DEMOCRACY, DEMOCRATIC CONSOLIDATION AND MILITARY SPENDING

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Abstract

We introduce two considerations into the debate about democracy and military spending. First, greater government accountability to citizens should have mixed effects on spending: reducing the component related to rent-seeking and inefficiency, but increasing the component that actually purchases the public good of national security. Second, the relationship between government accountability and spending should be contingent. In particular, we predict that higher national security risks and higher lagged military spending should raise current military spending by less when citizens can hold governments accountable. We test for these predictions in an encompassing model of military spending using global data covering more than 140 countries, and using several subjective and objective measures of accountability. Our results suggest that recent shifts towards democracy in the Arab world should not lead to a quick decline in military spending because only deeper forms of democracy seem to have an effect, particularly in view of the high external risks confronting countries in the region.

ملخص

تقدم هذه الورقة رأيان هامان بخصوص النقاش الدائر حول العلاقة بين الديمقراطية والإنفاق العسكري. أولا، هناك تأثيرات متباينة على الإنفاق بزيادة معدل مساءلة المواطنين للحكومات: وهذه التأثيرات تتمثل فى خفض المكون الريعي وعدم الكفاءة، مع زيادة المكون الذي يشتري فعلا الصالح العام المتمثل فى هذه الحالة بلأمن القومى. ثانيا، ينبغي أن تكون هناك علاقة مشروطة بين مساءلة المواطنين للحكومات والإنفاق. وعلى وجه الخصوص، نتوقع فى هذه الورقة أن المخاطر التى تتحيط بالأمن القومى وزيادة الإنفاق العسكري الحالى قد تقل اذا ما زادت ثقة المواطنين فى الحكومات. نقوم باختبار هذه التنبؤات في نموذج شامل عن الإنفاق العسكري باستخدام بيانات عالمية تغطي أكثر من 140 دولة، وذلك باستخدام عدة تدابير ذاتية وموضوعية للمساءلة. وتشير نتائجنا أن التحولات الأخيرة نحو الديمقراطية في العالم العربي لن تؤدي بالضرورة إلى انخفاض سريع في الإنفاق العسكري. فالأشكال الأعمق للديمقراطية هى التى يبدو أن يكون لها تأثير، وخاصة في ضوء ارتفاع المخاطر الخارجية التي تواجه بلدان المنطقة.

1. Introduction

National defense is typically taken as a classic illustration of a public good. A standard application of public economics and political economy would therefore suggest that politicians with stronger incentives to support public good provision should also devote more resources to national defense. Democratically-elected politicians are often regarded as having such incentives. Past research, though, has regularly found that democracies dedicate a *smaller* fraction of GDP to military spending than non-democracies (Kimenyi and Mbaku 1995, Dunne and Perlo-Freeman 2003, Fordham and Walker 2005). We investigate this apparent paradox and its implications for democratization.

Adherents of Immanuel Kant (1724-1804) or Thomas Paine (1737-1809) might argue that there is no paradox. The former argues that the military is a threat to political rights, leading to its circumscription in democracies; the latter that elites cannot easily use military spending as a vehicle for wealth aggrandizement in democracies. The analysis below addresses some difficulties with these arguments and outlines a broader framework to consider the political determinants of military spending.

The framework takes into account the unique qualities of national security relative to other public goods – in particular, the high demand that leaders might have for national security, independent of the benefits that it offers to citizens. Military spending should also be responsive to the efficiency of military organization. However, when more efficiently-organized militaries constitute a greater threat to some regime types than others, governments may use higher levels of spending (more soldiers and tanks) and less efficient military organization (less communication between units and less delegation to lower-ranking officers) to achieve a level of national security that other governments can achieve with lower levels of spending and more efficient organization. Finally, the framework focuses more explicitly on citizen organization. In the presence of more organized citizens, governments have stronger incentives to pursue policies that benefit the collective interests of citizens. At the same time, military leaders confront higher costs when they overthrow civilian governments when citizens are better-organized and those governments are more responsive to citizens. Better-organized citizens can resist military incursions more effectively.

