The effect of military political power on economic development in *de jure* democracies

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Abstract

In this paper, I link the literature on economic growth with the study of illiberal democracy and military power. Given that research on the effect of democracy on growth has yielded inconclusive results, I contribute to the literature by testing whether democracy's effect is contingent on the military holding political power. Democratic regimes have problems with committing themselves credibly to providing the military with economic resources and political power. As a consequence, the military may use its *de facto* power to intervene in the policy-making to maintain its status. However, if it becomes involved in the decision-making process, it will likely hurt economic growth by pursuing its special interests. I hypothesize that democracy has a positive effect on gross domestic product (GDP) growth but only if the military does not hold political power. I test this claim with a panel fixed effects model and Generalized Method of Moments (GMM) estimations using a sample of more than 100 countries over 25 years. The results support my hypothesis.

1 Introduction

Economic growth is one of the most prominent issues in the social sciences. Many studies have examined why its rate varies over time and across countries. For more than fifty years, scholars have claimed that institutions are a determining factor for economic development. However, there is much debate on the question of how *democratic* institutions contribute to a country's gross domestic product (GDP) per capita growth. With the Arab Spring the attention has once again been directed to this question as politicians and scientists discuss whether the regime transitions herald a new era with more civil liberties, political rights and economic growth.

This paper contributes to the existing literature by illustrating that democracy's effect on growth is contingent on military political power. In democratic regimes various actors, such as monarchs, religious leaders, and militants, may circumscribe the elected officials' effective power. The ability to gain decision-making autonomy, however, depends crucially on the resources the respective groups have at their disposal. In most countries it is the military that is particularly well situated to encroach on the democratically elected representatives' effective power to govern (Croissant, Kuehn, Chambers, & Wolf, 2010). It is the very features that enable the military to fulfill its missions that also give it the ability to enforce its will upon the society.

Civilian supremacy over the military, so far, has been primarily defined in terms of "coup-ism" (Feaver, 1999). It appears that the absence of military coups is equated with civil control of the military. Many other forms in which military elites can constrain the authority of the citizens and their democratically elected leaders, however, have not been investigated very well (Croissant et a. 2004; 2011). Scholars who ignore these factors and equate civilian control of the military with the absence of coups do not take into account that the military faces an incentive to participate in politics to maintain its economic and political status since democratic societies have problems with committing themselves credibly to providing the military with economic and political power. The military may therefore use its power to intervene in the policy-making in order to maintain political status and to secure resources. If, however, it becomes involved in the political decision-making process, it will likely hurt economic growth by pursuing its special interests.

In this paper I hypothesize that becoming more democratic has a positive effect on a country's GDP growth, through an increase in total factor productivity (TFP), but only if the military does not have political power. In order to test this hypothesis I perform panel fixed-effects estimations using data from more than 100 countries during the period of 1984-2008. I also account for the possible endogeneity of democracy by employing dynamic panel Generalized

Method of Moments (GMM) estimations. My results show that becoming more democratic has a positive marginal effect on GDP growth, but only at low-to-intermediate levels of military political power. The positive effect decreases with higher military political power.

My study adds two aspects to the existing literature: First, it shows that the commonly used measures for democracy (such as Polity IV or Freedom House) do not capture military political power well. In a country where the military has substantial political power, decision-making is constrained in a multitude of areas, no matter the result of free elections. The fundamental idea of democracy, however, is to give the *demos* the ultimate decision-making power. Consequently, the common democracy measures fail to capture the *de facto* political power of the military appropriately and only indicate the *de jure* level of democracy of a country. Second, while the literature has tried to establish a link between military expenditures as well as the number of armed forces and economic growth, they have not considered how these two factors may spuriously capture military political power. Once I control for the political power of the military neither the amount of military expenditures nor the number of armed forces have a significant effect on GDP growth.

Applying the theoretical arguments of this paper on the Arab Spring I claim that the prospects for economic development in Egypt and Tunisia, even though both face seemingly similar opportunities and challenges, vary considerably. This is because military intervention in politics differs between these countries. While the military in Tunisia has traditionally been depoliticized, Egyptian military has often heavily intervened in the political decision-making. By doing so, it will curtail the positive effects of democracy on growth.

The remainder of this paper is structured as follows: I will first review the relevant literature before I introduce the theoretical framework of the paper. After that, I present the research design and discuss the data as well as some methodological concerns. The following section outlines the results and the last section concludes.

2 Related Literature

The scientific discussion about the relationship of democracy and economic growth started almost half a century ago and therefore encompasses a large number of empirical studies. I will briefly review the most relevant recent contributions investigating the general effect of democracy and potential mediating factors. Additionally, I introduce the literature on military expenditure and economic growth.

Barro (1996) and Tavares and Wacziarg (2001), among others, explore cross-country variation. Barro shows that the overall effect of democracy on growth is slightly negative but not significant. The author, however, suggests a potential non-linear relationship where democracy promotes economic growth at low levels of political rights but reduces growth when higher levels of freedom prevail. Similarly, Tavares and Wacziarg (2001) find that the overall effect of democracy is moderately negative.

Other scholars examine when democracy has a positive effect on growth and when it does not. Rodrik and Wacziarg (2005) find that major democratic transitions have a positive effect on economic growth in the short-run, especially for the poorest countries, and that democratization is also associated with a decline in growth volatility. Persson and Tabellini (2007) suggest that transitions from autocracy to democracy are associated with an average growth acceleration of about 1 percentage point. Contrarily, Papaioannou and Siourounis (2008) argue that the economic benefits of democracy will appear in the long run. Their estimates indicate that during transitions growth is relatively slow while in the medium and long run it stabilizes at a higher level. Persson (2005) provides evidence that the form of democracy (rather than democracy versus non-democracy) has important consequences for the adoption of structural policies that promote economic performance.

Recently, a few authors have examined whether the effect of democracy on economic development is conditional on other mediating factors. Collier and Hoeffler (2009) find that in developing countries the combination of resource rents and democracy has been significantly growth reducing. Aghion, Alesina and Trebbi (2007) add an interaction term between democracy and distance from the technological frontier. They provide evidence that political rights are conducive to growth in more advanced sectors of an economy, while they do not matter or have a negative effect on growth in sectors far away from the technological frontier. Assiotis and Sylwester (2010) introduce a democratization and "law and order" interactive term. The authors find that the positive effects of democratization diminish in countries where other institutions are strong. In particular, they show that democratization could even reduce growth where the rule of law already prevails. Libman (2011) introduces a democracy-bureaucracy interaction term in his analysis of Russia. He shows that increasing democracy has a negative impact on economic growth for regions with a relatively large bureaucracy.

While there is no study that examines the military as a mediating factor of democracy, researchers have tried to establish a direct link from military expenditures to economic development with mixed results. A number of studies find a positive impact of military spending on economic growth (Mueller & Atesoglu, 1993; Murdoch, Pi, & Sandler, 1997; Shieh, Lai, &

Chang, 2002; Wijewerra & Webb, 2011; Yildirim, Sezgin, & Öcal, 2005). In contrast, other scholars have not found any significant effect (Benoit, 1973; Biswas & Ram, 1986; Deger & Smith, 1983; Maizels & Nissanke, 1986; Nincic & Cusack, 1979). Other studies, however, emphasize that the effect may be different across countries because of the varying political and economic environments and because the relationship may not be linear (Aizenman & Glick, 2006; Kentor & Kick, 2008; Pieroni, 2009; Yang, Trumbull, Yang, & Huang, 2011). Thus, there is little consensus as to what the effect of military expenditure on economic growth may be (Dunne, Smith, & Willenbockel, 2005).

