, Aug 16 2013, New York Times, ; http://www.nytimes.com/2013/08/17/opinion/democracy-in-egypt-can-wait.html

[26] In 2013, sixteen years after the last time the military ousted a democratically elected government, Turkey's parliament amended a crucial law to limit the military's role as defending only against external threats. As late as in 2010, twenty years after its transition to democracy, the last vestiges that gave special privileges to the armed forces was removed in Chile. In both Brazil and Colombia, constitutions define highly ambiguous rules under what conditions the armed forces may intervene in politics (Wiarda and Collins [92]).

follow are testament to the human suffering of the interventions. In the longer run, constitutions are rewritten, power reallocated across interest groups, and the ability for citizens' preferences to be aggregated into policy severely restricted. Invariably, coup leaders overthrowing democratically elected governments ascend to power promising to restore law and order, safeguarding democratic institutions, and pursuing economic progress. And as coups predominantly occur in periods of political and economic crises, they are not always without popular support. Undoubtedly, as the discussed examples in Appendix A from Chile, Turkey, and Algeria reveal, the situations in which the coups occurred in – involving political deadlock, economic crises, civil strife, and fragile institutions – were all of a very serious nature.

Despite the lack of systematic evidence of the development consequences of coups in democracies, opinions of such consequences exist in abundance. Among those who would argue that coups were instrumental in implementing tough but sorely needed reform, many point to such countries' subsequent economic success. Phenomena like the 'Chilean Miracle' or the economic boom of Turkey in the 1980s are occasionally laid at the feet of the military leaders who during the same time oversaw extensive human rights violations and an uprooting – if not destruction – of the prevailing democratic institutions. A typical argument in support for a coup overthrowing a democratic regime often invokes a counterfactual outcome that, without a coup, the consequences would have been much worse; a Chile without Pinochet's right-wing dictatorship would have resulted in a Castro-style Marxist dictatorship; an Algeria without the military regime would have resulted in an Islamist dictatorship in the Maghreb; a Turkey without Evren would have descended into civil war and anarchy and so on. The purpose of this paper is to challenge such narratives by using econometric techniques to improve on the candidates for counterfactual outcomes.

Based on past coups as examined in this paper, there is little basis for an optimistic assessment of coups' development prospects when they overthrow democratically-elected leaders, either with regards to economic growth or a speedy implementation of democratic institutions. Instead, when coups overthrow democratically-elected leaders, they tend to be overwhelmingly detrimental. Using a sample of coup attempts I show that successful coups result in significant reductions in growth over a decade. These results also hold up using standard matching as well as panel data methods, and do not seem to equivalent to the effects of transitions themselves, nor driven by effects of failed or attempted coups. The results also hold when including countries that, although not qualifying as democracies according to standard classification sources, are nonetheless moving rapidly toward a more open political system. Coups furthermore have clearly negative effects on various intermediate outcomes highly relevant as mechanisms or components of development, including infant mortality, education, investment, and indebtedness. Instead of promoting economic reforms, coups tend to hinder them, often resulting in a higher likelihood of severe economic crises.

Whereas coups occur mostly in dire situations, their prescriptions, as documented, rarely constitute adequate remedies to the underlying problems, as the institutional changes brought by these events show clear detrimental development consequences. Any short-lived benefit of regime stability a coup brings thus comes at a steep economic, political, and human cost in the longer run.

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Table 1: Summary Statistics of Cases with and without Coups

	All	Country-years with		Difference
		Coups	No Coups	(2)-(3)
	(1)	(2)	(3)	(4)
	Mean	Mean	Mean	Est.
	S.D.	S.D.	S.D.	S.E.
Control variables				
Log GDP per Capita (t-1)	8.200	7.520	8.219	-0.699
	(1.269)	(0.841)	(1.274)	(0.117)
Δ GDP per Capita btw t-1 and t-2	0.016	-0.005	0.017	-0.022
	(0.070)	(0.082)	(0.070)	(0.006)
Δ GDP per Capita btw t-1 and t-5	0.066	0.043	0.067	-0.024
	(0.165)	(0.132)	(0.166)	(0.015)
Δ GDP per Capita btw t-1 and t-10	0.148	0.119	0.149	-0.030
	(0.268)	(0.221)	(0.269)	(0.025)
Log population (t-1)	15.978	15.732	15.985	-0.253
	(1.582)	(1.329)	(1.588)	(0.146)
Years since last successful coup	29.510	13.562	29.956	-16.395
	(18.724)	(14.544)	(18.634)	(1.708)
Total number of previous coups	1.881	3.488	1.836	1.651
	(2.748)	(3.223)	(2.721)	(0.252)
Military exp/GDP (%) (t-1)	2.039	1.482	2.055	-0.573
	(4.348)	(1.377)	(4.402)	(0.401)
Military pers./pop ('000) (t-1)	6.437	4.325	6.496	-2.171
	(7.207)	(4.880)	(7.253)	(0.664)
Δ mil. exp./GDP btw t-1 and t-2	-0.092	-0.169	-0.090	-0.079
	(1.116)	(0.574)	(1.127)	(0.103)
Polity index (t-1)	0.540	0.379	0.544	-0.165
	(0.378)	(0.283)	(0.380)	(0.035)
Polity change between t-1 and t-2	0.007	0.002	0.007	-0.006
	(0.095)	(0.155)	(0.093)	(0.009)
Social unrest (t-1)	0.033	0.057	0.032	0.024
	(0.066)	(0.094)	(0.065)	(0.006)
Leader tenure (t-1)	13.214	6.727	13.396	-6.668
	(11.448)	(7.804)	(11.482)	(1.051)
Number of previous transitions	0.418	0.636	0.412	0.224
	(0.801)	(0.966)	(0.795)	(0.074)
GEO==Africa	0.297	0.438	0.293	0.145
	(0.457)	(0.498)	(0.455)	(0.042)
GEO==Asia	0.177	0.091	0.180	-0.089
	(0.382)	(0.289)	(0.384)	(0.035)
GEO==Europe	0.195	0.033	0.199	-0.166
	(0.396)	(0.180)	(0.399)	(0.036)
GEO==Latin America	0.206	0.372	0.202	0.170
	(0.405)	(0.485)	(0.401)	(0.037)
GEO==Middle East	0.105	0.066	0.106	-0.040
	(0.307)	(0.250)	(0.308)	(0.028)
Observations	5157	5012	145	5157

TABLE 2: TEN-YEAR GROWTH EFFECTS OF A SUCCESSFUL COUP

Outcome is Growth per Capita between $t+10$ and $t-1$						
	All regimes		Democracies		Autocracies	
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A. All years						
Mean	0.202	0.202	0.241	0.241	0.166	0.166
Coup Success	-0.045	0.020	-0.035	-0.034	-0.060	0.054
	(0.021)	(0.030)	(0.032)	(0.031)	(0.028)	(0.047)
Adj R2	0.22	0.24	0.21	0.26	0.24	0.26
Obs	5427	5427	2303	2303	2854	2854
Panel B. Coup Attempt years						
Mean	0.102	0.102	0.180	0.180	0.060	0.060
Coup Success	-0.014	0.016	-0.085	-0.142	0.024	0.082
	(0.031)	(0.030)	(0.041)	(0.052)	(0.043)	(0.039)
Adj R2	0.35	0.39	0.47	0.58	0.32	0.41
Obs	277	277	98	98	179	179
Covariates	No	Yes	No	Yes	No	Yes
Region & Year FE	Yes	Yes	Yes	Yes	Yes	Yes

Notes: In all columns the outcome is the difference in log GDP per capita between periods $t+10$ and $t-1$. Panel A reports results from regressions using the full sample, while Panel B includes only years with coup attempts. Odd columns include region and year fixed effects, whereas even columns also include period $t-1$ values of the following variables: log income per capita, growth in income per capita, log population, years since last successful coup, number previous coups, number of past transitions to autocracy, military expenditure per GDP, change in military expenditure per GDP, military personnel per GDP, the Polity index, social unrest index, and leader tenure respectively. Columns 1-2 includes all political regimes over the period 1953-2001, columns 3-4 includes only those observations where the last 5 years included at least on year in which Cheibub et al [30] classified it as a democracy. Columns 5-6 includes observations that had not been classified as democracies by Cheibub et al [30] in any of the past 5 years. Robust standard errors clustered by country are in parenthesis.

Table 3: Robustness Checks

	Outcome is Growth per Capita between $t+10$ and $t-1$										
	Main specification	Expanded Coup/Military Controls	Leader controls	War controls	Barro-Lee Education Controls	Natural Resources Controls	Weighted: Inverse No. of Coups	Weighted: Years since Last Coup	Region-Decade Fixed Effects	Stratified Propensity Score	Lagged Dep. Vars.
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Panel A: Full Sample											
Coup Success	0.016	0.021	0.026	0.013	-0.011	0.001	0.047	0.034	0.009	-0.001	0.009
	(0.030)	(0.031)	(0.031)	(0.030)	(0.039)	(0.038)	(0.027)	(0.034)	(0.031)	(0.031)	(0.035)
Obs	277	277	258	277	232	224	277	242	277	277	228
Panel B: Democracy											
Coup Success	-0.142	-0.120	-0.133	-0.140	-0.213	-0.154	-0.139	-0.118	-0.116	-0.116	-0.152
	(0.052)	(0.052)	(0.057)	(0.058)	(0.063)	(0.054)	(0.051)	(0.069)	(0.075)	(0.060)	(0.062)
Obs	98	98	92	98	90	83	98	86	98	98	85
Panel C: Autocracy											
Coup Success	0.082	0.078	0.084	0.079	0.072	0.052	0.085	0.120	0.063	0.106	0.069
	(0.039)	(0.042)	(0.041)	(0.039)	(0.057)	(0.051)	(0.036)	(0.051)	(0.041)	(0.050)	(0.047)
Obs	179	179	179	179	142	141	179	156	179	179	143

Notes: In all columns the outcome is the difference in log income per capita between periods $t+10$ and $t-1$. Panel A includes the full sample of all coup attempts over the period 1953-2001. Panel B includes the sample of observations, called *Democracies*, where the last 5 years included at least on year in which Cheibub et al [30] classified it as a democracy. Panel C includes the sample of observations, called *Autocracies* that had not been classified as democracies by Cheibub et al [30] in the past 5 years. Column 1 includes as controls year and region fixed effects, as well as the period $t-1$ values of the following variables: log income per capita, growth in income per capita, log population, years since last successful coup, number of past coups, military expenditure per GDP, change in military expenditure per GDP, military personnel per GDP, the Polity index, social unrest, number of past regime transitions, and leader tenure respectively. Column 2 adds period $t-1$ controls for number of total previous coup attempts, years since last coup attempt, global military expenditure and personnel ranks respectively. Column 3 adds period $t-1$ values of leader age, number of instances of irregular leader turnover in past 5 years, and an indicator for radical policy change. Column 4 adds dummy variables for whether period $t-1$ witnessed any civil-, interstate-, or extra state wars using PRIO/UACP data. Column 5 adds controls from the Barro-Lee database for one-year lags of average years of schooling and the share of the population with completed tertiary education. Column 6 adds period $t-1$ controls for the oil and gas production value per GDP and the change in the oil price between $t-1$ and $t-5$. Columns 7 and 8 weights observations from the baseline specification; by the inverse number of total coups preceding the coup in the former column; and by the number of years since the last successful coup in the latter. Column 9 adds region-decade fixed effects. Column 10 includes a stratified propensity score from a probit regression of a successful coup on the controls from the baseline regression in Table 2. Column 11 includes lagged growth 5-year and 10-year rates respectively. Robust standard errors clustered by country are in parenthesis.