In addressing the above questions, this paper makes an important; indeed, a novel contribution to the literature by showing that both theoretically and empirically transitions to democracy tend to have little effect on military spending. Only deeper forms of democracy seem to have an effect. Therefore, conditional on the prevailing security threats, in regions that have only recently started to experience such transitions, most notably the Arab world, citizens are unlikely to benefit soon from reduced military spending.

Section 2 undertakes a review of the literature and motivates the theoretical framework that will be used to guide the empirical framework. In section 3 we briefly outline our data and empirical strategy. Section 4 discusses the estimation results of four models of military expenditure, each examining a different measure of government accountability to collective citizen interests: a subjective and broad measure of democratization that is the foundation of empirical research in this area, and three objective measures of competitive elections; of the length of time countries have been governed by competitively-elected politicians; and of the degree to which members of the largest government party are able to act independently of the party leader. Section 5 focuses on recent trends in the Middle East – the Arab Spring and its aftermath – drawing implications from the analysis for trends in democracy and military spending in the region. Section 6 concludes.

2. Literature Review and Theory

The literature on the determinants of military expenditure is vast, but has been mostly associated with the arms race between NATO and the Warsaw Pact during the Cold War.[1] A much smaller literature examines military spending across a broader group of countries, including developing countries. However, it generally refrains from discussing or directly estimating regime effects on military spending, focusing instead on internal and external threats (inter-state and home wars), the power of the military in non-democratic countries and the financial resources available to countries.[2]

Fordham and Walker (2005), however, analyze the predictions about the role of the military in democracies made by Kant and Paine. Kant argues that democratic states are bound to devote less to their militaries than do autocracies because 'demilitarization' would allow them to better safeguard political rights, avoid conflict spirals and devote more resources to education and other social goods (Kant: 1784, 1786, 1795). Kant's argument is, therefore, two-fold. First, larger militaries pose a threat to political rights so, in places where those rights are enshrined, military spending must be lower. We argue that the safeguard of political rights is not so much the size of the military as the organization of citizens and the depth of citizen commitment to civilian government. Second, Kant argues that where citizens are better able to demand social goods, they are likely to prefer less national defense (smaller militaries) in order to finance them. However, while plausible, this substitution is not inevitable. In the transition from an autocratic government that places a low value on social goods, to a democratic government, that places a higher value, national defense is not the only spending category that might be adjusted. Another is rent-seeking – private goods. To the extent that autocratic governments place a high value on extracting rents from citizens to finance private goods for themselves, social goods under democracy may be financed through lower rent-seeking rather than lower spending on national security.

Paine's (1787, 1791) argument focuses more explicitly on rent-seeking. A small group of unelected incumbent elites can extract rents from military spending through exclusive contracts for the provision of arms and other services, imposing the costs of the rents on the entire population. Under democratic rule, citizens can limit elite rent-seeking, allowing military spending to fall. Kimenyi and Mbaku (1995) offer a similar argument to explain their finding that military spending is lower in democracies. We predict lower rent-seeking, as well, when citizens are better organized and can more easily compel politicians to pursue their collective interests. However, we observe that this translates into lower military spending only when autocratic leaders also value national security. Since rents extracted from military spending undermine the effort to secure the nation, to achieve any particular level of national security, autocrats who value national security must offset rent-seeking by increasing total military spending. Only in this case is it unambiguously true that military spending is lower when better-organized citizens limit government rent-seeking.

Bueno de Mesquita, et al. (1999) argue that in countries where the winning coalition is larger (e.g., the majority of voters in a democracy versus Syria's Bashar Al-Assad's family), leaders are more likely to lose office if they lose the war. As a consequence, countries with larger winning coalitions can credibly commit to spend more in the event of a war since they have more at stake. They do not make predictions about overall military spending in countries with larger and smaller winning coalitions, since pre-war levels of military spending ("military balance") are exogenous in their model. Nevertheless, it is reasonable to

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[1] See, for example, Hartley and Sandler (1990) for a review of this strand of the literature.

[2] Deger and Sen (1995) provide a review of this literature. Examples of the empirical cross-sectional literature include Maizels and Nissanke (1986), Looney (1989), Gyimah-Brempong (1989), Collier and Hoeffler (2002), Dunne and Perlo-Freeman (2003), Knight et al (1996), and Yildirim and Sezgin (2005).

conjecture that in a world where all governments know that democratic governments will invest large resources in winning wars, they will be more reluctant to attack democracies. This allows democracies to spend less on national defense than non-democracies.