As shown above, the literature has come to inconclusive results about the effect of democracy on growth. This paper aims at contributing to the democracy-growth literature by providing a new theoretical framework, which introduces military political power as an intervening variable between democracy and growth. That the military may use its resources and coercive power to maintain its powerful status in society has so far not been taken into consideration by the growth literature. The military's political power, however, may account for a substantial part of variations in economic performance, as good political and economic institutions are hard to establish if a powerful military intervenes in the policy-making process and pursues its own interests.

3 Theoretical Framework

This section introduces the theoretical framework of the paper. The first part examines why democracy tends to promote growth. This is followed by showing how economic resources and brute force can be used to manipulate political decision-making by political elites as well as the military. The relevance of military intervention in politics is illustrated with a case study of Egypt and Tunisia.

3.1 Why democracies tend to promote growth

To state an informed hypothesis on how the military may interfere with the growth-promoting mechanism of democracy, this mechanism must be outlined first. The positive effect of democracy on economic growth may be direct, as in the case of an increase in total factor productivity (TFP), or indirect through better public goods provision. This section discusses each channel separately.

Technological progress plays an important role for economic growth. The literature indicates that TFP accounts for a substantial part of the differences in GDP per capita (Caselli, 2005; Hsieh & Klenow, 2009). TFP measures the underlying production technology and reflects long-term technological change or technological dynamism. Consequently, it shows effects in total

output not caused by traditionally captured inputs. The most important factors explaining differences in TFP are slow technology diffusion from advanced to other countries (Howitt, 2000; Klenow & Rodriguez-Cöare, 2005) or the misallocation of resources (Melitz, 2003; Restuccia & Rogerson, 2008). Some of the impediments to resource reallocation may arise because of poor governance and lack of human capital, which exacerbate the costs of new technologies (Bergoeing, Loayza, & Piguillem, 2010), through government's distorting interventions in markets, or policies that restrict the set of technologies that individual production units can use (Parente & Prescott, 2000). Here, democracy appears to have and important effect on technological change (Acemoglu, Johnson, & Robinson, 2005; Knutsen, 2010). Rivera-Batiz (2002) shows that democracy is a significant determinant of TFP growth as it increases the quality of governance and consequently constraining the action of corrupt officials, which would undermine the capital account liberalization that will produce an expansion of the steady state growth rate.

Additionally to increased TFP, democracies supposedly provide more public goods (De Mesquita, Morrow, Siverson, & Smith, 1999; Olson, 1991). The effective provision of public goods is not only a key element of quality of life but also central to any credible poverty reduction strategy (Besley & Ghatak, 2006). A number of empirical studies have shown that the share of government spending on public goods has a significant and positive impact on economic development (Fan, Peter, & Thorat, 2000; Hong & Sadiq, 2009; Lopez, 2007; World Bank, 2004). Public goods create positive externalities from which people cannot be excluded nor is there rivalry in consumption. As an example, better infrastructure and better social security nets generate such externalities. Overall, these externalities result in welfare gains for the general population. Non-democratic regimes are likely to under-provide such public goods because they are typically ruled by small elites that use the resources of their respective country to create personal wealth. Thus, if the costs of implementing policies that promote economic growth are borne disproportionally by the elites while the benefits are dispersed throughout the population, elites do not have incentives to implement them. Contrarily, in a democracy the provision of public goods is more likely as the median voter who decides on public policy faces lower costs from implementing them relative to the economic and political elite (Olson, 1991).[1]

Ideally, a paper that aims at measuring the positive effect of democracy on economic growth should take into account both, direct and indirect, channels outlined above. However, while the effect on TFP can be directly captured, the mechanisms through which public goods provision

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[1] Note that the political elite in a non-democratic regime may also have an interest in the provision of public goods and economic growth in order to maintain their power and avoid a coup. However, it is likely that public good provision in such a case is far away from socially efficient (Olson, 1991).

leads to increased growth are less evident. This would require extensive theoretical considerations that cannot be provided here due to the limited scope of the paper. Therefore, the empirical analysis focuses on the former channel, while acknowledging the shortcoming of this approach.

3.2 *De facto* political power as a means to intervene in policy-making

Acemoglu and Robinson (2006) state that traditional elites are often willing to grant democracy because they expect to command a great deal of power under the new institutions. Especially the manipulation of the electoral rules facilitates the maintenance of power. But in order to be able to manipulate such rules, these actors must at least have one specific type of power, which the authors call "*de facto* political power". An actor possesses *de facto* political power if it:

> "[…] can revolt, use arms, hire mercenaries, co-opt the military, or use economically costly but largely peaceful protests in order to impose their wishes on society. We refer to this type of political power as de facto political power, which itself has two sources. First, it depends on the ability of a group in question to solve its collective action problem, i.e. to ensure that people act together, even when any individual may have an incentive to free ride. […]. Second, the de facto political power of a group depends on its economic resources, which determine both their ability to use (or misuse) existing political institutions and also their option to hire and use force against different groups" (Acemoglu et al., 2005, p. 391).

De facto political power is not allocated by the political system and institutions of the state. Instead it reflects more the brute force of an actor, which has no legal basis but depends entirely on the ability of a group to organize its resources as a means to assert this type of power (Bhave & Kingston, 2010). Therefore, this type of power is rather transient. Consequently, actors who want to shape political policies in order to render them favorable for their own purposes need to overthrow or alter the persistent institutions, while they still possess *de facto* political power.

De facto political power poses a double challenge, as it may directly or indirectly threaten a democratic regime. A direct threat emerges if the former elite still possesses enough *de facto* power that it may use to sponsor a coup to reverse the balance of power. A coup thus is a way of regaining institutionalized power so they can continue pursuing the policies that are beneficial for them. However, even though the former elite may still possess a certain amount of *de facto* power that it could use to revolt, a coup may be very costly and the potential gains may not compensate the losses. Acemoglu and Robinson (2006, p. 244) state that "[...] coups happen only in the high state, which can be interpreted as relatively unlikely or unusual state. [...] the high state corresponds to periods of recession or economic crisis. During such crises, undertaking a coup may be less costly because society is in disarray and a proportional loss of income or output is already low".

Thus, holders of *de facto* political power may often favor a non-violent and indirect way to influence policy decisions. Disenfranchised elites may not actually revolt against the new regime but only threaten to do so. As Acemoglu et al. (2005, p. 392) state, those who hold political *de facto* power will try to influence the evolution of political institutions, in order to maintain their power which means that "often they simply influence the ways existing political institutions function, [...] whether the rules laid down in a particular constitution are respected as in most functioning democracies, or ignored [...]". Consequently, the new regime and the elected representatives try to avoid a coup by granting more institutionalized political power to these actors. However, offering such concessions results in policies that are inferior to those that would occur in the absence of a coup threat. This is not only politically relevant, as elites in a newly democratized country may undermine the civilian authority, but it may also have economic consequences since political and economic institutions in such a situation may be shaped in a way that serves the narrow interest of the elite rather than the one of the general population.

3.3 "Contra vim non valet ius" – Why the military matters

The growth literature has almost exclusively directed the attention towards the role of former political elites and their power on regime transition and consolidation. However, there may be other important and powerful actors, besides these elites, that may also possess enough *de facto* political power to intervene in the policy-making process and to shape political and economic institutions so that they serve their interests. The identification of these actors, though, is challenging. The basic features of *de facto* power are economic resources and the capability to solve the collective action problem, revolt, use arms, hire mercenaries, or conduct economically costly but largely peaceful protests. In each country one group or another may have more or less power, and therefore over a large sample of countries one does not expect any particular group to be politically relevant. One group, however, seems to be powerful in almost every country: the military.