Table 4: Sample Splits By Alternative Democracy Measures

Outcome is Growth per Capita between $t+10$ and $t-1$						
Panel A: Alternative Democracy Measures						
	≥ 1 yr as CGV Democracy		CGV Demo. at	$DEMOC > AUTOC$ in any of		CGV Democracy or Democ. chg.
	last 5 yrs	last 10 yrs	at t-1	last 5 yrs	last 10 yrs	last 5 yrs
	(1)	(2)	(3)	(4)	(5)	(6)
			More Democratic			
Coup Success	-0.142	-0.135	-0.112	-0.121	-0.177	-0.144
	(0.052)	(0.049)	(0.094)	(0.056)	(0.202)	(0.040)
Obs	98	104	74	72	49	113
			More Autocratic			
Coup Success	0.082	0.117	0.065	0.045	0.070	0.104
	(0.039)	(0.045)	(0.041)	(0.037)	(0.036)	(0.049)
Obs	179	134	203	203	180	162
Panel B: Placebo interactors						
	Oil/Gas	Above/below median				Before/After
	Dummy	GDP per Capita	Yrs. Sch.	Population	Past growth	1989
	(1)	(2)	(3)	(4)	(5)	(6)
	1		*Above median*			*After 1989*
Coup Success	-0.035	-0.002	-0.065	-0.024	-0.023	0.024
	(0.065)	(0.036)	(0.057)	(0.038)	(0.047)	(0.079)
Obs	125	138	116	138	135	58
	0		*Below median*			*Before 1989*
Coup Success	0.054	0.030	0.055	0.057	0.008	0.026
	(0.042)	(0.040)	(0.067)	(0.061)	(0.046)	(0.036)
Obs	142	139	116	139	135	219

Notes: In all columns the outcome is the difference in log income per capita between periods $t+10$ and $t-1$. In the first two columns of Panel A the sample is split by whether a country had been a democracy – as defined by Cheibub et al [30] – for any of the last 5 and 10 years in columns 1 and 2 respectively. Column 3 splits the sample by whether countries were democratic in period $t-1$ according to CGV. In columns 4 and 5 the sample is split by whether a country had been a democracy – as defined by whether the difference between Polity's subindices $DEMOC \geq AUTOC$ was positive or not – for any of the last 5 and 10 years respectively. Columns splits the sample by whether a country had either been a CGV democracy in the past 5 years or whether its Polity score had increase by more than a standard deviation (.26) over the last 5 years. In column 1 of Panel B, the sample is split by the existence of oil or gas reserves, whereas in columns 2, 3 and 4 the sample is split by median GDP per capita (column 2), median years of schooling (column 3), median population size (column 4), median lagged five-year growth rate (column 5), and whether the coup occurs before or after the year 1989 (column 5). All specifications include as controls year and region fixed effects, as well as the period $t-1$ values of the following variables: log income per capita, growth in income per capita, log population, years since last successful coup, number of past coups, military expenditure per GDP, change in military expenditure per GDP, military personnel per GDP, the Polity index, social unrest, number of past regime transitions and leader tenure respectively Robust standard errors clustered by country are in parenthesis.

Table 5: Matching estimates

Outcome is Growth per Capita between $t+10$ and $t-1$										
	Bias-corrected matching							Propensity Score		
	Standard covariates		Extended controls	Alternative democracy			Coup Attempts	IPW	Matching	Entropy Balancing
	$N=1$	$N=4$	$N=1$	CGV $N=1$	Polity $N=1$	Polity2 $N=1$	$N=1$		$N=1$	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Panel A: Full Sample										
Coup	0.020	-0.007	-0.007	-0.007	-0.007	0.015	0.024	-0.089	-0.093	-0.119
	(0.047)	(0.034)	(0.034)	(0.034)	(0.034)	(0.055)	(0.042)	(0.032)	(0.038)	(0.030)
Panel B: Democracy										
Coup	-0.110	-0.150	-0.108	-0.118	-0.143	-0.108	-0.107	-0.083	-0.111	-0.129
	(0.049)	(0.047)	(0.034)	(0.079)	(0.073)	(0.102)	(0.046)	(0.042)	(0.046)	(0.046)
Panel C: Autocracy										
Coup	-0.024	-0.029	-0.016	0.002	0.019	0.045	0.029	-0.105	-0.062	-0.140
	(0.059)	(0.039)	(0.051)	(0.035)	(0.036)	(0.050)	(0.059)	(0.038)	(0.005)	(0.036)

Notes: The table shows matching estimates of the average treatment effect (ATE) using bias-corrected matching (Abadie and Imbens [3]) in columns 1-7, inverse probability weighting using the propensity score (Hirano, Ridder, and Imbens [51]), direct matching on the propensity score, and entropy balancing (Hainmueller [50]. N denotes the number of matches used in columns 1-7, and 9. In all columns the outcome is the difference in log income per capita between periods $t+10$ and $t-1$. Panel A includes all political regimes, Panel B only the subsample of pre-coup democracies, and Panel C includes only the subsample of pre-coup autocracies. In columns 1-3, 7-10, a democracy is defined as having been classified as a CGV democracy in any of the last 5 year; in column 4 it is defined as being classified as a CGV democracy in the year before the coup; in column 5 it is defined as having at least a higher value of Polity2's as being more democratic than autocratic (with subindicators $DEMOC > AUTOC$) in the year before the coup; in column 6 it is defined a either being a CGV democracy in $t-1$ or having experience at least a 0.3 increase in the Polity2 variable in the last five years. The covariates used for matching are five lags of GDP per capita as well as period $t-1$ values for log population, years since last successful coup, number of past coups, military expenditure per GDP, change in military expenditure per GDP, military personnel per GDP, the Polity index, social unrest, number of past regime transitions and leader tenure. Robust standard errors are in parenthesis.

Table 6: Matching estimates - Alternative Events

Outcome is Growth per Capita between $t+10$ and $t-1$										
Treatment	Coups						Political Transition			
type	Successful		Failed		Any Attempted		CGV		Polity	
	(1)	(2)	(3)	(4)	(5)	(6)				
Panel A: Full Sample										
Treatment	-0.001	-0.006	-0.045	-0.058	-0.027	-0.025	-0.051	-0.028	0.048	0.030
	(0.040)	(0.035)	(0.043)	(0.036)	(0.025)	(0.023)	(0.027)	(0.025)	(0.030)	(0.026)
Panel B: Democracy										
Treatment	-0.169	-0.138	-0.029	-0.023	-0.012	-0.010	-0.087	-0.068	-0.063	-0.069
	(0.040)	(0.035)	(0.055)	(0.050)	(0.047)	(0.035)	(0.046)	(0.040)	(0.048)	(0.044)
Panel C: Autocracy										
Treatment	-0.024	-0.033	-0.161	-0.172	-0.073	-0.076	-0.054	-0.021	0.065	0.070
	(0.048)	(0.035)	(0.047)	(0.047)	(0.039)	(0.031)	(0.032)	(0.039)	(0.033)	(0.030)

Notes: The table shows matching estimates of the average treatment effect (ATE) using bias-corrected matching (Abadie and Imbens [3]). N denotes the number of nearest neighbor matches used. Panel A includes all political regimes, Panel B only the subsample of pre-coup democracies, and Panel C includes only the subsample of pre-coup autocracies. In columns 1-3, 7-10, a democracy is defined as having been classified as a CGV democracy in any of the last 5 year; in column 4 it is defined as being classified as a CGV democracy in the year before the coup; in column 5 it is defined as having at least a higher value of Polity2's as being more democratic than autocratic (with subindicators $DEMOC > AUTOC$) in the year before the coup. The covariates used for matching are five lags of GDP per capita as well as period $t-1$ values for log population, years since last successful coup, number of past coups, military expenditure per GDP, change in military expenditure per GDP, military personnel per GDP, the Polity index, social unrest, number of past regime transitions and leader tenure. Robust standard errors are in parenthesis.

Table 7: Within-coup-attempt panel estimates

Outcome is (100×) GDP per Capita at $t+1$						
Regime	All		Autocracies		Democracies	
Lags	One	Five	One	Five	One	Five
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A. 20-year panel						
Post Coup Success	-0.430	-0.360	0.083	0.303	-1.388	-1.889
	(0.579)	(0.695)	(0.775)	(0.862)	(0.698)	(0.872)
Long-run effect	-3.92	-2.31	0.74	1.79	-12.22	-11.81
p-value	[0.45]	[0.60]	[0.91]	[0.73]	[0.10]	[0.05]
Persistence	0.89	0.84	0.89	0.83	0.89	0.84
test<1	[0.00]	[0.00]	[0.00]	[0.00]	[0.00]	[0.00]
Adj R2	0.79	0.75	0.76	0.73	0.87	0.82
Obs	5738	4284	3436	2596	1895	1441
Panel B. 30-year panel						
Post Coup Success	-0.671	-0.671	-0.443	-0.163	-1.299	-1.681
	(0.485)	(0.621)	(0.672)	(0.811)	(0.589)	(0.815)
Long-run effect	-8.50	-6.18	-5.39	-1.39	-15.49	-14.44
p-value	[0.17]	[0.27]	[0.51]	[0.84]	[0.03]	[0.02]
Persistence	0.92	0.89	0.92	0.88	0.92	0.88
test<1	[0.00]	[0.00]	[0.00]	[0.00]	[0.00]	[0.00]
Adj R2	0.87	0.85	0.84	0.83	0.92	0.91
Obs	8435	6871	4908	4012	2695	2225

Notes: The table shows within-coup-attempt results of coups, where the panel dimension is the country-year of the coup attempt and the time dimension is the years before and after the coup attempt. For each sample of all political regimes (columns 1-2), autocracies (columns 3-4), and democracies (columns 5-6), log GDP per capita is regressed on a dummy variable that takes on the value 1 in or after the year of a successful coup and 0 otherwise, as well as a set of lagged control variables including log GDP per capita, log population, social unrest, Polity index, leader tenure, years since last coup, number of previous coups, military expenditure, military personnel per population, number of previous regime changes, and fixed effects for time and country-attempt, time and country-coup fixed effects. Odd columns include one lag of all control variables and even columns include five lags. I report the estimated persistence of the outcome process and the p-value for this being less than 1. I also report the estimated long-run effect of democracy and the p-value for this being different from 0. Robust standard errors clustered by country-attempt are in parenthesis.