Their argument assumes that the winning coalition can act collectively to punish leaders who lose wars. Absent the ability to act collectively, the winning coalition cannot credibly commit to such punishment. Our argument and evidence focus more directly on collective action by citizens and shows that these are essential for lower military spending.

Several observations constitute the starting point of our analysis. All point to the ambiguities inherent in identifying political determinants of military spending. The first is that politicians may benefit disproportionately from the increased provision of national security, in contrast to other public goods, such as education or health. Should their country lose a war, politicians have a higher probability than the average citizen of losing their job (being driven from office by the victors), and of losing their lives. This risk is above and beyond the internal political costs of losing a war that are the focus of Bueno de Mesquita, et al. (1999). Therefore, while in general we expect politicians who are more accountable to the collective interests of citizens are also more likely to provide public goods, even politicians who are not accountable may purchase substantial national security. It is therefore ambiguous whether countries in which politicians are exceptionally responsive to citizen interests would exhibit less – or more – military spending than other countries.[3]

This ambiguity is not present with other public goods. For example, the benefits that politicians extract from infrastructure, education, or public health services are likely less than those that citizens themselves receive. In these cases, one can predict more confidently that in countries where politicians are more accountable to the collective interests of citizens, we should observe higher spending to provide these services.

The second observation is that military spending has two components – one that goes directly to purchase national security, but another that offers a lucrative source of rent-seeking. This is true for all government activities that are "procurement-intensive." For example, Keefer and Knack (2007) demonstrate that public investment is significantly larger in countries with weak rule of law and more corrupt, but public investment contributes less to growth in these countries and is associated with lower levels of infrastructure quantity and quality. They explain this inconsistency as the product of rent-seeking: where there are fewer limits on rent-seeking, politicians are more likely to extract rents from public investment rather than to use public investment to build public infrastructure. The same argument applies to military spending, as well-known cases of corruption in military procurement suggest. This second observation also points to ambiguity: in countries where citizens can control rent-seeking, they are also likely to be better able to press governments to provide more public goods,

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[3] Formally, this is easy to see. If N citizens, indexed by i, only consume a public good g and private good x, and government provides both subject to the resources available, T, and the prices p_g and p_x of procuring them, then social welfare is maximized in the usual way:

$$max \qquad \sum_N U_i\left(g,x_i\right)$$
$$g, x_i \quad s.t. \quad T = p_g g + p_x \sum_N x_i$$

The first order conditions yield the optimal condition for public good provision (such as national defense), $\frac{\partial U_i}{\partial x_i}/\sum_N \frac{\partial U_i}{\partial g} = \frac{p_x}{p_g}$. Label as g^* the level of defense spending that solves the citizens' problem. If citizens have no voice, and only the preferences of a separate group of M politicians j determines defense spending, then defense spending is given by g^P, which solves $\frac{\partial U_j}{\partial x_j}/\sum_M \frac{\partial U_j}{\partial g} = \frac{p_x}{p_g}$. Politicians may place a higher value on national security than citizens relative to private goods x, however. If it is high enough, and $\sum_M \frac{\partial U_j}{\partial g} > \sum_N \frac{\partial U_i}{\partial g}$ for all g, then defense spending to supply the public good of defense could be higher where citizens have no voice than when they have a voice.

including national security. Their influence pushes the two components of military spending in opposite directions, again making it ambiguous whether responsiveness to citizens increases or reduces observed military spending.

Third, politicians differ significantly in their incentives to organize security services efficiently. Keefer (2012) argues that a well-organized military is not only more capable of providing national security, it is also better able to overthrow the sitting government. Politicians who feel more exposed to a threat of coup, and who have fewer incentives to provide national security efficiently, are therefore less likely to allow a high level of military organization. Military organization relates to military spending, however, because spending offsets the effects of inefficient organization on national security, but not on coups. This observation suggests that where politicians have weaker incentives to organize the military efficiently, military spending is likely to be higher, for any given external threat. When citizens are better able to hold governments accountable, however, they are less likely to tolerate this tradeoff between efficiency and spending; spending to meet any given external threat is therefore likely to drop when government responsiveness to citizens increases.