Acemoglu and Robinson (2006) state that researchers tend to assume that the military represents either the interests of the elites or those of the civil society. The authors, however, also argue that "[…] there is a widespread claim in political science that the military often intervenes not on behalf of some social group, but with its own interests in mind" (Acemoglu & Robinson, 2006, p. 313). Acemoglu and Robinson further emphasize that in practice, the objectives of the military are not perfectly aligned with those of a single group. Especially in developing countries, where the military is very powerful, it is important to examine the role of the military in democratic regimes.

This issue is partially addressed by Acemoglu et al. (2010). In non-democratic regimes the military almost always plays an important role as it can be used as a source of repression against competing groups to some degree. Creating a powerful military, however, is a double-edged sword for the elite. A more powerful military is more effective in preventing transitions to democracy but may at the same time demand greater concessions in exchange for refraining from a military takeover. However, most non-democratic regimes rely at least partially on a strong military as a source of repression against competing actors. Consequently, as a powerful military has an important role in the maintenance of a non-democratic regime, it may also be highly influential in democratic politics, especially in emerging democracies. Thus, the presence of a strong military changes both, democratic and nondemocratic, politics.

Acemoglu et al. (2010) show that, faced with a powerful military, a newly emerging democracy needs to make concessions in order to avoid a coup threat, just as in the case of powerful political elites. Once the military is reformed, this threat will disappear. The authors note that since the military anticipates that it will be reformed as soon as the opportunity arises, it will be difficult to control the military during the first phase after a democratic transition, a point that was already raised by O'Donnell and Schmitter (1993). This is because there is a commitment problem of the democratic regime to provide the military with power or to credibly compensate it for not taking action against the democratic regime.

To summarize the arguments above, the military may have an incentive to use its coercive power to manipulate political and economic institutions, and thus it can a) undermine civilian attempts to transform the military, b) secure its own (decision-making) power, and c) maintain prerogatives as well as the control over military areas such as national defense and internal security as well as defense budget. A regime with such a military can, at best, be classified as *de jure* democracy.

3.4 Case study: Regime transitions in Egypt and Tunisia

Such tendencies can also be observed in Egypt at the moment where the military has long played an important role. As Karawan (2011) states, Egypt has always been ruled by a president with a military background, who depended on their ties to the armed forces as their ultimate power base. When the Mubarak regime was challenged in early 2010, the president relied on the police and the security services. They, however, had more and more difficulties to suppress the teeming masses. As a consequence, the military emerged openly on the political scene (Hashim, 2011). It declared that it would guarantee a democratic transition. Its reluctance to save the

regime was then the decisive factor for the quick downfall of the president. After Mubarak was overthrown, the military revealed its enormous influence in the Egyptian society (Anderson, 2011). Contrarily to the general perception of the population that the military would promote a quick consolidation of civil power, it heavily worked on the maintenance and continuity of its own power. With the departure of Mubarak, the army took responsibility for defining a more acceptable political regime, but one that would preserve a high degree of military power. The military thus formed an alliance with the Muslim Brotherhood, the Islamist group that now dominates Parliament. This alliance, however, has been under pressure as continuing protests demand a fast removal of the military from the political scene. Nonetheless, the military is currently the dominating actor in the political transformation in Egypt. As "The New York Times"[2] reported, the military said it would give up power only after the ratification of a new constitution and the election of a president, which took place in June 2012, a schedule that enabled the military to shape the constitution by overseeing its drafting. Considering these factors, one must assume that it will maintain a substantial amount of political power in the future, which it can use to intervene in politics.

In contrast to Egypt, the Tunisian army has traditionally been marginalized in order to ensure that it could not be a threat to the regime (Joffé, 2011). The only event where the military intervened was 1984 when it was brought in by President Bourguiba to restore order after severe food riots. This, however, was an exception as the military officers were usually profoundly apolitical and abstained from political affairs. It was the police and security services who exercised internal duties. Because the army was always excluded from politics in Tunisia, when the regime finally collapsed it decided not to open fire on demonstrators. The police and security services being unable to suppress the demonstrations, the president had no choice than to flee. Thus, if the current democratization processes continue, one can expect that the military will not command a great deal of political power in the future.

3.5 The military as a special interest group

The reason why military political power hurts growth is similar to the arguments made by Olson (1993) on the effect of other interest groups on economic development. He argued that a democratic system could suffer from the existence of interest groups that do not have a real incentive to make sacrifices in the interest of the society as a whole. These groups show the propensity to lobby for preferential policies, thus imposing disproportionate costs on society. As a consequence, their attempts to seize the economic pie will be to the detriment of growth. With

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[2] For example see http://www.nytimes.com/2012/01/12/world/middleeast/jimmy-carter-expects-egypt-military-to-keep-some-powers.html [12.01.2012]

more interest groups comes "[...] more lobbying and rent-seeking, more effort devoted to protecting market share from competitors, and less emphasis on research and development that leads to new products or technological improvements, less investment and, therefore slow economic growth" (Coates & Heckelman, 2003, p. 334). In short, the involvement of interest groups in politics and their competition over access to and control over legislative and administrative processes results in an institutional sclerosis, which in turn stifles economic growth.

As Bhave and Kingston (2010, pp. 51-52) state: "The military is both an institution of the state and a powerful interest group". It has the same features as other interest groups, such as a common purpose, limited size, and a hierarchical structure, which allow it to overcome the collective action problem. Its involvement in politics is thus likely to have the same detrimental effects to economic growth. As outlined above, democracy is expected to increase TFP, however, the effect occurs only insofar as the democratic institutions are associated with greater quality of the governance. If the military, as an interest group, is politically powerful and engages in rent seeking, it directly impacts the quality of governance and consequently the positive effect of democracy on economic growth. Therefore, we can expect that in regime where the military is politically powerful we would not find a positive effect of democracy on economic growth through increased TFP.

4 Research question and hypothesis

After having outlined the theoretical framework of this study, I can formally specify the relationship between democracy, military political power, and economic growth. As stated above, a democratic transition can lead the military to rely on its resources and coercive power as a means to intervene in the policy-making process. This, however, is likely to alter policies in a way that is beneficial only to a small part of the population. Consequently, the positive channels through which democracy would lead to higher growth rates cannot prevail. Given the specific role of the military in democratized countries we can now ask *does military political power influence the effect of democracy on economic growth*? I hypothesize that democracy has a positive effect on economic growth, but the positive effect vanishes with higher levels of military political power.

5 Model specification

This section presents the empirical model of this work. The first part introduces a panel fixed effects model while the second part discusses the data and addresses some of the most prevalent methodological concerns.

5.1 Panel estimation

To test the aforementioned hypothesis empirically, I use a model that is specified as follows:

$$y_{i,t} = \beta_D D_{i,t} + \beta_M M_{i,t} + \beta_{DM} DM_{i,t} + x_{i,t}\varphi + \alpha_i + \theta_t + \varepsilon_{i,t}$$

For each country i and year t in the sample I observe economic growth $y_{i,t}$, as a function of level of democracy $D_{i,t}$, military power $M_{i,t}$, an interaction term $DM_{i,t}$, and a matrix of covariates $x_{i,t}$. Furthermore, α_i and θ_t are country and year fixed effects.[3] The key parameter to be estimated is β_{DM}. A negative value implies that the effect of democratization on growth declines with higher military political power.