Table 8: Panel Data Results: Coups and GDP per Capita

	Cumulative effects [p-values] on log GDP per capita (t+1)								
	Standard covariates & linear trends				Quadratic trends	Added controls	Alternative democracy		
							CGV	Polity2	CGV/Polity2
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Coup Success	-0.017	0.040	0.031	0.113	0.081	0.075	0.092	0.051	0.075
	[0.520]	[0.206]	[0.533]	[0.126]	[0.357]	[0.357]	[0.175]	[0.475]	[0.357]
Coup Attempt			-0.051	-0.086	-0.058	-0.058	-0.068	-0.055	-0.058
			[0.180]	[0.152]	[0.393]	[0.380]	[0.213]	[0.344]	[0.380]
Coup Success × Democracy		-0.153		-0.224	-0.171	-0.178	-0.249	-0.192	-0.178
		[0.005]		[0.023]	[0.120]	[0.087]	[0.023]	[0.041]	[0.087]
Coup Attempt × Democracy				0.085	0.036	0.041	0.063	0.064	0.041
				[0.226]	[0.643]	[0.608]	[0.348]	[0.350]	[0.608]
Total coup effect				0.035	0.036	0.027	0.025	0.006	0.027
				[0.351]	[0.532]	[0.571]	[0.478]	[0.898]	[0.571]
Total coup effect × Democracy				-0.139	-0.135	-0.137	-0.186	-0.128	-0.137
				[0.013]	[0.050]	[0.052]	[0.019]	[0.081]	[0.052]
Persistence		0.735		0.734	0.538	0.725	0.732	0.728	0.725
Countries		[0.000]		[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
Obs	182	182	182	182	182	182	182	160	182
N	5217	5217	5217	5217	5217	5161	5217	4727	5161

Notes: The table presents estimates of the effect of coups on log GDP per capita, and reports reports cumulative sums of coefficients from equation 6 over the $J \in [0, 10]$ lags and p-values of tests whether these sums are different from zero in brackets. All regressions include controls for J lags of log GDP per capita, log population and leader tenure, democracy, fixed effects for time and country, as well as country-linear trends. Column 1 includes a dummy variable for a successful coup without any interaction with democracy or controlling for coup attempts. Column 2 adds interactions with democracy, whereas column 3 instead adds a control for coup attempts. Column 4 adds both a control for coup attempts as well as interactions with democracy. Column 5 includes quadratic country-trends. Column 6 adds additional controls for the lagged Polity indicator, military expenditures, and social unrest. In columns 1-6 democracy is defined as having been classified as a CGV democracy in any of the last 5 year. Columns 7-9 uses different measures of democracy as interactions: in column 7 it is defined as a CGV democracy in the year before the coup; in column 8 it is defined as the Polity2 score being more democratic than autocratic (with subindicators $DEMOC > AUTOC$) in the year before the coup; in column 9 it is defined a either being a CGV democracy in $t-1$ or having experience at least a 0.3 increase in the Polity2 variable in the last five years. I report the estimated persistence of the GDP process, the sum of the coefficients for the lagged dependent variables, and the p-value for this being less than 1. P-values from robust standard errors clustered by country are in brackets.

Table 9: Panel Data Results: Coups and Economic Mechanisms

	Cumulative effects [p-values]									
	Inv. shr	Public exp	Infant	Years of	Economic	Economic Crises			Net ext.	Debt
Outcomes	GDP	GDP	Mortality	schooling	Reforms	Growth < 0	Inflation	Bank	position	GDP
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Outcome mean	0.21	15.00	3.41	6.20	0.44	0.29	0.19	0.03	-0.43	0.41
Coup Success	0.011	10.260	-0.004	0.068	0.058	-0.459	0.133	-0.073	0.406	-0.406
	[0.654]	[0.021]	[0.602]	[0.285]	[0.220]	[0.155]	[0.665]	[0.686]	[0.114]	[0.058]
Coup Attempt	-0.012	-5.551	0.001	-0.019	-0.039	0.321	-0.115	0.162	-0.092	0.111
	[0.542]	[0.136]	[0.713]	[0.705]	[0.255]	[0.221]	[0.564]	[0.312]	[0.609]	[0.441]
Success × Dem.	-0.084	-22.311	0.021	-0.188	-0.098	1.326	0.889	0.414	-0.923	0.836
	[0.030]	[0.000]	[0.036]	[0.096]	[0.219]	[0.014]	[0.102]	[0.103]	[0.025]	[0.017]
Attempt × Dem.	0.049	10.462	-0.009	0.050	0.070	-0.917	-0.314	-0.302	0.385	-0.326
	[0.063]	[0.015]	[0.089]	[0.516]	[0.186]	[0.013]	[0.315]	[0.149]	[0.072]	[0.064]
Tot. coup	-0.012	3.235	-0.001	0.033	0.008	-0.108	-0.146	0.091	0.289	-0.274
	[0.542]	[0.356]	[0.783]	[0.566]	[0.810]	[0.633]	[0.536]	[0.447]	[0.068]	[0.060]
Tot. coup × Dem.	-0.035	-11.850	0.012	-0.138	-0.027	0.409	0.574	0.112	-0.538	0.510
	[0.182]	[0.004]	[0.115]	[0.134]	[0.600]	[0.163]	[0.144]	[0.529]	[0.068]	[0.049]
Persistence	0.813	0.542	0.988	0.941	0.801	-0.266	0.369	-0.649	0.599	0.628
	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
Countries	163	104	181	140	126	182	155	98	119	120
Obs	4818	1212	4749	4491	3619	5217	3689	3026	2470	2488

Notes: The table presents estimates as of the effect of coups on the different channels specified in the columns labels. reports reports cumulative sums of coefficients from equation 6 over the $J \in [0, 10]$ lags and p-values of tests whether these sums are different from zero in brackets. All regressions include controls for J lags of log GDP per capita, log population and leader tenure, democracy, fixed effects for time and country, as well as country-linear trends. I report the estimated persistence of the GDP process, the sum of the coefficients for the lagged dependent variables, and the p-value for this being less than 1. P-values from robust standard errors clustered by country are in brackets.

Table 10: Panel Data Results: Coups and Political Mechanisms

	Cumulative effects [p-values]									
	Democracy	Military	Social	Political	Irregular	State Fail	Coup occurrences		US relations	
	CGV	Rule	unrest	transitions	leader chg.	& Anarchy	Success	Attempt	Economic	Sanctions
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(9)	(9)	(10)
Outcome mean	0.50	0.08	0.03	0.02	0.31	0.06	0.03	0.02	0.02	0.07
Coup Success	-0.072	0.264	0.033	-0.008	0.122	0.018	0.187	-0.274	-0.007	-0.201
	[0.534]	[0.075]	[0.271]	[0.947]	[0.435]	[0.834]	[0.263]	[0.029]	[0.405]	[0.149]
Coup Attempt	0.168	-0.123	-0.022	0.159	-0.185	0.055	-0.198	0.174	0.005	0.136
	[0.100]	[0.174]	[0.230]	[0.090]	[0.170]	[0.444]	[0.160]	[0.183]	[0.491]	[0.099]
Success × Dem.	-0.590	0.498	-0.092	0.050	0.491	-0.102	0.193	0.241	0.010	0.328
	[0.004]	[0.022]	[0.051]	[0.856]	[0.087]	[0.311]	[0.381]	[0.255]	[0.408]	[0.071]
Attempt × Dem.	-0.347	0.099	-0.004	-0.105	0.305	-0.067	-0.112	-0.263	-0.004	-0.061
	[0.007]	[0.410]	[0.922]	[0.477]	[0.157]	[0.365]	[0.560]	[0.152]	[0.675]	[0.613]
Tot. coup	0.117	0.136	0.000	0.188	-0.060	0.119	0.000	-0.104	-0.004	-0.072
	[0.176]	[0.201]	[0.995]	[0.084]	[0.505]	[0.045]	[0.999]	[0.325]	[0.383]	[0.325]
Tot. coup × Dem.	-0.938	0.597	-0.095	-0.054	0.796	-0.170	0.081	-0.022	0.006	0.267
	[0.000]	[0.004]	[0.006]	[0.833]	[0.001]	[0.015]	[0.703]	[0.919]	[0.405]	[0.024]
Persistence	0.716	0.751	0.505	-0.258	0.592	0.738			1.066	0.793
	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.014]			[0.306]	[0.147]
Countries	182	180	177	179	134	161	182	182	115	129
Obs	5217	5091	4754	5035	3822	4825	5217	5217	2075	2240