There are two ways to see the substitution effects between spending and organization in the provision of national security. One strategy to maintain military efficacy while reducing coup threats is to allow the military to be well-organized, leave it well-funded, but to create a new military unit, the Palace Guard, composed of loyalists, relatives, co-ethnics or mercenaries. Spending on this unit increases military spending but contributes little to national security, both because the Palace Guard is insulated from and does not coordinate with the rest of the military, and because its mission is presidential, not national, security.

Another strategy to reduce coup threats is to limit communication and coordination between military units, reducing their military effectiveness, but providing those units with more and better weapons. Though unable to coordinate well with each other, these units may be as effective on the battlefield as coordinated units with fewer, worse weapons.[4] Better weapons have no corresponding effect on coup capacity, however. For a military incapable of coordinating, the main obstacle to a coup is uncertainty about whether other military units will support the coup or defend the government – this is precisely the motivation for military disorganization. The importance of this obstacle depends on the relative efficacy of military units, not on whether all military units have better or worse weapons. In any case, military units already have a significant weapons advantage over potential non-military opponents of a coup – the politicians themselves.

The fourth observation is that citizen organization has a significant effect on political incentives to engage in rent-seeking and to prevent the efficient organization of the military. Keefer and Vlaicu (2008) argue that where politicians can only make credible commitments to small groups of citizens, they rely more on clientelist transfers to mobilize electoral support – and they are able to extract higher rents. However, as Keefer (2011, 2012) argues, the ability of politicians to make credible commitments to citizens depends, in turn, on the ability of citizens to act collectively to punish politicians who renege. The most salient type of organization for this purpose is the political party: when political parties are organized to overcome collective action problems by citizens, rent-seeking by politicians is likely to be lower. Keefer (2011) finds evidence of precisely this effect.

Citizen organization also matters for coup threats. On the one hand, if governments are less responsive to unorganized citizens, citizens are more likely to be indifferent to military

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[4] Some governments are, in fact, less interested in national security than their citizens. In large countries, where conflicts rage in areas distant from the capital, one might therefore see low funding for the military, disorganization, and a well-funded presidential guard.

coups. On the other hand, military coups are more difficult when citizens are better organized.[5] Governments in societies where citizens are atomized are therefore not only more likely to engage in rent-seeking, they are less likely to allow organized militaries; both raise the amount of military spending required to achieve any particular level of national security.

The fifth, and final, observation is that citizens do not have an incentive to act collectively to influence policies that are not salient. So, for example, when external military threats are modest and military spending is low, citizens are less likely to act collectively to demand greater efficiency and lower rent-seeking in military spending. The absence of an external threat means that they enjoy the public good of national security regardless of inefficiency; the small magnitude of military spending means that even if rent-seeking is a large fraction of total spending, it is small relative to citizen income. This observation suggests that the effects on military spending of collective citizen influence over governments should only be observed when external threats and military spending are larger.

A famous case involving the Swedish arms company, Bofors, illustrates several of these observations. First, rent-seeking is associated with military spending. The company was alleged to have paid approximately ten million dollars to Indian politicians at the highest levels in order to cement a 1986 purchase by India of 410 Bofors howitzers for approximately 225 million dollars.[6] Second, when politicians value both national security and rent-seeking, they are less likely to let rent-seeking undermine national security objectives. In this case, this meant that politicians had an incentive to ensure that the army acquired the arms it needed. The howitzers were intended for the disputed Kargil area, where India and Pakistan have long been in conflict. The acquisition of the Bofors guns was believed to give India a substantial advantage.[7] Third, accountability matters for rent-seeking, especially when external threats are regarded by citizens as severe – as the Pakistan-India conflict is seen by citizens in both countries – and military spending is substantial. While the charges were first revealed in the Swedish media and not by Indian investigators, they were widely reported in the Indian media and sparked significant political turmoil; the Congress Party lost the 1989 elections.