5.2 Data

Gross Domestic Product (GDP) growth is the dependent variable. It refers to the annual percentage growth rate of the GDP per capita. Data for GDP per capita is provided by the World Bank (2011) and measured in constant 2000 U.S. dollars. I will later use the lagged value of GDP growth as a covariate to test the robustness of the results.[4]

In line with other recent studies such as Rodrik and Wacziarg (2005), Persson and Tabellini (2006; 2007), and Nannicini and Ricciuti (2010), I choose Polity IV as a measure for democracy. I prefer Polity over Freedom House because it seems to have fewer methodological flaws (Cheibub, Gandhi, & Vreeland, 2010; Munck & Verkuilen, 2002). The Polity measure captures the regime authority spectrum on a 21-point scale ranging from -10 (hereditary monarchy) to +10 (consolidated democracy) (Marshall, Gurr, & Jaggers, 2011). Even though Polity is used as main indicator for democracy, Freedom House civil liberties (CL) and political rights (PR) and Cheibub, Gandhi and Vreeland's (2010) democracy dummy (DD) and a dummy version of the Polity (score of 6 or higher equals 1) are investigated as robustness checks.

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[3] The decision to include country fixed effect was based on a 'Hausman test', which indicates that a fixed effects model corresponds best to the data. Additionally, to see if time fixed effects are needed I conducted a 'Wald test', which is a joint test to see whether the dummies for all years are equal to 0. The test rejects this null hypothesis and thus year fixed effects are required.

[4] There is an ongoing discussion in the literature if including a lag of the dependent variable is problematic and biases estimation results (for a discussion see Keele and Kelly 2006). I follow the arguments in favor of doing so and use this setting for the robustness checks.

The second variable of interest is military political power. I use the indicator 'Military in Politics' of the 'International Country Risk Guide' provided by the *PRS Group* (Howell, 2011).[5] The index measures the degree of military political power. It ranges from zero to six where lower ratings indicate a greater degree of military participation in politics. As stated above, since the military is not elected by anyone its involvement in politics, even at a peripheral level, is a diminution of democratic accountability. I argue that a measure that reflects the military's participation in politics can be used as a proxy for the military's political power, as it is not supposed to have an active role in politics in a democracy.[6] In order to make the interpretation of the values more intuitive, I rescale the measure so that lower values indicate less political participation. Unfortunately, exact coding rules for this measure are not available. According to the PRS Group, values are based on expert assessment.

The choice of the control variables is based on the augmented Solow model, which has been introduced by Mankiw, Romer and Weil (1992), as baseline model. It adds a measure, human capital, to Solow's original specification with physical capital and labor. Physical and human capital are particularly important as they are factor accumulation channels. Income convergence plays a crucial role in all growth theories and thus initial income is always included in empirical studies of economic growth. In my panel specification, income convergence is captured by the country fixed-effects. I use the *investment* share of PPP converted GDP per capita (at 2005 constant prices) as a proxy for a country's physical capital stock. Data for this measure comes from the Penn World Tables version 7.0. Human capital is measured by the *Secondary School Enrollment Rate* (% gross). Gross enrollment ratio is the ratio of total enrollment, regardless of age, to the population of the age group that officially corresponds to the level of secondary enrollment. *Population growth* is used as a proxy for labor. A ceteris paribus increase in the rate of population growth causes long run per capita output to fall, because with higher population growth more output must be used to equip new workers with capital, leaving less output available to increase capital per worker. Data for the secondary enrollment rate and population growth comes from the 'World Development Indicators' provided by the World Bank (2011).

The extended model adds three variables to the baseline specification: *inflation, trade* and *government consumption*. These variables are used to control for the time-varying differences in the countries' macroeconomic frameworks, in the extent of state control and in the openness of the

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[5] ICRG data was introduced in the growth literature by Knack and Keefer (1995) and Hall and Jones (1999)

[6] As coding rules for the "Military in Politics" measure are not available, I cannot know whether democratically elected military personnel are also captured by the measure. However, even if there are democratically elected members of the military participating in politics, it still may be problematic. Military members will most likely make decisions that are primarily favorable for the military and are thus not necessarily in the interest of the civil society.

economy. *Inflation*, measured by the consumer price index, reflects the annual percentage change in the cost to the average consumer of acquiring a basket of goods and services that may be fixed or changed at specified intervals. *Trade* is the sum of exports and imports of goods and services measured as a share of the gross domestic product. Data on inflation and trade is provided by the World Bank (2011). *Government consumption* refers to the government consumption share of PPP converted GDP per capita (at 2005 constant prices), which includes all current government expenditures for purchases of goods and services (Heston, Summers, & Aten, 2011). Data is provided by the Penn World Tables Version 7.0.

So far, the model specifications have not explicitly included variables that measure the military's resources. However, one wants to make sure that the effect of military political power does not just emerge because of a spurious relationship while the actual effect is driven by the omitted variables *size of the army* or *military expenditures*. Thus, I include these variables in the regression. Data for the *size of the army* and *military expenditures* is provided by the World Bank (2011). As military expenditure and the number of armed forces are highly correlated with each other, I will not use them together in the same regression.

5.3 Methodological concerns

To account for the non-independence of observations within countries, I present robust standard errors, clustered on the country unit. Such standard errors also account for serial autocorrelation in the residuals. Some of the variables, such as GDP per capita, inflation, the number of armed forces, and military expenditures, are well known for not being normally distributed. I transform the variables using their natural logarithm. Another aspect that I need to consider are influential outliers. There are a few country-year observations with extremely high or low growth rates. Since outliers may influence the estimation I exclude country-year observations where growth was greater than 20 percent or less than -20 percent. This cut-off may appear arbitrary, but a closer examination of the outliers shows that there is a substantial gap between these cut-offs and the next observations. These are thus 'special' cases and as this paper aims at making claims for 'normal' cases it is reasonable to exclude these observations.[7]

Another concern is whether the right-hand side variables are endogenous.[8] In order to get reliable results one must assume that democracy is not driven by economic growth, nor that the

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[7] Results are robust to including these outliers. Regression output is available on demand from the author.

[8] Besides the question whether institutions cause growth there is a debate whether the level of economic development fosters democracy (modernization hypothesis). Lipset (1959) was among the first to establish the link between per capita income and democracy. He hypothesized that as a society develops economically, the rise in per capita income triggers a transition to democracy. Other scholars such as Dahl (1971), Burkhart and Lewis-Beck (1994), and Londregan and Poole (1996), Przeworski et

two stem from another common factor. The exogeneity of democracy as a predictor for economic growth has been discussed by several scholars such as Rodrik and Wacziarg (2005), Acemoglu et al. (2008), Papaioannou and Siourounis (2008), and Assiotis and Sylwester (2010). These scholars make the assumption that democracy is exogenous, especially since the correlation between democracy and income disappears once one controls for long-run historical factors (Acemoglu et al., 2008). As country fixed effects are included in my model, long-run factors are implicitly controlled for. Furthermore, since my dependent variable measures GDP per capita growth and not the income level of a country exogeneity is a plausible assumption, as the modernization theory (Lipset, 1959) does not claim that an increase in economic growth leads to democracy but a higher income level. For all regressions I use lagged values of the right-hand side variables since I assume that they do not have an immediate effect but one that appears after a delay.

The other concern is whether democracy systematically influences the level of military political power. Table A1 reported in the appendix shows what happened to the average value of the military political power variable before and after democratization occurred.[9] Among the 41 countries for which pre- and post-transition values were available 11 experienced an increase, two no change, and 28 a reduction in military political power. While there is a tendency that military political power decreases after a transition, this relationship seems far from unambiguous.

6 Results

6.1 Main findings

Table 1 shows how country-year observations fall into different Polity and "Military in Politics" categories. We would expect that most democratic countries ('Polity Category' =3) do not have high values on the "Military in Politics" variable. As shown in the table, there are about 446 country-year observations where a country was classified as consolidated democracy (category 3) and nonetheless has a military that strongly participates in politics (3 or higher). This is approximately 15% of all cases and 27% of the cases where a country has been classified as fully democratic. Furthermore, there are 54 country-year observations where political power was at the maximum level, the same number as in fully autocratic regimes. This shows that there were

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al. (2000), Epstein et al. (2006), Giavazzi and Tabellini (2005) studying the interaction of economic and political liberalizations come to inconclusive results. Overall, there seems to be no consensus in the literature on the actual direction of the causality.