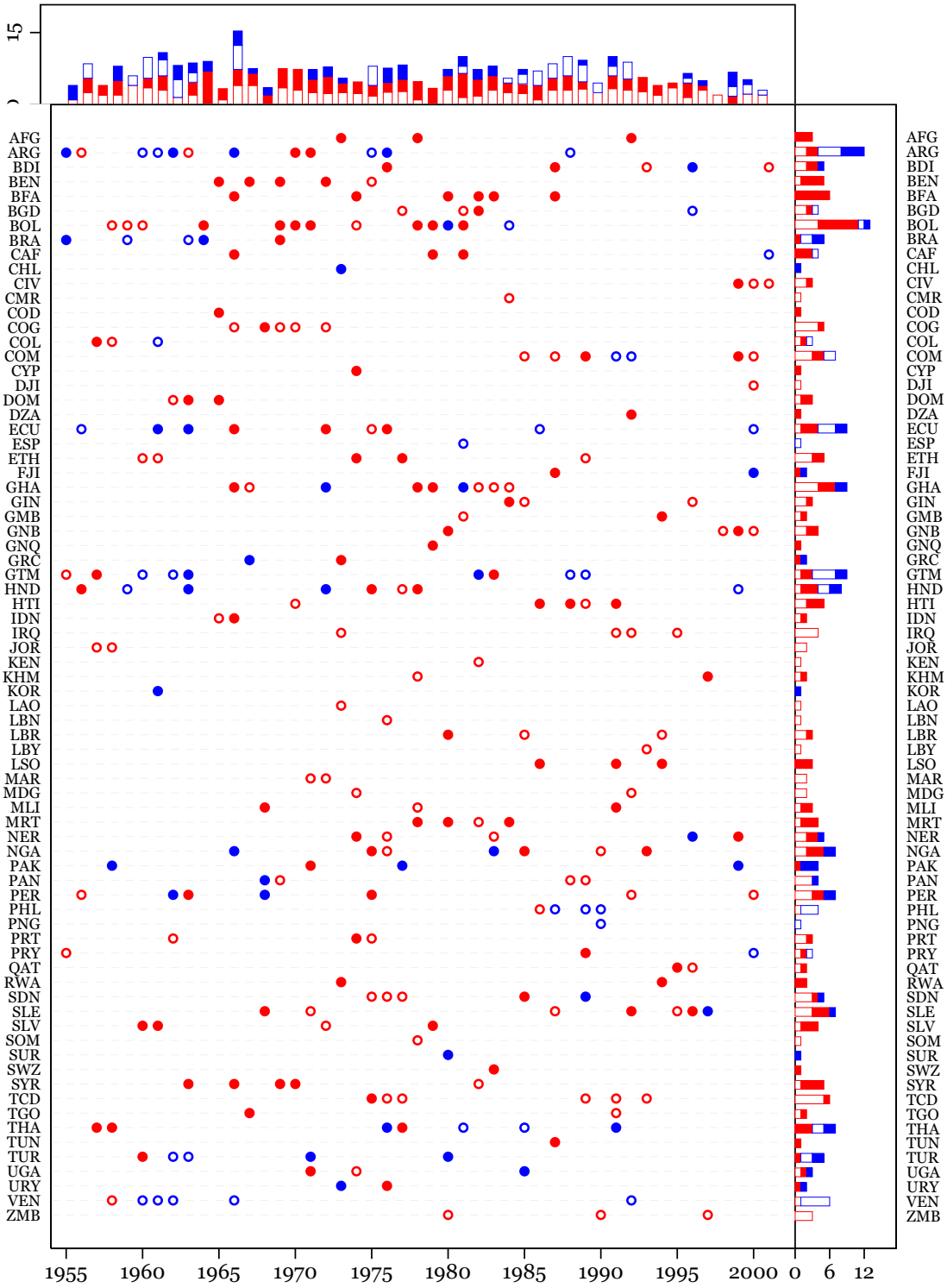
Notes: The table presents estimates as of the effect of coups on the different channels specified in the columns labels. reports reports cumulative sums of coefficients from equation 6 over the $J \in [0, 10]$ lags and p-values of tests whether these sums are different from zero in brackets. All regressions include controls for J lags of log GDP per capita, log population and leader tenure, democracy, fixed effects for time and country, as well as country-linear trends. I report the estimated persistence of the GDP process, the sum of the coefficients for the lagged dependent variables, and the p-value for this being less than 1. P-values from robust standard errors clustered by country are in brackets.

Table 11: Panel Data Results: Coups and Sector-specific Reforms

	Cumulative effects [p-values]						
	Average reform	Agriculture	Product Market	Trade	Capital Account	Current Account	Finance
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Outcome mean	0.44	0.45	0.13	0.70	0.65	0.62	0.59
Coup Success	0.058	-0.056	-0.012	0.169	0.058	-0.032	0.112
	[0.220]	[0.560]	[0.718]	[0.163]	[0.841]	[0.636]	[0.239]
Coup Attempt	-0.039	-0.001	0.003	-0.082	0.047	-0.019	-0.059
	[0.255]	[0.994]	[0.908]	[0.428]	[0.854]	[0.739]	[0.446]
Coup Success × Dem.	-0.098	0.187	-0.100	-0.199	-0.164	0.028	-0.290
	[0.219]	[0.189]	[0.266]	[0.207]	[0.639]	[0.848]	[0.008]
Coup Attempt × Dem.	0.070	-0.063	0.021	0.072	0.083	0.089	0.117
	[0.186]	[0.498]	[0.760]	[0.546]	[0.810]	[0.400]	[0.148]
Tot. coup	0.008	-0.045	-0.002	0.079	0.029	-0.120	0.038
	[0.810]	[0.366]	[0.948]	[0.200]	[0.858]	[0.024]	[0.492]
Tot. coup × Dem.	-0.027	0.123	-0.079	-0.127	-0.080	0.117	-0.172
	[0.600]	[0.183]	[0.077]	[0.205]	[0.685]	[0.155]	[0.036]
Persistence	0.801	0.840	0.862	0.824	0.636	0.833	0.717
	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
Countries	126	88	111	107	79	64	79
Obs	3619	2280	3234	2488	1596	1974	1596

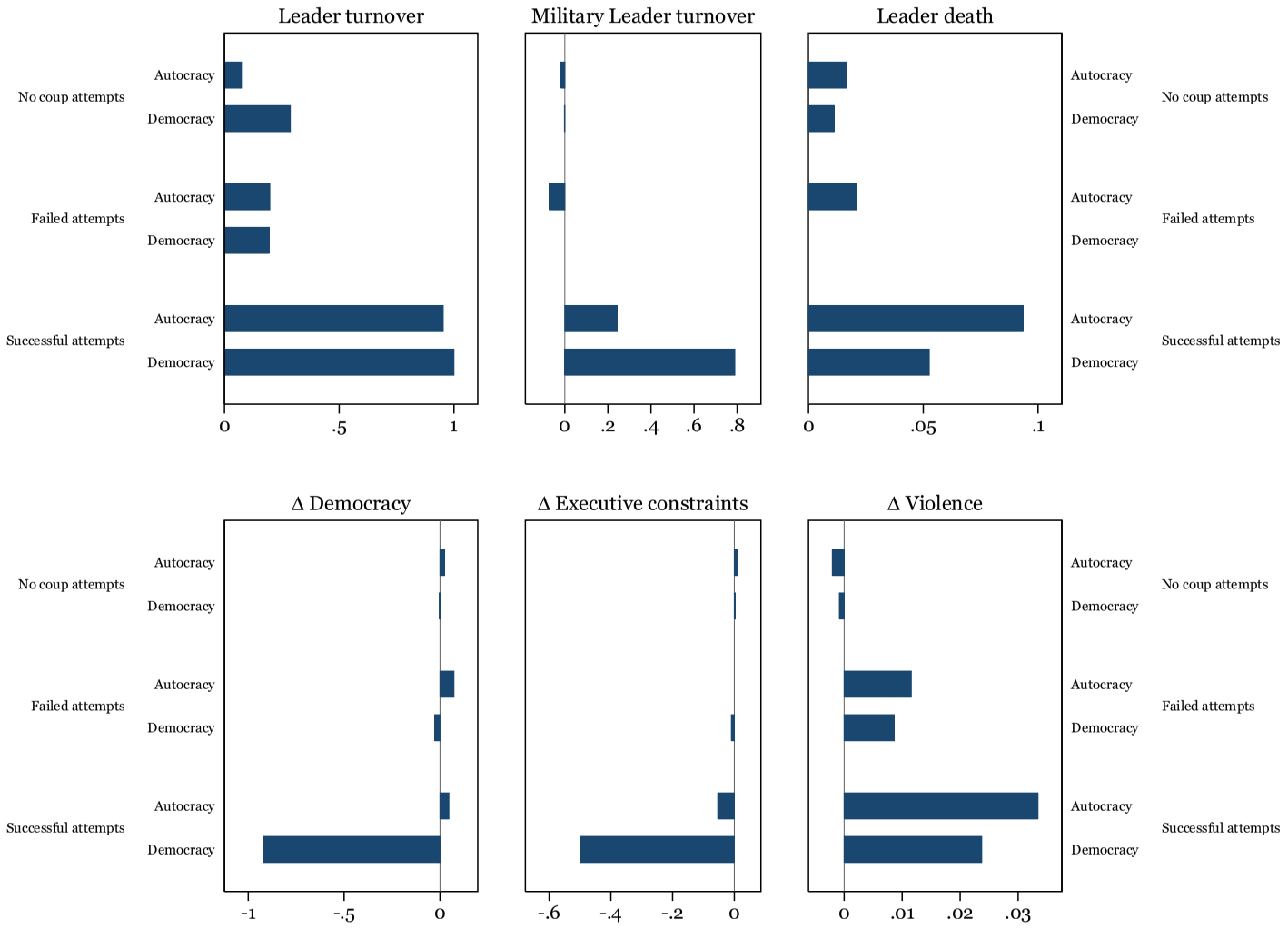
Notes: The table presents estimates as of the effect of coups on the different sector-specific reform index constructed by Giuliano et al [47] described in the text, and reports reports cumulative sums of coefficients from equation 6 over the $J \in [0, 10]$ lags and p-values of tests whether these sums are different from zero in brackets. All regressions include controls for J lags of log GDP per capita, log population and leader tenure, democracy, fixed effects for time and country, as well as country-linear trends. I report the estimated persistence of the GDP process, the sum of the coefficients for the lagged dependent variables, and the p-value for this being less than 1. P-values from robust standard errors clustered by country are in brackets.

Figure 1: Distribution of coups 1955-2001



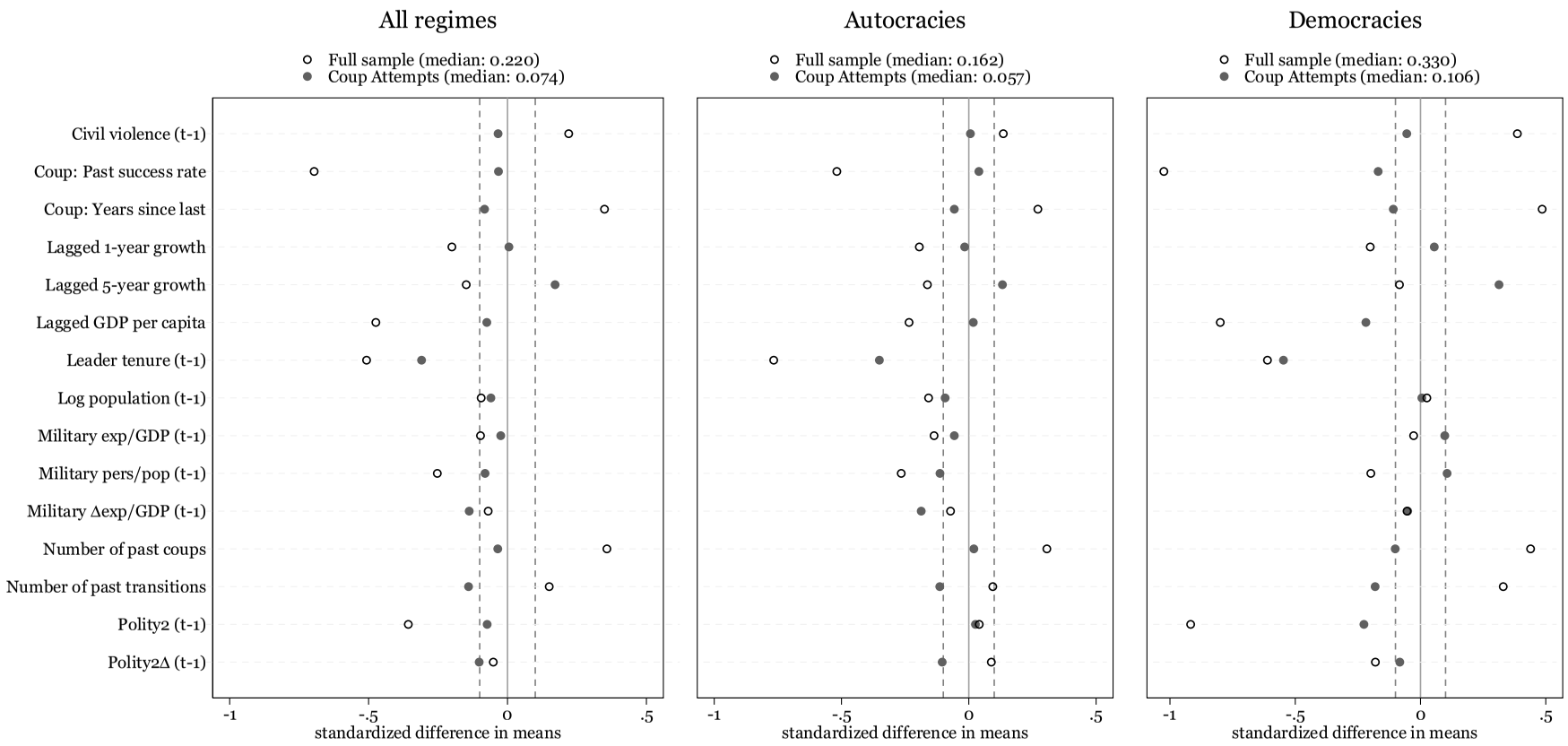
Notes: The graphs shows successful (solid circles) and failed coup attempts (hollow circles) by country and year, and aggregated by country (right graph) as well as by year (top graph). A circle in blue means the political regime was classified by Cheibub et al [30] as a democracy in the year before the attempt and a red circle means they classified the regime as an autocracy.