The focus in the empirical analysis below is on tests of two predictions that emerge from these observations[8]. First, where citizens are better organized to hold governments accountable, the overall effect on military spending is ambiguous. However, the response of military spending to the external security environment is attenuated: more organized citizens can better demand that military spending increases in response to the external threat reflect lower rent-seeking and greater efficiency in military organization. We examine this

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[5] In Egypt, the overthrow of the Morsi government in June 2013 by the military triggered massive resistance by the well-organized Muslim Brotherhood, although the military's actions appeared to have enjoyed support from a large segment of the Egyptian population, including the liberal and secular elites. This contrasts sharply with the almost universal popular support of the military takeover following the January 25th popular uprising that toppled the regime of Hosni Mubarak, which lacked a similarly committed and well-organized political base.

[6] See *The Economic Times*, "Bofors Corruption Case Closed", March 5, 2011. http://articles.economictimes.indiatimes.com/2011-03-05/news/28657567_1_corruption-case-bofors-ab-delhi-court

[7] An article in Rediff News, an Indian news source, quoted a senior Indian artillery officer in Kargil, commenting on the advantages of the Bofors gun in high altitudes and in terms of shelling capacity: "The FH77 Bofors guns, he said, were better than the medium artillery guns available with the Pakistani Army." Rediff News, "Bofors gun helped India win against Pak." July 8, 2009. http://news.rediff.com/report/2009/jul/08/bofors-gun-helped-india-win-against-pak.htm

[8] Moreover, the third and fourth observations discussed above yield a prediction that has already been examined in the literature: where citizens are better organized for collective action, militaries are also more efficiently organized (Reiter and Stam, 1998); and that coups are less likely in societies where citizens are better organized (Biddle and Long, 2004).

prediction below by looking at the effects of war and neighbors' military spending, contingent on citizen organization.[9]

Second, the higher is lagged military spending, the more salient military spending is to citizens. If citizen organization affects the relationship between lagged and current military spending, such an effect will therefore only be present when lagged spending is higher. What, though, should the effect be? Conditional on spending being high, citizens are more likely to object to excessive than insufficient spending. Hence, in the presence of better organized citizens, the lower should be current spending relative to lagged spending.

The previous literature argues for unconditional effects of democracy on military spending. We make no predictions in that regard because we cannot control for all possible reasons why governments might increase spending. Governments might increase military spending to conduct wars of aggression against non-threatening neighbors or to deter neighbors who might be considering a military build-up. Neither of these is observable. While, intuitively, one might believe that these effects should be weaker when governments have stronger incentives to pursue citizens' collective interests, it is actually ambiguous. Bennet and Stam (1998) report, for example, that democracies are more likely to initiate wars against autocracies, possibly indicating larger spending by democracies even when external threats are low.

Similarly, politicians who are part of the military establishment and not accountable to citizens may maintain a large military establishment even when there is no external threat. However, politicians who are accountable, and therefore value military organization and preparedness, might approve substantial military spending even when external threats are low, in order to ensure military readiness in the event that more significant threats emerge.

3. Data and Empirical Strategy
We estimate the correlates of military spending using panel data from 1975 – 2007 (in regressions using the Database of Political Institutions (Beck et al., 2001), DPI, variables, which start in 1975) and 1960 – 2007 (in regressions using Polity variables). Following the literature, the estimates rely on ordinary least squares to estimate a pooled regression of military spending on political, threat, lagged spending and other control variables.[10] We control for time and country fixed effects.

Military spending/GDP$_{it}$ = γ + β_1(citizen collective action$_{it}$)+ β_2 (citizen collective action$_{it}$)*(threat or lagged military spending$_{it}$) + $\mathbf{X}_{it}\mathbf{B}$ + ε_i + μ_t

For military expenditures, both of own and neighboring countries, we use the figures from the National Material Capabilities database version 4.0 (Singer, Bremer, and Stuckey 1972). To measure external military threats, as in the literature, we use average military spending by contiguous countries as a fraction of their GDP and whether or not a country is at war. To identify contiguous countries, we use the direct contiguity database in Stinnet, et al. (2002). For the war dummy variable, we assign a value of one when the country is currently involved in either an inter-state war or an intrastate war (Sarkess and Wayman 2010).[11]

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[9] This prediction becomes even stronger if politician preferences for national security are higher than citizens'. Such politicians would seek to spend more in response to external threats than citizens would prefer, a tendency that better organized citizens could curb. This follows from the earlier footnote.