[9] To determine a democratic transition I use the Cheibub, Gandhi and Vreeland (2010) democracy dummy.

actually cases where the military was politically very influential even though a country has been classified as democratic.

Table 1: Distribution of Country-Year Observation

Polity Category	Military Participation in Politics (1 = low, 6 = high)							
	0	1	2	3	4	5	6	Total
1	35	169	114	114	185	125	54	796
	1.22%	5.91%	3.98%	3.98%	6.47%	4.37%	1.89%	27.82%
2	31	81	84	68	84	66	27	441
	1.08%	2.83%	2.94%	2.38%	2.94%	2.31%	0.94%	15.41%
3	639	335	204	203	116	73	54	1,624
	22.33%	11.71%	7.13%	7.12%	4.05%	2.55%	1.89%	56.76%
Total	705	585	402	385	385	264	135	2,861
	24.64%	20.45%	14.05%	13.46%	13.46%	9.23%	4.72%	100%

[a] Polity Categories: 1 = -10 to -6, 2 = -5 to 5, 3 = 6 to 10

This may lead us to question the Polity index as a measure of democracy but there seem to be divided opinions on the question whether this aspect should be covered. Alvarez et al. (1996) argue that social science should not make judgments about who is actually exercising power. They further claim that even though in countries like Thailand civilian rule is primarily exercised by the military and defrocked generals, this does not pose a problem to democratic governing as long as office holders are appointed through elections where competition was ensured. Mainwaring et al. (2001, p. 8), however, are more skeptical about this argument. They state that "if the government elected by the people does not actually govern, it is not democratic". In a country where the military has substantial political power, decision-making in a number of areas is constrained, no matter the result of free elections. Since the fundamental idea of democracy is to give the *demos* the ultimate decision-making power, every actor who subverts the will of the population will hurt democracy. I conclude that whether the concept should or should not include military political power is unclear, but in any case, the existing measures do not capture this aspect and thus we may want to see how this factor influences the effect of democracy on growth.

Table 2 provides the estimation results for regressions 1 to 4, where the first two regressions use the continuous Polity measure and regressions 3 to 4 the Polity Dummy. While regressions 1 and 3 include the number of armed forces to account for military force, regression 2 and 4 estimate the effect of military expenditures. As shown in Table 2, not all of the standard variables used in growth regressions are significant. While this may indicate a flaw of the respective measure, I argue that, though lagging the regressors is a standard procedure, the non-significance is because the lag may not be appropriate for all variables. Table A5 reported in the appendix

shows that if current, and not lagged, values are used, all of the standard variables are significant and coefficients are as expected. Further work therefore should examine which variables ideally require a lagged value but this would go beyond the scope of this paper.

Table 2: Fixed-Effects Panel Regression (1 – 4)

VARIABLES	(1)	(2)	(3)	(4)
Polity IV	**0.240***	**0.251***		
	(-0.068)	(-0.085)		
Interaction (Polity*Military Power)	**-0.048***	**-0.047**		
	(-0.016)	(-0.021)		
Polity IV Dummy			**2.507***	**2.341***
			(-0.943)	(-1.186)
Interaction (Polity Dummy*Military Power)			**-0.740***	**-0.659**
			(-0.246)	(-0.332)
Military Power	**0.314**	**0.394**	**0.610***	**0.685**
	(-0.144)	(-0.184)	(-0.194)	(-0.271)
Investment	**-0.072**	**-0.064**	-0.043	-0.050
	(-0.032)	(-0.032)	(-0.028)	(-0.031)
Secondary School Enrollment	-0.037	-0.036	**-0.039***	-0.038
	(-0.023)	(-0.024)	(-0.022)	(-0.023)
Population Growth	**-0.480***	-0.392	**-0.467***	-0.409
	(-0.249)	(-0.266)	(-0.24)	(-0.263)
Government Consumption	-0.086	-0.016	**-0.134***	-0.013
	(-0.072)	(-0.095)	(-0.070)	(-0.104)
Trade	**0.036***	0.025	**0.038***	**0.031**
	(-0.012)	(-0.016)	(-0.011)	(-0.014)
Inflation	-0.257	**-0.440**	-0.181	**-0.307***
	(-0.174)	(-0.173)	(-0.168)	(-0.174)
Armed Forces	-0.164		-0.028	
	(-0.314)		(-0.341)	
Military Expenditures		0.296		0.176
		(-0.493)		(-0.496)
Constant	7.452*	5.757**	4.886	4.477*
	(-4.273)	(-2.749)	(-4.307)	(-2.672)
Observations	1,449	1,368	1,555	1,438
R-squared	0.124	0.116	0.122	0.113
Number of countries	122	115	130	120

[a] Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

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While significance of the other variables vary with the model specification, the variables of interest, Polity, the Polity Dummy, and the interaction term are significant in all specifications. Polity has a positive and on the 1%-level significant effect on GDP growth if the military does not participate in politics.[10] Figure 1 (regression 1) and Figure 2 (regression 2) illustrate how this effect changes with increasing military political participation. As indicated by the negative and significant coefficient of the interaction term, the positive effect of Polity decreases with higher military political power in politics. Figures 1 and 2 show that at high levels of military political power an increase on the Polity scale by one unit has even a negative, while not significant, effect on GDP growth. To illustrate the differences in the effect of Polity given a specific value of military political power in politics one can look at a hypothetical example. Imagine a country where the military is completely absent from politics and that experiences an increase on the Polity scale from 0 to 7.3 (one standard deviation). This equals a transition from an 'anocracy'[11] to a fully democratized country. This country would, using the estimates results of (1)[12], on average experience an increase in GDP growth by 1.75 percentage points, all else held constant. If the military participates at an intermediate-level, say 3.5, the country would only experience an increase in the growth rate of 0.535 percentage points. This is less than one third of the case with no military political power. At any value of military political power in politics higher than 3.5 an increase on the Polity does not result in a significant, on the 5%-level, increase of GDP growth any more. This clearly supports the hypothesis that military political power undermines the positive effect of democratic institutions.

The dummy version of the Polity scale can be interpreted in a similar way. Using the estimation results of (3)[13], one can see that turning into a full democracy increases GDP growth by 2.5 percentage points (note that the mean GDP growth rate is 1.9 percentage) if the military does not participate in politics. If military political power is at level 2, GDP growth would increase by approximately 1 percentage point. At any level of military political power is higher than 2, a transition of a country into a full democracy would not yield significantly higher growth rates.

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[10] Interpretation of coefficients always refers to the on average change if all else is held constant.

[11] This terminology is used by Marshall et al. (2011) and indicates a semi-democracy.