Figure 2: Immediate Changes Following Coups



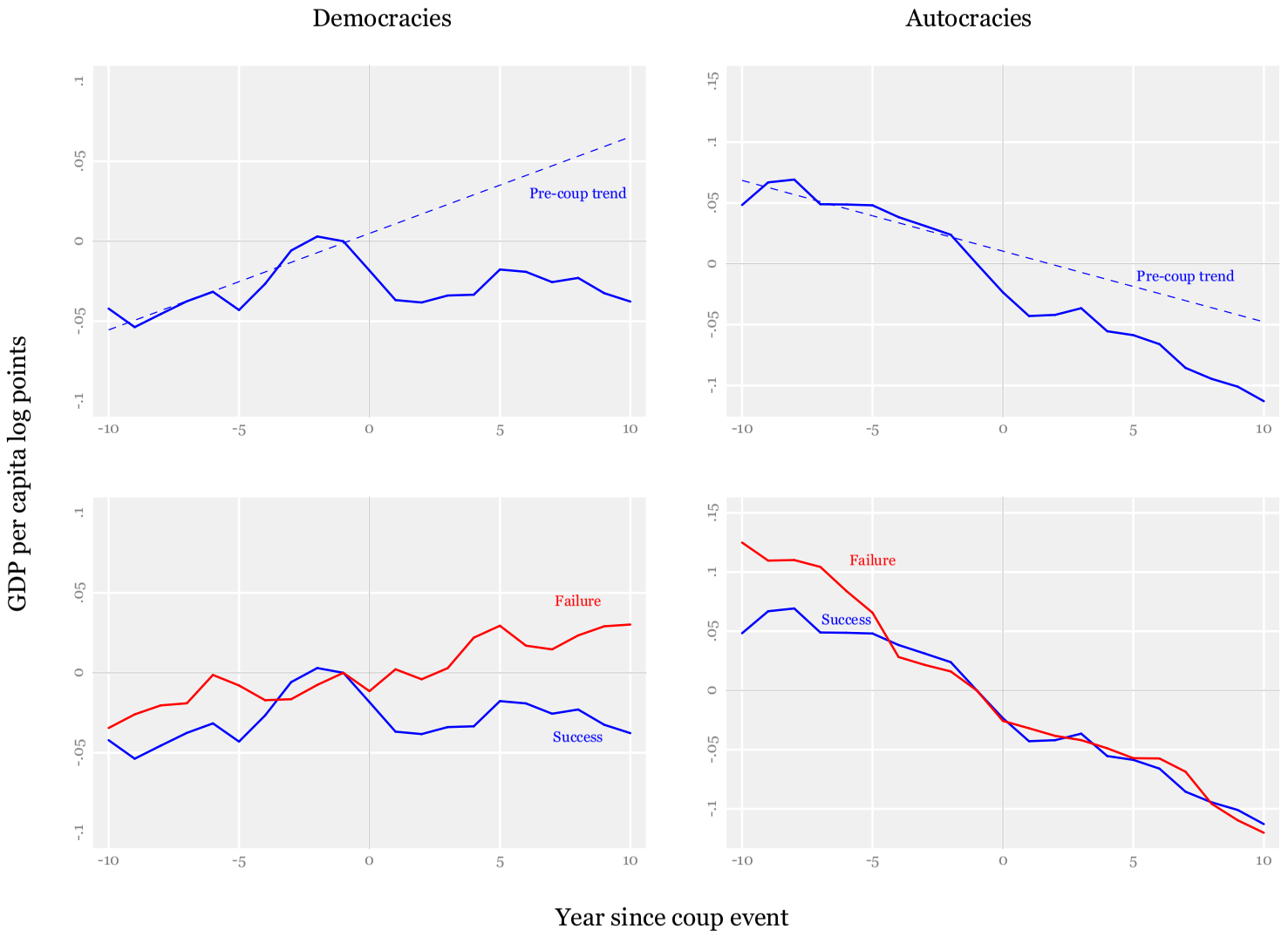
Notes: The graphs shows leader turnover in t; military leader turnover, defined as as change in having a military leader between t and $t-1$; incidence of leader deaths in year t; the change in CGV democracy between t and $t-1$, the change in Polity's Executive Constraints between t and $t-1$; and the change in Social unrest between t and $t-1$.

Figure 3: Covariate Balance



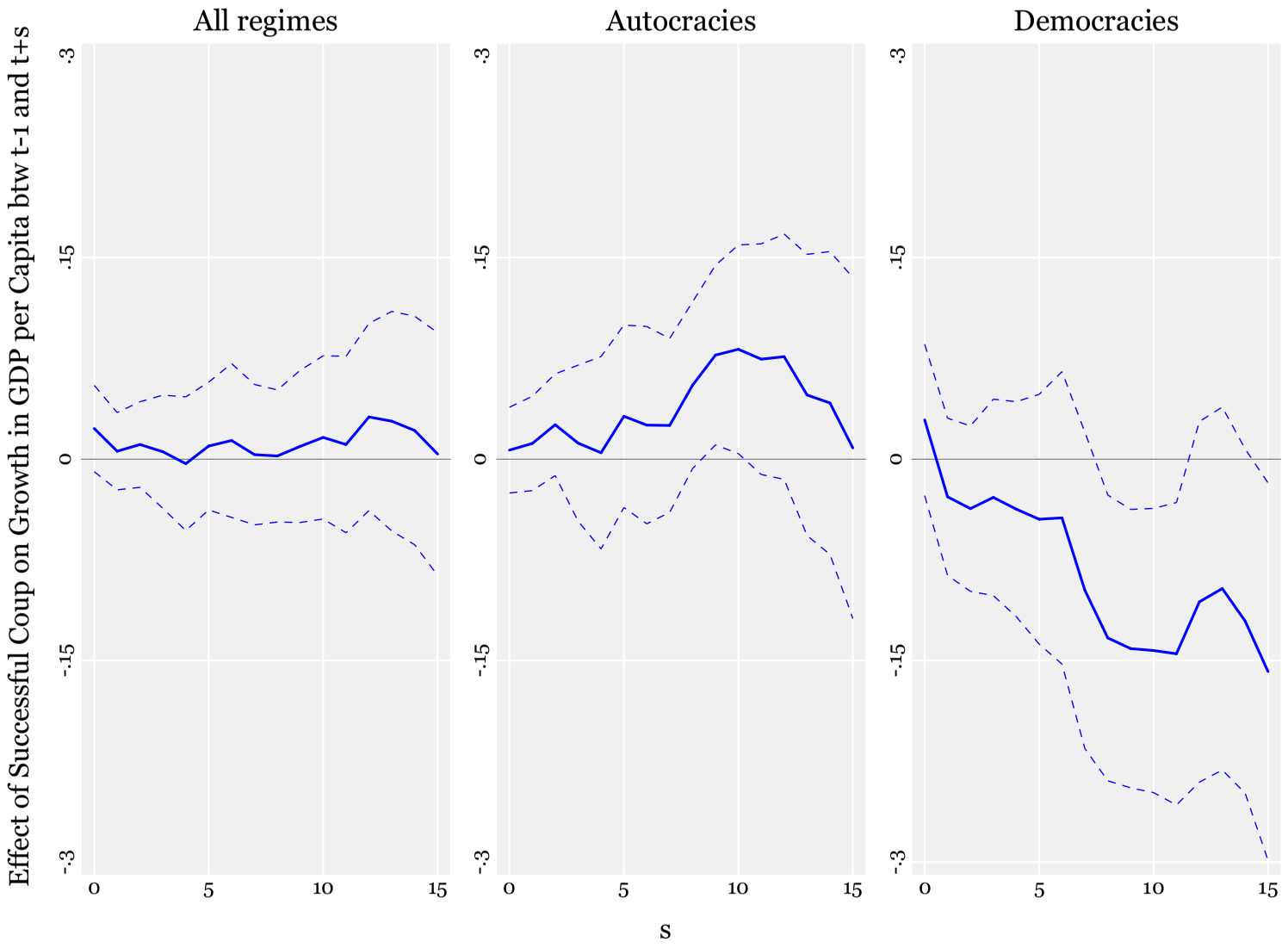
Notes: The graphs plot the standardized difference in means of the listed covariates for All regimes (left), Autocracies (middle), and Democracies (right). Hollow circles denote the standardized differences in means successful coups and all other observations, whereas solid circles denote the corresponding statistic between successful coups and failed coups only. The legend includes the median standardized difference in means by sample.