[10] It is well-known that this can give rise to "Nickel" bias, but that this bias is typically small. We show, in any case, that the results are robust to removing the lagged dependent variable.

[11] As a robustness check we considered various alternative specifications suggested in the literature such as the total number of militarized interstate disputes (MIDs) in the past ten years. We calculate MIDs using the MID data collection (Faten, Palmer, and Bremer 2004). Across a variety of specifications we find only concurrent involvement in a war is a robust predictor of military spending.

Both of these variables enter into the vector of control variables, **B**. They are interacted, one-by-one, with measures of citizen collective action. Aside from this paper very few have analyzed the potential influence of a regional arms race (spending by contiguous countries) on military expenditure in developing countries (e.g., Dunne and Perlo-Freeman, 2003; Collier and Hoeffler, 2002).

The vector **B** also includes a number of other variables that influence the threats confronting countries, including the average population of contiguous countries, the length of the war, and countries' own population, including the log of total population and the percent of the population that is rural and that is young or old (the dependency ratio). We also control for US arms exports to the country, income per capita, and natural resource rents as a share of GDP. All of these variables come from the *World Development Indicators*.

Finally, we rely on several measures of citizen collective action. Prior research has relied exclusively on the Polity measure of democracy, *polity2*, to examine various aspects of democracy, the organization of the military and war. Polity2 is a subjective variable meant to describe how democratically polities actually function, regardless of their specific institutional arrangements. This creates a potential difficulty in analyzing the effects of government accountability on military spending, since high levels of military spending and high levels of rent-seeking in military spending could, themselves, be taken as symptomatic of undemocratic performance. To the extent that this is true, it gives rise to an inherent endogeneity bias – the Polity measure and military spending move, by definition, with each other.

This same potential for endogeneity, which may lead to a negative bias in the unconditional relationship between the Polity measure and military spending, also may create a bias against finding any conditional effect of the measure on military spending. In the face of larger external threats, national security imperatives often lead to the suspension of democratic practices (the Patriot Act or the suspension of *habeas corpus* by Abraham Lincoln). Subjective measures of how democratically a country functions can be sensitive to these changes. If they are, an increase in external military threats might lead simultaneously to a fall in measures such as the Polity variable and an increase in military spending. This attenuates estimates of the interaction coefficient β_2.[12]

We also examine objective features of countries that might be associated with political incentives to be accountable to the collective interests of citizens. These objective features do not map neatly onto the Polity measure. For example, researchers who construct a dichotomous measure of democracy from the 21 point Polity scale (from -10 to 10) often take three as the threshold. Among those countries with scores higher than three, 19.5 percent do not exhibit competitive elections (elections where multiple parties contest and no party receives more than 75 percent of the vote). Among those countries with scores three or lower, 11 percent do exhibit competitive elections.[13]

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[12] To see this, assume that external threats drive domestic policy changes that are taken into account in Polity coding. Then we have (omitting consideration of other control variables and suppressing subscripts and the error term): $Military\ spending = \beta_1 Polity(threat) + \beta_2 Polity(threat) * threat + \beta_3 threat$. The effect of a change in the threat level on military spending is then given by $\beta_1(\partial Polity/\partial threat) + \beta_2[Polity + threat * (\partial Polity/\partial threat)] + \beta_3$. For $\partial Polity/\partial threat = 0$, this reduces to the familiar $\beta_2 Polity + \beta_3$: where citizens can hold governments more accountable, increases in military spending in reaction to a threat are lower and $\beta_2 < 0$. However, for $\partial Polity/\partial threat < 0\ and\ \beta_1 < 0$, this inverse relationship is weakened. To the extent that Polity changes with the threat environment, countries with low threats and low spending are more likely to exhibit the same Polity as countries with high threats and high spending.