[12] The coefficients of (2) are similar.
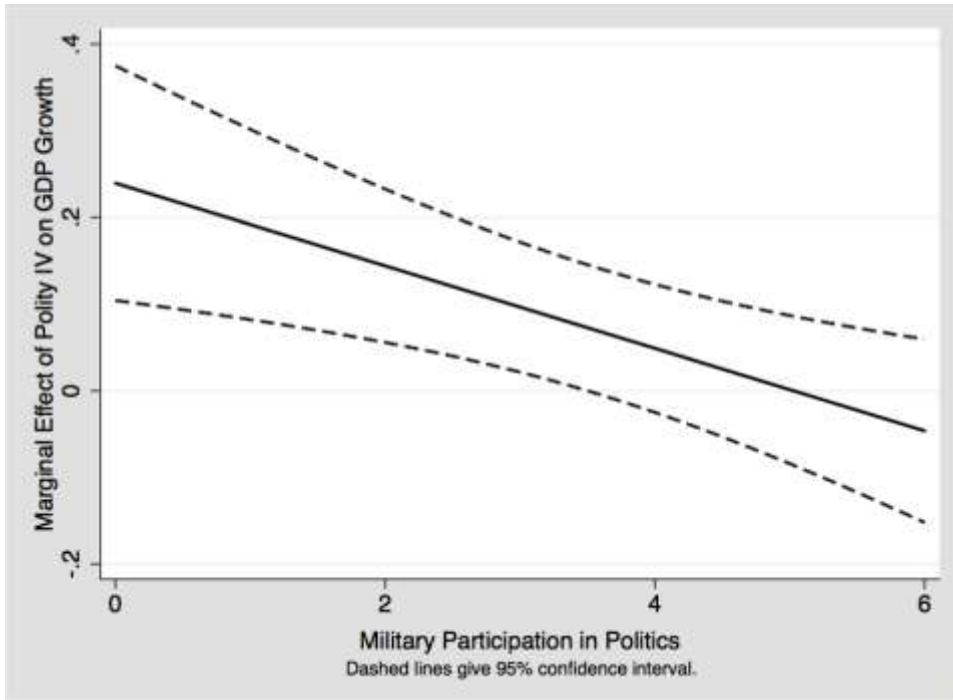
[13] The coefficients of (4) are similar.

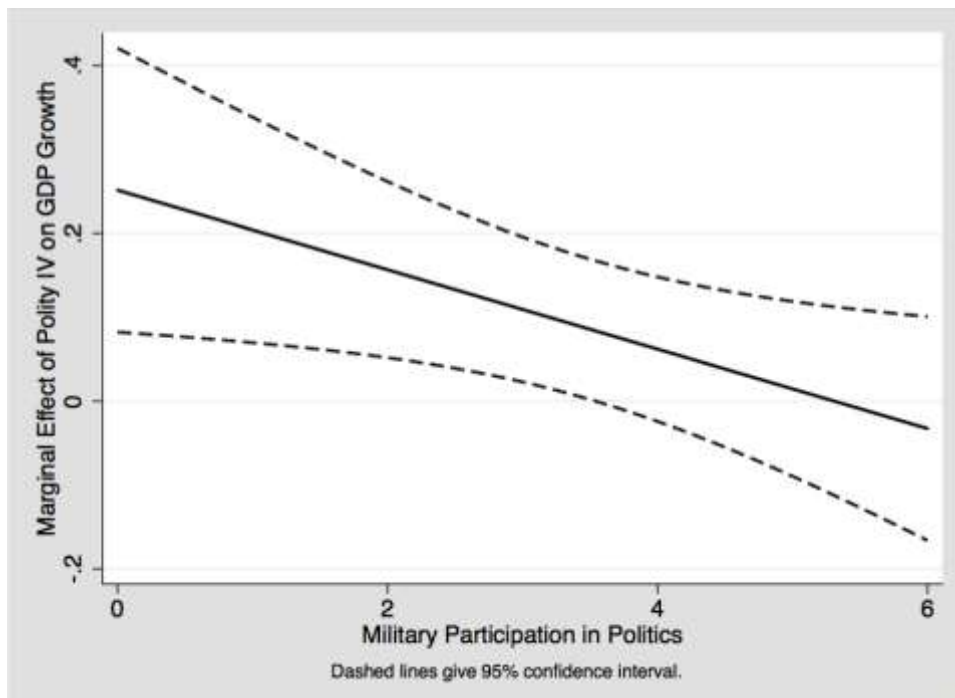**Figure 1: Marginal Effect of Polity on GDP Growth (Regression 1)**

Figure 2: Marginal Effect of Polity on GDP Growth (Regression 2)

6.2 Robustness checks

Since endogeneity concerns may not have been ruled out by simply relying on country fixed-effects, I also estimate the models using the Arellano-Bond GMM (Generalized Method of Moments) estimator (Arellano & Bond, 1991).[14] Because the lagged levels of the regressors are poor instruments for the first-differenced regressors I prefer 'system GMM' instead of 'difference GMM'. "The system GMM estimator uses the levels equation […] to obtain a system of two equations: one differenced and one in levels. By adding the second equation additional instruments can be obtained. Thus the variables in levels in the second equation are instrumented with their own first differences" (Mileva, 2007, p. 7). When estimating panels with GMM the number of instruments is a critical issue. Additionally, the Hansen *J*-tests used for testing the specification and more specifically the validity of instruments becomes weak with too many instruments (Kretschmer et al. 2011). In order to reduce the instrument count, I thus collapse the instrument matrix as proposed by Roodman (2006). Table 3 shows the estimation results. As can be seen from the table, almost all variables are significant and the direction of the coefficients is as expected. Furthermore, the reported *p* value associated with the Difference-in-Hansen statistics shows that the assumption that regressors are exogenous is valid. Using GMM leads to two noticeable changes: First, the magnitude of the coefficients of the variables of interest increase substantially compared to the fixed-effects model. This indicates that the positive impact of an increase in the level of democracy and the negative effect of higher military political power might have been understated before. Second, while coefficients are higher, the significances of the variables of interest are reduced. This may indicate that the results are not as robust as previously assumed.

To further test the robustness of the results I estimate the fixed-effects regressions including additional, potentially influential, variables. Table 4 shows the estimation results. I include the one-year-lagged value of GDP growth as a right-hand side variable in (9). As expected, the lag of the dependent variable is strongly correlated with the current values. An increase of GDP growth in the previous year is associated with an increase of 0.22 percentage points in the following years. Even if one includes this variable in the regression, the coefficients of the variables of interest, Polity and the interaction term, remain significant on the 1%-level and 5%-level respectively, although the magnitude is slightly reduced. Regressions (10) and (11) include the lags of Transition to Democracy (a dummy scoring 1 for the year where the transition took place) and Durability of the Regime (measured in years) as additional control variables. One may expect that the effect of Polity is driven by either of these variables. Estimation results, however, show that

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[14] I use the STATA device *xtabond2* introduced by Roodman (2006).

the coefficients of the variables of interest remain significant. While Transition to Democracy does not significantly influence GDP growth, Durability of the Regime does. Moreover, if one controls for the durability of the regime, the magnitude of the Polity coefficient is noticeably reduced, thus the effect of Polity is partly driven by durability of the regime.

Table 3: GMM Panel Regression (5 – 8)

VARIABLES	(5)	(6)	(7)	(8)
Polity IV	**0.870****		**0.989***	
	(0.401)		(0.507)	
Interaction (Polity*Military Power)	**-0.155***		**-0.165***	
	(0.077)		(0.098)	
Polity IV Dummy		**6.599***		**5.436***
		(3.653)		(3.085)
Interaction (Polity Dummy*Military Power)		**-2.147****		**-1.625****
		(0.892)		(0.681)
Military Power	**1.032****	**1.388****	**1.186****	**1.189*****
	(0.480)	(0.557)	(0.577)	(0.445)
Investment	**0.150*****	**0.104*****	**0.149*****	**0.104*****
	(0.045)	(0.023)	(0.054)	(0.027)
Secondary School Enrollment	**-0.062****	**-0.036****	**-0.069****	**-0.031****
	(0.024)	(0.015)	(0.030)	(0.014)
Population Growth	-0.181	**-0.596****	-0.384	**-0.775*****
	(0.398)	(0.248)	(0.405)	(0.211)
Government Consumption	**-0.184****	**-0.119***	**-0.226****	**-0.144****
	(0.078)	(0.061)	(0.112)	(0.059)
Trade	**0.030****	**0.015****	**0.023***	**0.011****
	(0.013)	(0.007)	(0.012)	(0.005)
Inflation	**-0.470****	**-0.430*****	-0.295	**-0.298***
	(0.195)	(0.154)	(0.202)	(0.153)
Armed Forces	**0.602****	**0.404****		
	(0.273)	(0.183)		
Military Expenditures			**1.650***	0.460
			(0.902)	(0.418)
Constant	-6.851	-3.644	-0.251	1.785
	(5.145)	(4.256)	(3.104)	(2.164)
Observations	1,436	1,535	1,356	1,428
Number of countries	123	129	115	119
Number of instruments	71	71	71	71
Hansen test (prob<chi2) - GMM	0.343	0.382	0.199	0.177
Difference-in-Hansen - GMM	0.930	0.527	0.354	0.292
Hansen test (prob<chi2) - IV	0.344	0.857	0.446	0.523
Difference-in-Hansen - IV	0.490	0.157	0.154	0.100