Figure 4: GDP per Capita around Coups, by Regime



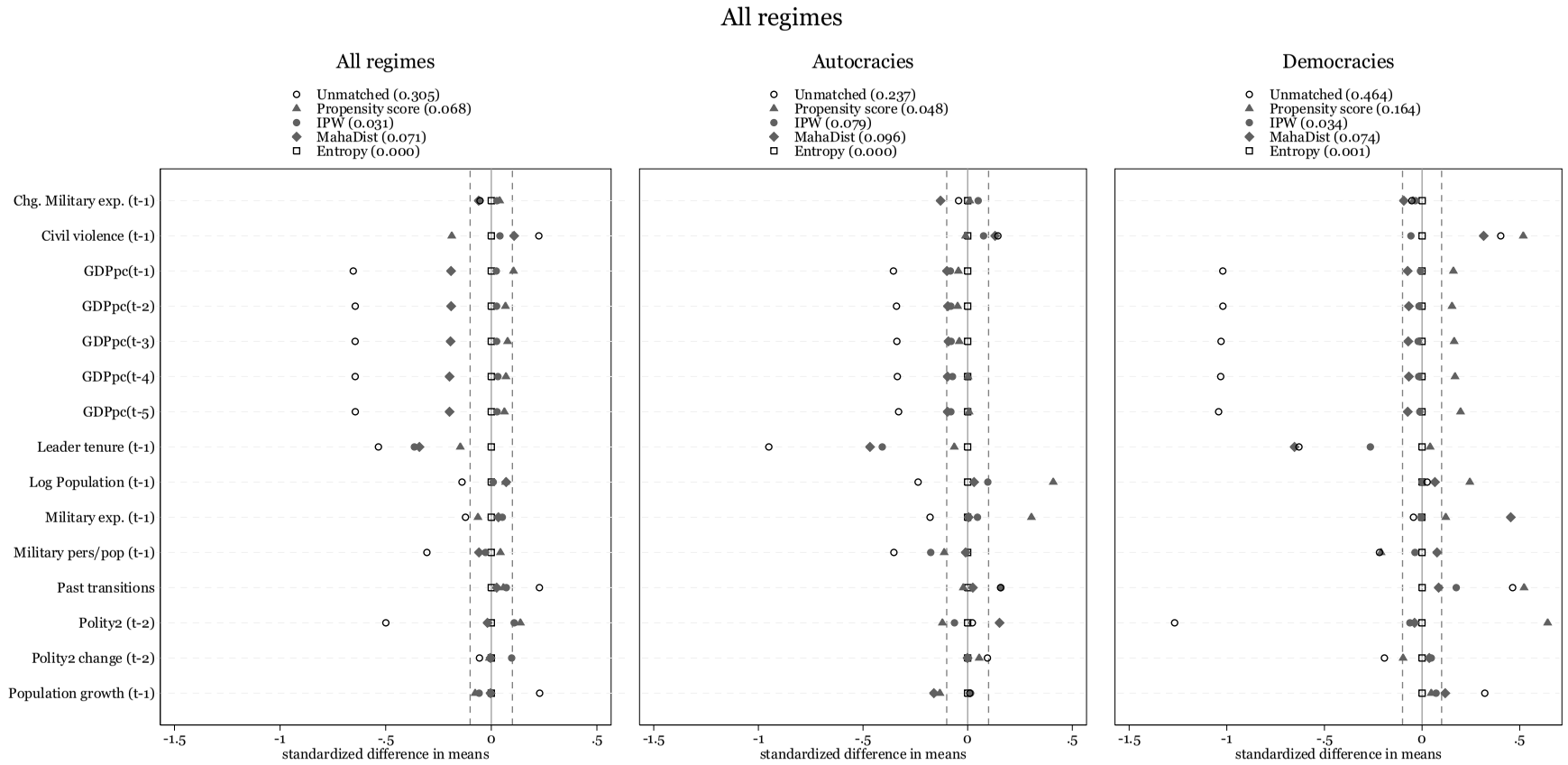
Notes: The graphs plot year-demeaned GDP per capita in log points around a coup, indexed to the year before the coup. Time since the coup runs on the horizontal axis

Figure 5: Growth Effects of Successful Coups Over Time



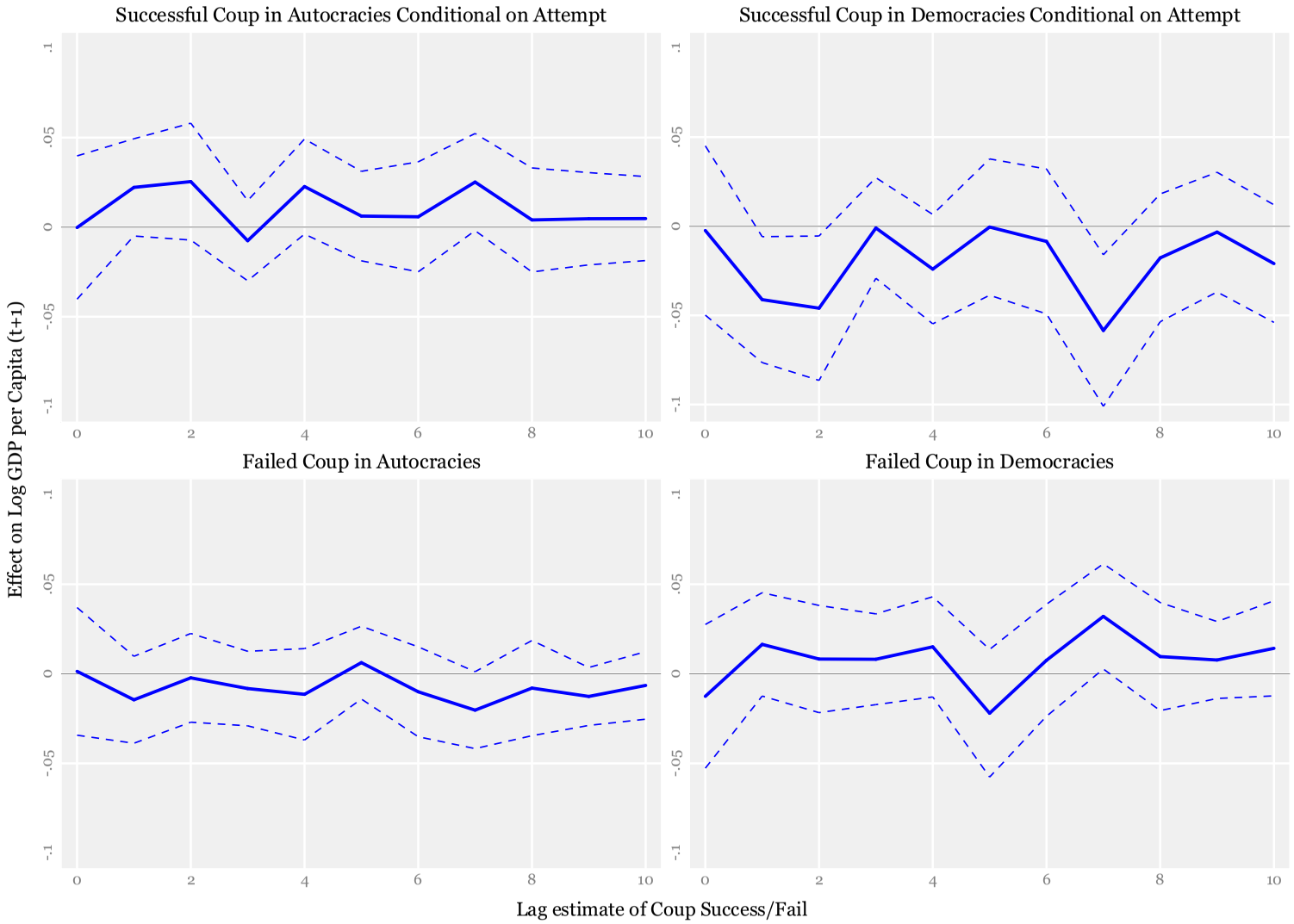
Notes: Figure shows regression estimates of a successful coups on Growth in GDP per Capita, for the sample including all political regimes (left), the sample of pre-coup autocracies (middle), and the sample of pre-coup democracies (right). Each annual point in any graph is the corresponding effect of a successful coup on growth in GDP per capita between $t-1$ and $t+s$ with s denoted in the x-axis. Controls are the same as in Table 2.

Figure 6: Covariate Balance: Matching



Notes: The graphs plot the standardized difference in means of the listed covariates for All regimes (left), Autocracies (middle), and Democracies (right) for unmatched data and the different types of matched data. The legend includes the median standardized difference in means by sample.

Figure 7: Panel Data Effects of Coup Events on GDP per Capita



Notes: The graphs plot the individual lagged coefficients for successful coups conditional on an attempt (upper) and (failed) coup attempts (lower) from specification 6 used in column (4) of Table 8. Graphs to the left correspond to uninteracted coefficients whereas graphs to the right correspond to coefficients of coups and coup attempts interacted with the measure of pre-coup democracy.

Appendix A Case Studies

> *"Egyptians would be lucky if their new ruling generals turn out to be in the mold of Chile's Augusto Pinochet, who took power amid chaos but hired free-market reformers and midwifed a transition to democracy."*
>
> – "After the Coup in Cairo", Editorial in *The Wall Street Journal*, July 7, 2013.

This section discusses three cases of coups: Chile in 1973, Turkey in 1980, and Algeria in 1992. Each of these differ in many ways but share at least one important similarity; in all the cases, military intervention either overthrew popularly elected sitting governments or those about to win power through democratic elections. The experiences of Turkey represent its relevance in debates regarding the current institutional transformation in the Middle East. As for Chile, it remains a controversial case, as the brutal military regime's application of neoliberal economic policies is often credited as a cause for its subsequent economic growth (Barro [20], Becker [22]). The coup in Algeria in 1992 did not technically overthrow a democracy, as most democracy indicators categorize it as an autocracy before the coup, but it was nonetheless a country in the process of opening up politically to opposition parties, especially Islamist political parties.[27] Moreover, the circumstances around the 1992 coup in Algeria remains a benchmark to which many other instances in the Middle East are compared to.[28]

Chile 1973. A high demand for redistribution among the country's poorer segments, a faltering economy, and high inflation resulted in the close presidential election of a leftist Popular Unity candidate Salvador Allende in 1970. Allende pursued a program of nationalization in several industries, while also turning over large estates to farm laborers. Just during his first year, 47 industrial firms were nationalized, along with most of the banking system. Agrarian reform saw the expropriation and incorporation into communal property of six million acres of land formerly held by the large landowners. Many of these policies were directed at US business interests; one legal act, supported by all of the nation's popular parties, nationalized all copper deposits worked by the subsidiaries of the US firms Anaconda and Kennecott. This largely served the country's working class, leading to nearly full employment and a reported 30 percent increase in wages.[29]

Although Popular Unity controlled the executive, its main opposition the Christian Democrats and allies held sway in parliament. The former found most of its support among the working class and farm laborers, while the latter had extensive support among the upper and middle classes. These socioeconomic cleavages, inflamed by the party leaders, made the political atmosphere heavily polarized.

Allende's initial economic success proved short-lived; a US-sponsored economic blockade by the United States effectively shut down the economy. Despite its relatively diverse industrial base, Chile,

[27] Although Algeria just before 1992 is not counted as a democracy in the main definition of democracy used in the analysis in Section 4 and later, it is however included in the alternate definitions that allow for rapidly democratizing countries to be included as democracies in those sections.