[a] Robust standard errors in parentheses
*** $p<0.01$, ** $p<0.05$, * $p<0.1$

Table 4: Fixed-Effects Panel Regression (9 - 11)

VARIABLES	(9)	(10)	(11)
Lagged GDP Growth	0.219***		
	(-0.061)		
Polity	0.179***	0.229***	0.161**
	(-0.059)	(-0.069)	(-0.070)
Interaction (Polity*Military Power)	-0.036**	-0.045***	-0.041**
	(-0.014)	(-0.016)	(-0.016)
Military Power	0.251*	0.298**	0.256*
	(-0.129)	(-0.147)	(-0.146)
Investment	-0.103***	-0.076**	-0.069**
	(-0.029)	(-0.032)	(-0.032)
Secondary School Enrollment	-0.026	-0.036	-0.035
	(-0.018)	(-0.023)	(-0.023)
Population Growth	-0.344	-0.408*	-0.440*
	(-0.233)	(-0.241)	(-0.241)
Government Consumption	-0.041	-0.097	-0.088
	(-0.070)	(-0.071)	(-0.073)
Trade	0.029**	0.038***	0.037***
	(-0.012)	(-0.013)	(-0.012)
Inflation	-0.045	-0.266	-0.278
	(-0.169)	(-0.175)	(-0.171)
Armed Forces	-0.196	-0.089	-0.162
	(-0.285)	(-0.317)	(-0.314)
Transition to Democracy		0.074	
		(-1.481)	
Durability			-0.044***
			(-0.016)
Constant	6.835*	6.579	9.151**
	-3.761	-4.324	-4.364
Observations	1,446	1,433	1,449
R-squared	0.164	0.124	0.128
Number of countries	122	121	122

[a] Robust standard errors in parentheses
*** $p<0.01$, ** $p<0.05$, * $p<0.1$

Since it is debated what constitutes democracy, I also check whether other democracy measures yield similar findings. Therefore, regressions (12) – (14) include the Freedom House *CL* and *RP* measures as well as the Cheibub et al. (2010) Democracy dummy. As shown in Table 5,

Table 5: Fixed-Effects Panel Regression (12 - 14)

VARIABLES	(12)	(13)	(14)
Freedom House - CL	**0.486***		
	(-0.280)		
Interaction (CL*Military Power)	-0.117		
	(-0.071)		
Freedom House - RP		**0.572***	
		(-0.275)	
Interaction (PR*Military Power)		**-0.112***	
		(-0.060)	
Cheibub et al. Democracy			**1.618***
			(-0.809)
Interaction (Democracy*Military Power)			**-0.451***
			(-0.201)
Military Power	**0.728***	**0.758***	**0.413***
	(-0.298)	(-0.278)	(-0.154)
Investment	-0.043	-0.042	-0.047
	(-0.029)	(-0.029)	(-0.029)
Secondary School Enrollment	**-0.039***	**-0.037***	**-0.039***
	(-0.022)	(-0.022)	(-0.022)
Population Growth	**-0.453***	**-0.462***	-0.370
	(-0.236)	(-0.239)	(-0.229)
Government Consumption	**-0.150***	**-0.150***	**-0.139***
	(-0.071)	(-0.069)	(-0.072)
Trade	**0.039***	**0.038***	**0.039***
	(-0.011)	(-0.010)	(-0.011)
Inflation	-0.201	-0.206	-0.203
	(-0.174)	(-0.173)	(-0.175)
Armed Forces	0.018	0.035	0.064
	(-0.328)	(-0.324)	(-0.332)
Constant	3.741	2.890	4.560
	(-4.506)	(-4.807)	(-4.455)
Observations	1,544	1,544	1,538
R-squared	0.117	0.12	0.117
Number of countries	129	129	128

[a] Robust standard errors in parentheses
*** $p<0.01$, ** $p<0.05$, * $p<0.1$

all democracy measures have a positive and significant coefficient. While the coefficients for the interaction terms for (13), PR, and (14), Democracy, are significant as well, the coefficient of the *CL* interaction term is not. However, given that the *p*-value is 0.101 the coefficient could almost be classified as significant. Because of space limitations I will not discuss the magnitudes of the coefficients given different levels of military political power. However, the finding that all democracy measures yield similar results further supports my hypothesis.

Table 6: Fixed-Effects Panel Regression (15)

VARIABLES	(15)
Polity IV	**0.232*****
	(-0.066)
Polity Squared	-0.002
	(-0.008)
Military Power	**-0.928****
	(-0.450)
Military Power Squared	**0.215*****
	(-0.074)
Interaction (Polity*Military Power)	**-0.033****
	(-0.016)
Investment	**-0.076****
	(-0.032)
Secondary School Enrollment	**-0.038***
	(-0.022)
Population Growth	**-0.458***
	(-0.251)
Government Consumption	-0.096
	(-0.070)
Trade	**0.037*****
	(-0.012)
Inflation	-0.265
	(-0.173)
Armed Forces	-0.124
	(-0.300)
Constant	8.243**
	(-4.116)
Observations	1,449
Number of countries	122
R-squared	0.132

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

As a final robustness check, I also include the squared values of the Polity and Military in Politics variables in the regression to verify that the interaction term is not spuriously capturing left-out squared terms (Table 6). "When there is multicollinearity between the independent variables, the observed interaction may be spurious; that is, the coefficient of the product term in the regression may be significant even when there is no true interaction" (Ganzach, 1997, p. 236). The regression output (15) shows that even if the squared terms are included the coefficients of the variables of interest remain significant. This further supports the robustness of the findings.

It is worth noting that in all regressions the coefficient of Military in Politics measure is positive and significant.[15] This means that when the Polity value is zero, military political power will actually enhance growth. This finding indicates that a strong military may be beneficial for economic development in a non-democratic regime. At any higher level of Polity military political power does not have a significant effect any more.[16] As the effect of military political power on economic development in *non-democratic* regimes is not the main topic of this paper, I refrain from speculating about this finding. Further research, however, may want to address this issue and examine why higher military political power is beneficial for economic development in non-democratic regimes

7 Conclusion

In this paper I examine the effect of democracy on economic development at different levels of military political power. The military has an incentive to intervene in politics in a democracy, as a democratic regime cannot commit itself credibly to providing the military with economic resources and political power, which would run against the preferences of the general population. At the same time, launching a coup against the democratic regime may not be desirable as this often comes at a substantial cost that may not compensate the gains of a revolt. Thus, the military faces high incentives to intervene more subtly in the policy-making process as a means of maintaining its political power and resources. By intervening in the policy-making process it will impede the institutional channels, or policies, that would promote economic development. Therefore we can assume that the military will likely hurt economic growth by its rent-seeking behavior. Consequently, in this paper I hypothesize that democracy has a positive impact on GDP growth but the effect decreases with higher military political power. Using a sample of more than one hundred countries over twenty-five years I find supportive evidence for this claim.

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[15] Regression (11) not considered due to the significant squared term.