[28] "What Algeria 1992 can, and cannot, teach us about Egypt 2013," 23 July 2013, Open Democracy, https://www.opendemocracy.net/hicham-yezza/what-algeria-1992-can-and-cannot-teach-us-about-egypt-2013

[29] "Why Allende had to die," Gabriel García Márquez, The New Statesman, March 1974, http://www.newstatesman.com/2013/03/why-allende-had-die

was heavily dependent on external capital; among its 160 most important firms, 60 per cent of the capital was foreign and 80 per cent of the basic materials were imported. The blockade thus hampered the country's ability to finance imports as well as to cover interest payments on its foreign debt.

Despite the challenges facing the government – many which were part of a deliberate US covert campaign to undermine the Allende government (Kornbluh [60]) – failed to dent Allende's popularity. In the 1973 parliamentary elections, Popular Unity gained in vote share, but not enough to attain a majority. Shortly thereafter, the trucker's union called a strike paralyzing the country. Days before the coup, the army was purged of its high ranking officers supportive to Allende, and on September 11th 1973, the military led by Augusto Pinochet Ugarte intervened. The aftermath was bloody. According to the "The National Commission on Political Imprisonment and Torture Report" published in 2004, during the 17-year-long military dictatorship nearly 40,000 people were detained, 28,000 tortured, and more than a thousand killed. As a result nearly 200,000 Chileans went into exile.

A military junta under Pinochet suspended both the Constitution and Congress, imposed strict censorship and curfews, and banned all political activities. The junta exercised both legislative and executive powers for a year, after which it transferred said powers to Pinochet, proclaiming himself initially "Supreme Chief of the Nation," and, later on, President of Chile. The de facto concentration of powers received its de jure correspondence in 1980 when the 1925 constitution was replaced with one that concentrated power to a large extent with the president, and largely insulated the military from civilian oversight. Pinochet would rule Chile for 15 years until, in 1988, when he lost a plebiscite on whether to serve another eight years as president. A year later, Patricio Aylwin became Chile's first democratically elected leader in sixteen years. Regardless, Pinochet and the military continued to wield significant influence due to the 1980 constitution, and only in 2010 were the last of the military's special privileges removed.

In contrast to the devastating human rights record of the 1973 coup, the dictatorship's economic policies are often lauded as the main conduit for achieving high economic growth (Becker [22]). During the years following the coup, the regime dramatically lowered trade barriers, implemented large scale liberalization policies, privatized many of the industries previously nationalized by the Allende government, and a new law severely restricted worker's rights.

Over the next ten years, little of the fruits of these policies would be visible. High unemployment and recurring economic crises became the hallmark of Pinochet's first decade in power; the dictator "presided over the two deepest recessions to affect the Chilean economy since the 1930s" (Meller [74]). It would take 15 years for Chile to regain its pre-coup level in GDP per capita.

In the mid-1980s, however, growth increased, and ever since, Chile has stood out among its contemporaries for achieving such high growth rates, although not without costs; the post-coup economic policies widened the income distribution, exacerbating poverty levels (Laban [62]). Among those voting against Pinochet in the 1988 plebiscite were a large group of citizens who for one and a half decade had lived through high unemployment and poverty.

The legacy of Pinochet's economic legacy remains a contested subject, even among economists.[30] Some have withheld the dictator's role in midwifing the country into what would later become to

[30] See for example Barro [20], Becker [22], and Krugman [61]

be called the "Chilean Miracle." Others have pointed out not only that it took more than a decade for Chile to regain it's pre-coup level of income per capita, but that many pre-coup policies and institutional changes trump any reforms implemented during the post-73 regime.[31]

Turkey, 1980. In the 1970s, Turkey experienced a combination of economic crisis, civil violence, and political deadlock unprecedented in the country's history (Ahmad [12]). Clashes between extreme factions of both the left and right forced the government to proclaim martial law over vast areas of the country. The country's current account buckled under an increased oil price, debt repayments, inflation, and unemployment. Meanwhile, an electoral system conducive to fragmentation of votes across parties meant weak and brief government coalitions. During the period between 1974 and leading up the coup in 1980, the person holding the position of prime minister altered seven times. The few times politicians did agree were when they faced interference from the military, and a refusal to elect the military's preferred candidate for president in 1973, normally a formality, frustrated an already annoyed military. The government coalitions required the support of fringe parties to survive. One of them was an ultranationalist and militant party which used most of its political power to infiltrate state security institutions, and inflame the violence through its youth movements. Another was an Islamist party whose rhetoric of the need for Sharia law incensed the secular establishment overall but especially the military. In 1979, Iran went through its Islamic Revolution and the Soviet Union invaded Afghanistan. Turkey thus gained renewed strategic importance, and the need for political stability was not lost on the top brass.

The 1980 coup itself was largely implemented without much violence, but the repression and human suffering that followed was substantial. According the Turkish newspaper Hurriyet Daily News 650,000 people were detained, 230,000 prosecuted, 517 received the death penalty, and 1,683,000 people were blacklisted.[32]

The military ruled directly for three years and during this time completely revamped Turkey's institutions, concentrating more power with the government, severely restricting political as well as civil liberties, especially on the left side of the political spectrum and with regards to ethnic minorities. Labor unions were similarly hamstrung. The extreme right-wing was largely co-opted through increasing the state's accommodation of ultranationalist and Islamic ideologies, the ensuing state dogma often referred to as the "Turkish-Islamic synthesis." Whereas those civil associations based on Marxist or Kurdish ideals were hardly suppressed, those with a more Islamic character flourished.

A controlled election was held in 1983, and the new constrained political system gave enormous power to the newly elected Turgut Özal, which for the rest of the decade set upon promoting a set of economic policies without much public consultation. As concerns over his unwillingness to combine economic liberalization with a corresponding political liberalization, his efforts turned more towards gerrymandering legislation and patronage to remain in power. The combination of liberalization

[31] For example, according to Munõz [77], much of the groundwork for Chile's economic success lay in the land reform of the 1960s, which broke up semi-feudal estates, allowing the Pinochet regime an export-oriented economy driven by large-scale agricultural production. Moreover, state institutions like the central bank, Internal Revenue Service and General Comptroller's Office, were all in place due to a modernization process that started as early as the 1920s.

[32] "Turkey's 1980 coup facts," Hürriyet Daily News, April 4th 2012, http://www.hurriyetdailynews.com/1980-coup-facts.aspx?pageID=238&nid=17628.

policies and heavy borrowing eventually resulted in a series of financial crises. Özal's party became increasingly unpopular as other parties gained access to the political sphere, and the situation reverted to one with political bickering and brief weak coalition governments, not unlike the poisonous political climate preceding the coup.

The post-1980 institutions gave significant powers to the judiciary to regulate political participation; over the period 1983-2009, the Supreme Court closed down more than 21 political parties, many of them religious, Kurdish, and left-wing. The electoral system further reflected attempts to prevent participation by unwanted political movements; any party hoping to gain representation in parliament needed at least 10 percent of the popular vote. In 1984 an insurgency erupted in the country's southeastern region pitting the Kurdish Worker's Party (PKK) against state forces, a conflict that has resulted in tens of thousands of deaths and over a million internally displaced persons.[33]

Meanwhile, the military benefited economically from the coup. Its pension fund is today the country's third largest conglomerate, and enjoys tax-exempt status due to a special law (Akça [14]). Concerns over a preferential access to policy deliberations, and privileged business deals remain. Twice since the 1980 coup, the military has attempted to induce the resignation of a democratically-elected government; once in 1997 when it forced the Islamist-led coalition to resign, and once in 2007 when it failed to oust a moderately Islamic majority government.

Algeria 1992.[34] Ever since its independence in 1962, Algeria had been a socialist single-party autocracy, with a centrally planned economy dominated by natural gas. As oil prices fell in the late 1980s, however, this put considerable strain on the government budget, undercutting any attempt at resolving the country's growing social and economic problems. A high birth rate, rapid urbanization and unemployment above 20 percent created large urban areas simmering with discontent not seen since the Independence War of the 1950s. Grievances against perceived corruption and favoritism on the part of the francophone, politically-connected elite, added to tensions.

To stave off rising dissent over its economic failure, and as means to ensure political survival the regime of the FLN (Front de Libération Nationale), led by President Chadli Bendjedid, moved towards introducing multiparty democracy and fair elections for the first time in its history. A new constitution in 1989 paved the way for this political reform. Despite an upswing in political participation among all segments of society, the Islamic Salvation Front (FIS) – a coalition of both radical and moderate Islamists – successfully coalesced pious segments across all social classes. From the start, FIS represented an uneasy cooperation between two larger groupings. Both envisioned Algeria as an Islamic state, but along different strategies. The first, made up of relatively moderate Islamists often referred to as *Djazaarists*, preferred some cooperation with the incumbent regime and gradual reform. The more radical *Salafists*, however, preferred a full implementation of Sharia law, and within this faction, some members did not spurn the use of violence to achieve their goal.

In the 1990 local elections, the FIS won nearly 54 percent of the vote, against the incumbent's 28 percent. At the local level, the FIS improved local service delivery and living standards. At the

[33] http://www.internal-displacement.org/8025708F004CE90B/(httpCountrySummaries)/66D21F80E3A69E41C125732200255E35?OpenDocument&count=10000

[34] This section draws on Kepel [59] and Quandt [85]

national level, however, divisions among the FIS leadership on the role of Sharia law in Algeria became more apparent and alienated many moderates. During the Gulf War, the Salafist faction staged a demonstration in front of the Defense Ministry demanding a volunteer force to go join Saddam Hussein in Iraq, a message the military took as trespassing on their turf.

The regime increasingly sought to limit Islamist electoral success through any means available, including gerrymandering legislation. This, in turn, undermined Djazaarist attempts to negotiate with government, and a general strike was called. Quickly spiraling out of control, violent protests were met by tanks, and the FIS leadership was detained (and would remain in prison for most of the 1990s, on charges of inciting and organizing an armed insurrection against the state). Many among the more radical faction of the party, disillusioned by recent events, left the party, some choosing to go underground joining more militant organizations. This had the result of the moderates gaining control, and a reassertion of the FIS commitment to electoral participation was made by their new leader Abdelkader Hachani.

Although the FIS lost many votes in the 1991 first round general election, it nonetheless received a majority, soundly beating the incumbent FLN. Yet lingering concerns over the FIS's radical influences, the military's future role as well as the regional implications of a democratically elected Islamist government, led the military to intervene on January 11th, 1992. In an unexpected appearance on live television, President Benjedid announced the failure of the democratic practices, that he could no longer ensure law and order, a covert dissolution of parliament, and finally his own resignation. A day later, Algeria's Supreme Court declared this situation not specified in the Constitution, temporarily transferring both legislative and executive powers to a council overrepresented by military officers. Among its first decrees was the suspension of any further elections.