[16] Figures are not reported here.

Becoming more democratic does substantially increase economic growth but only if military political power is at a low or intermediate level. If military political power is high, I do not find a significant positive effect of becoming more democratic any more. For example, if a country in which the military has no political power experiences a shift in the level of democracy of 7.3 on the Polity scale (one standard deviation) it will on average experience an increase in GDP growth that is three times higher than in a country where the military has an intermediate level of political power.

This finding is politically extremely relevant beyond its academic importance. To illustrate this point consider the current transition in Egypt and Tunisia. Given the different role of the military in Tunisia and Egypt, I argue that while both countries face major challenges such as high levels of unemployment and a division of the society, the prospects for Tunisia with regard to economic development are much better than those for Egypt. As outlined above, the military in Egypt will most likely remain influential with regard to the policy-making process. Since medium-to-high levels of military political power are sufficient to block the positive effect of democracy on growth, I expect that Egypt will not benefit economically as much as Tunisia from the democratic transition.

While this paper offers evidence that military political power is detrimental for the positive effect of democracy, further research should direct attention toward a more detailed examination of the causal mechanisms and indirect ways through which military political power undermines the growth-enhancing effects of democracy. More precisely, it should elaborate through which channels the military impacts political decision-making and how it shapes democratic institutions so that they better reflect their interests. Further research should also address why military political power negatively affects the positive effect of democracy on growth while at the same time military political power *increases* GDP growth in non-democratic countries.

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Appendix

Table A1: Military Political Participation Before and After Democratic Transition

Country	Mean military participation in politics - before	Mean military participation in politics - after	Change
Albania	1.04762	1.8287	0.781085
Bangladesh	4.90625	3.8254	-1.080853
Brazil	3.91667	1.8125	-2.104167
Bulgaria	1	1.01316	0.013158
Chile	5.52778	2.29605	-3.231725
Congo	5.25439	5.33333	0.0789471
Czechoslovakia	2	1.3125	-0.6875
Ecuador	3.95833	3.18659	-0.771739
Ghana	4.94445	3.11719	-1.827257
Guatemala	5.20833	3.17029	-2.038043
Guinea-Bissau	4.14444	4.56771	0.423264
Hungary	1	0.192982	-0.8070175
Indonesia	4.7	3.75417	-0.9458327
Kenya	2.17857	2.47727	0.298702
Liberia	5.27652	3	-2.276515
Madagascar	3.125	3.875	0.75
Malawi	0.783333	2	1.216667
Mali	5	2.37255	-2.627451
Mexico	0.473958	2.30556	1.831598
Mongolia	1	1	0
Niger	3.66667	3.03472	-0.6319449
Nigeria	5.35	3.95833	-1.391667
Pakistan	5.4391	5.3125	-0.1266031
Panama	4.85	1.94167	-2.908333
Paraguay	5	3.69792	-1.302083
Peru	4.61364	2.34524	-2.268398
Philippines	4.16667	3.2029	-0.963768
Poland	4.8	0.241667	-4.558333
Romania	2	1.12281	-0.877193
Senegal	3.09896	4	0.901042
Serbia & Montenegro	4.91667	2.70833	-2.208334
Sierra Leone	4.60417	4.50347	-0.1006951
South Korea	4	1.4881	-2.511905
Sri Lanka	0.85	2.95833	2.108333
Sudan	5.70455	4.13889	-1.565656
Suriname	6	3.575	-2.425
Taiwan	2	2	0
Thailand	3.20833	3.32008	0.111743
Uganda	4.32639	4	-0.3263888

Table A2: Countries in Sample

Albania	Egypt	Liberia	Senegal
Algeria	El Salvador	Libya	Serbia
Angola	Estonia	Lithuania	Serbia & Montenegro
Argentina	Ethiopia	Luxembourg	Sierra Leone
Armenia	Finland	Madagascar	Singapore
Australia	France	Malawi	Slovakia
Austria	Gabon	Malaysia	Slovenia
Azerbaijan	Gambia	Mali	Somalia
Bahamas	Germany	Malta	South Africa
Bahrain	Ghana	Mexico	South Korea
Bangladesh	Greece	Moldova	Spain
Belarus	Guatemala	Mongolia	Sri Lanka
Belgium	Guinea	Morocco	Sudan
Bolivia	Guinea-Bissau	Mozambique	Suriname
Botswana	Guyana	Myanmar	Sweden
Brazil	Haiti	Namibia	Switzerland
Brunei	Honduras	Netherlands	Syria
Bulgaria	Hong Kong	New Caledonia	Taiwan
Burkina Faso	Hungary	New Zealand	Tanzania
Cameroon	Iceland	Nicaragua	Thailand
Canada	India	Niger	Togo
Chile	Indonesia	Nigeria	Trinidad & Tobago
China	Iran	Norway	Tunisia
Colombia	Iraq	Oman	Turkey
Congo	Ireland	Pakistan	UAE
Congo DR	Israel	Panama	Uganda
Costa Rica	Italy	Papua New Guinea	Ukraine
Cote d'Ivoire	Jamaica	Paraguay	United Kingdom
Croatia	Japan	Peru	United States
Cuba	Jordan	Philippines	Uruguay
Cyprus	Kazakhstan	Poland	Venezuela
Czech Republic	Kenya	Portugal	Vietnam
Czechoslovakia	Korea, DPR	Qatar	Yemen
Denmark	Kuwait	Romania	Zambia
Dominican Republic	Latvia	Russia	Zimbabwe
Ecuador	Lebanon	Saudi Arabia	

Table A3: Descriptive Statistics

Variable	Observations	Mean	Std. Dev.	Min	Max
GDP Growth	3085	1.906	4.484	-19.729	19.682
Investment	3328	22.124	9.568	-33.141	86.344
Secondary School Enrollment	2566	70.694	32.134	3.0573	161.781
Population Growth	3490	1.604	1.514	-5.814	18.588
Government Consumption	3328	10.278	5.288	0.896	46.724
Trade	3188	79.092	51.029	0.309	445.911
Inflation	2738	2.045	1.537	-2.303	10.076
Armed Forces	2754	10.824	1.732	4.605	15.235
Military Expenditures	2416	0.690	0.747	3.071	4.765
Military Participation in Politics	3308	2.291	1.827	0	6
Polity IV	2783	2.518	7.296	-10	10
Interaction (Polity*Military Power)	2675	-0.565	19.447	-54	48
Polity Dummy	3650	0.645	0.479	0	1
Interaction (Polity Dummy*Military Power)	3308	1.113	1.617	0	6

Table A4: Vector Inflation Factors

VARIABLE	VIF	1/VIF
Armed Forces	40.2	0.024878
Secondary School Enrollment	15.75	0.063493
Investment	10.36	0.096563
Polity IV	7.47	0.133854
Government Consumption	6.86	0.145749
Trade	6.26	0.159721
Military Power	5.33	0.187496
Inflation	3.55	0.281525
Interaction Term	3.2	0.312212
Population Growth	2.93	0.341481

Table A5: Fixed-Effects Panel Regression without Lags

VARIABLES	(16)
Polity IV	**0.231***
	(-0.060)
Interaction (Polity*Military Power)	**-0.046***
	(-0.016)
Military Power	**0.294***
	(-0.169)
Investment	**0.136***
	(-0.033)
Secondary School Enrollment	**-0.049****
	(-0.026)
Population Growth	**-0.701***
	(-0.193)
Government Consumption	**-0.226***
	(-0.084)
Trade	**0.029***
	(-0.010)
Inflation	**-0.813***
	(-0.161)
Armed Forces	0.253
	(-0.353)
Constant	2.123
	(-4.953)
Observations	1,447
Number of countries	122
R-squared	0.177

[a] Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1