In the following crackdown, FIS members, imams, and journalists were imprisoned along with many militant Islamists; the second-round elections were also called off. Shortly afterwards, the first terrorist attacks started. The following decade would be marred by bloody civil war pitting Islamic fundamentalists under the Groupe Islamique Armé (GIA) against government forces; a conflict that would claim a death toll of more than 100,000. Despite a ceasefire in 1997, factions of the GIA remained fighting and have today become an integral component in the Al-Qaeda in the Islamic Maghreb (AQIM).

In addition to skepticism over FIS policies, the military also had an interest in the status quo, for it provided substantial material benefits to the armed forces. For example, the partial economic liberalization policies under FLN meant lucrative business opportunities for military leaders and their civilian allies (Cook [32]). Over time, "some of Algeria'ss top generals have transformed into an informal but influential trade lobby that ensures the country's key business deals enrich them and their families."[35]

The need to preserve military rents also lay behind the demise of the first post-coup leader, Mohamed Boudiaf. Almost immediately after the coup he was called back from exile in Morocco to serve as President. As a veteran of the Independence War and cofounder of the FLN, the then 72-year-old was seen as an independent moderate, an outsider who could navigate a difficult path between a hawk-

[35] "Will Algeria's army be the dark horse in the next election?," Erin Cunningham, The Global Post, March 26 2013, http://www.globalpost.com/dispatch/news/regions/africa/130326/algeria-military-algerian-elections

ish military and the poor and pious working class. The military had not counted on Boudiaf's concern over corruption within certain segments of the military. A short while after announcing a campaign of trying senior officers for corruption, Boudiaf was assassinated by his own bodyguard during a televised interview. Although the perpetrator was said to have Islamist sympathies, some observers have seen the assassination of Boudiaf as a "consequence of the behind-the-scenes power struggle between top military officers" (Volpi [91]).

Appendix A-1 Synthetic matching

Turning back to the case studies of Chile, Turkey, and Algeria discussed in Section Appendix A, Figure A-1 plots the GDP per capita in 15-year windows around the coups (in log scales) as the solid black line. In both cases the coups were preceded by substantial economic growth ending in economic crises. After the coup, both countries, but especially Chile, experienced substantial economic crises, and even Turkey saw several periods with zero or negative growth. Comparing the income path after the coup to the pre-coup trend shows both Chile and Turkey growing slower than before, but for several reasons, the pre-coup trend is an unsuitable counterfactual to how the countries would have grown without a coup.

Recent innovations in case study research (Abadie and Garedazabal [2] Abadie, Diamond, and Hainmueller [1]) allows construction of synthetic control units, meaning counterfactuals as convex combinations of multiple control units. This is done by calculating weights that best approximates the relevant characteristics of the treated unit during the pretreatment period. The post-intervention outcomes for the synthetic control unit are then used to estimate the outcomes that would have been observed for the treated unit in the absence of the intervention.

More formally, define countries $j = 1, ..., J+1$ in time periods $t = 1, ..., T$. The first unit $j = 1$ is subject to the treatment, in this case a coup, and the remaining J units represent the donor pool with which I form the synthetic control. Further define the treatment as occurring in period $T_0 + 1$ so that $1, 2, ..., T_0$ represent the pre-intervention periods and $T_0 + 1, T_0 + 2, ..., T$ are post-intervention periods.

There are two potential outcomes; Y_{it}^N referring to the outcome for unit i in period t where there is no coup, and Y_{it}^C which would be observed for unit i if there was a coup. The relevant parameter to estimate is the difference between the two potential outcomes $\alpha_{1t} = Y_{1t}^C - Y_{1t}^N$ in the periods $t \geq T_0 + 1$. As Y_{it}^N is not observed for the treated unit in post-intervention periods, synthetic matching resolves this by constructing a reasonable estimate for this potential outcome.

In order to do this, define a vector of covariates U_i for each unit, as well as a $(T_0 \times 1)$ vector $K = (k_1, ..., k_{T_0})'$. To construct the synthetic control, specify a $(J \times 1)$ vector of weights $W = (w_1, ..., w_{T_0})'$ such that $\sum_{s=2}^{J+1} w_s = 1$. Each W represents one particular weighted average of the J control units. Abadie et al [1] choose weights W^* such that the synthetic control best approximates the treated unit with respect to outcome predictors U_i and M linear combinations of the pre-intervention outcomes $\bar{Y}_i^{K_1}, ..., \bar{Y}_i^{K_M}$. The optimal weights are selected as $W^* = w_2^* + ... + w_2^{J+1}$ such that $\sum_{j=2}^{J+1} w_j^* \bar{Y}_j^{K_1} =$

$\bar{Y}_1^{K_1}, ... \sum_{j=2}^{J+1} w_j^* \bar{Y}_j^{K_M} = \bar{Y}_1^{K_M}$ and $\sum_{j=2}^{J+1} w_j^* U_j = U_1$. Then

$$\hat{\alpha}_{1t} = Y_{1t} - \sum_{j=2}^{J+1} w_j^* Y_{jt} \tag{A-1}$$

is an estimator of α_{1t} in periods $T_0 + 1, T_0 + 2, ..., T$.[36]

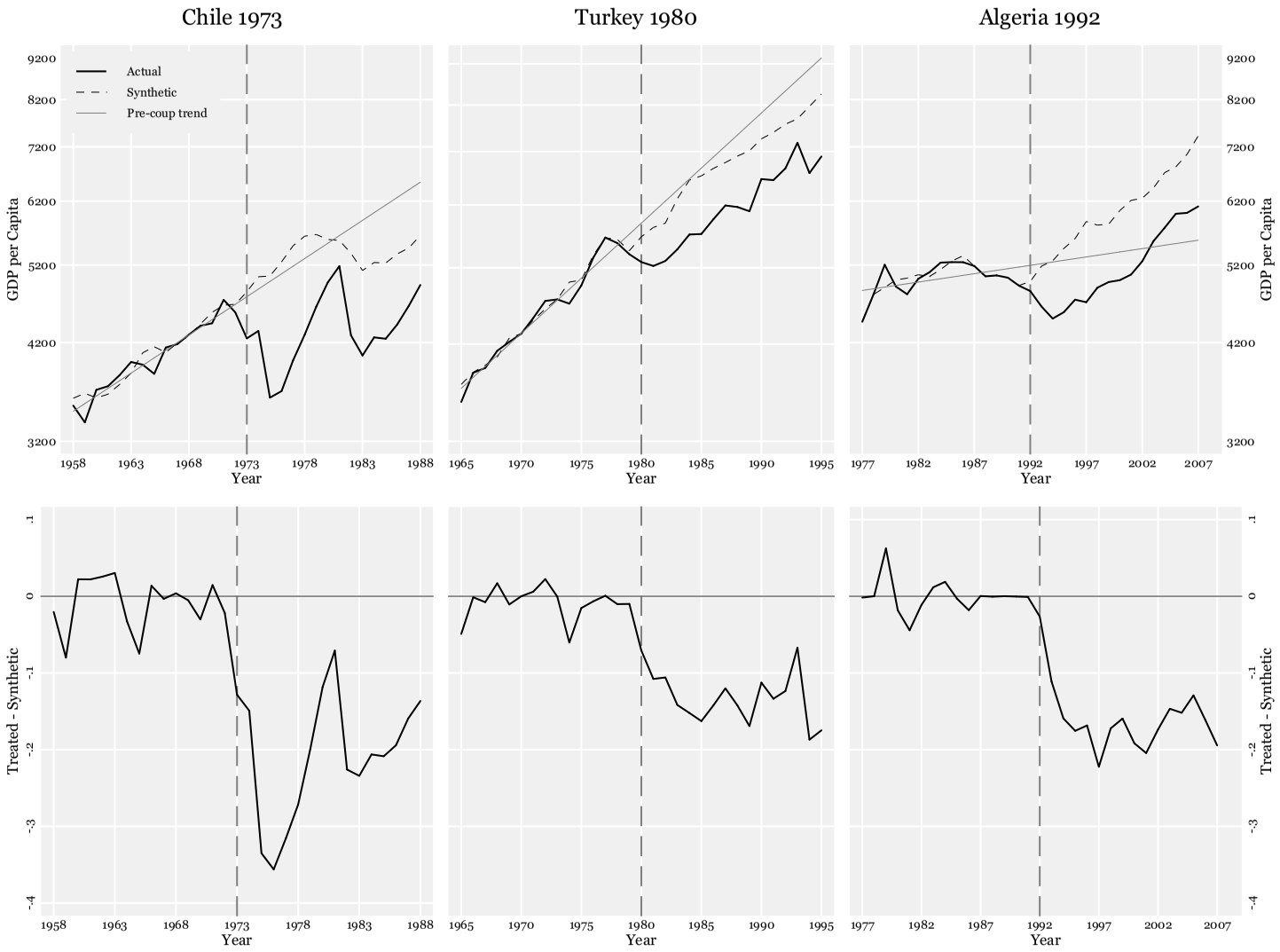
I use the variables log GDP per capita, growth in GDP per capita, log population, years since the last coup, and the number of past transitions to autocracy, as well as the individual GDP per capita values of the five years preceding the coup as covariates from which the weights are derived. Also, any observations eligible for receiving non-zero weights cannot experience a coup 15 years before or after the respective coup cases. For the Turkey case the

The resulting synthetic controls for Turkey and Chile are plotted as the dashed line in Figure A-1. These control units exhibit near-identical trends before the coup but post-coup, the treated and synthetic units diverge with the former experiencing a much lower income path. The difference between the treated and synthetic units are plotted in the two bottom graphs. Even 15 years after the respective coups, all three coup cases have significantly lower GDP per capita compared to their synthetic counterparts.

Using synthetic control units for the case studies are certainly of interest, but as for causal inference, it relies on the rather strong assumption that growth-affecting factors making coups more or less likely do not differ between the treated and synthetic counterparts. At best, this exercise shows that conditional on GDP dynamics and several coup-relevant factors, Chile, Turkey, and Algeria's development paths suffered more than their synthetic counterparts. In the next section, I address the endogeneity concerns of the effects of coups on growth more rigorously.

[36] For additional computational details, see Abadie et al [4]

Figure A-1: Case Studies with Synthetic Controls



Notes: The upper graphs show the GDP (PPP) per capita (black line), pre-coup trend in GDP per capita (gray line), and a Abadie, Diamond and Hainmueller [1] synthetic control (all in log scale), whereas the bottom graphs show the corresponding differences between the treated unit and the synthetic control, for Chile 1973 (left), Turkey 1980 (middle), and Algeria 1992 (right). Covariates used to calculate the synthetic control are log GDP per capita, growth in GDP per capita, log population, years since the last coup, and the number of past transitions to autocracy, as well as the individual GDP per capita values of the five years preceding the coup as covariates from which the weights are derived. Any control units eligible for receiving non-zero weights cannot experience a coup 15 years before or after the respective coup cases.