[13] For many purposes, the lack of a clear match between objective and subjective features of countries is an advantage of Polity: countries with similar institutional arrangements often behave very differently, and Polity describes how democratically countries *function*, not how democratically they are organized. However, as the earlier discussion observes,

Competitive elections, though, are one key institutional feature that is traditionally considered essential for citizens to act collectively to hold government accountable. The Polity measure of democracy already suggests that elections may be neither necessary (20 percent of democratically "functioning" countries lack competitive elections) nor sufficient (10 percent of non-democratically functioning countries have them). Nevertheless, to the extent that competitive elections, in and of themselves, are sufficient to allow citizens to act collectively, military spending should be lower on average, and in the presence of competitive elections military spending should rise less when external threats are greater and be less tied to past military spending. In the estimates below, two variables from the Database of Political Institutions or DPI (Beck et al., 2001) are used to code whether countries have competitive elections. The Legislative and Executive Indices of Electoral Competitiveness are scaled from one to seven. Scores of seven mean that multiple parties can and do run and none receives more than 75 percent of the vote or takes more than 75 percent of the seats in the legislature. We use a dummy variable that equals one for country years where both indices are seven, and zero otherwise.

As Keefer (2007) argues, however, the number of years that countries have held competitive elections, rather than competitive elections, *per se*, are a better measure of whether politicians can make credible commitments to citizens. In younger democracies, political competitors are more likely to mobilize support through clientelist strategies, where politicians target narrow groups or individuals for policy promises and pre-electoral vote-buying. Politicians can rely on clientelist strategies because larger groups of voters are not able to organize for collective action. As a consequence, they cannot act collectively to punish politicians who renege on their promises (as Keefer (forthcoming) observes). Based on the variable *tensys* from the DPI, we count the number of consecutive years that countries exhibit competitively-elected governments. The count re-sets to zero when they are not competitively elected.

Elections alone are likely to be insufficient to ensure collective action, precisely because voting is an individual act that, itself, is difficult to coordinate across citizens. Parties solve the coordination problem to the extent that party leaders monitor free-riding by members (especially candidates), and members, in turn, can act collectively, inside the party, to replace party leaders who shirk on this task. Free-riding is particularly germane in this context since political incentives, in the absence of citizen collective action, favor the provision of targeted, clientelist benefits. Those benefits can be used to induce party members to shirk on their obligations to the party unless the party is organized to monitor and sanction such free-riding. Therefore, countries in which parties are organized to solve the collective action problems of members should exhibit more accountable governments and, in particular, less rent-seeking and better organization in the military.

Parties serve this role in both democracies and non-democracies. Gehlbach and Keefer (2010), for example, focusing on non-democracies, argue that the ability of the ruling party to survive leadership transitions indicates that party members can undertake collective action independent of the party leader. Members of ruling parties who can act collectively are more likely to believe leader promises – such as leader promises not to expropriate them if they invest – than in the case of ruling parties where the ruler bars collective action by party members. Consistent with this, they find that private investment is substantially higher in non-democracies with ruling parties that are older than the ruler's years in office.

In the analysis below, we use their variable, constructed from the Database of Political Institutions: *ruling party age – years in office*, set equal to zero when the leader's years in

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for purposes of estimating the determinants of government performance, a behavioral measure of democracy may create difficult endogeneity issues.

office exceed the age of the ruling party. When the ruling party is younger than the leader, it is more likely that the leader dominates the party and is unconstrained by party members; when the ruling party is older than the leader, the party has survived leadership transitions and it is more likely that party members can act independently of the leader.

4. Results

Prior research has documented that democracies spend less on the military. All of this work relies on the democracy-autocracy indicator from the Polity data. Columns one and two of Table 1 replicate the results from the literature, demonstrating that whether or not one controls for lagged military spending, countries with higher scores on the Polity democracy indicator exhibit lower military spending.

Columns three, four and five report the conditional effects of Polity on military spending. However, the interactions of Polity with each variable representing external threats –military spending by contiguous neighbors and war – are both insignificant. However, at higher values of Polity, the association between past and current military spending is significantly attenuated: the interaction term is significant and negative.

The earlier discussion suggested that governmental behavior related to the military and to national security could itself influence Polity coding decisions. To the extent that this is true, it should generate a negative bias in the linear Polity coefficient and bias towards zero in the interaction terms between Polity and the external threat variables. The patterns of results in Table 1 are consistent with this possibility.

The other results in Table 1 are intuitive. Both war and military spending in contiguous countries are associated with higher military spending, both unconditionally and conditional on *polity2*. Lagged military spending is a significant predictor of current military spending at all levels of *polity2*. The larger is the population of contiguous countries, the greater is military spending. No other control variables are significant. This is particularly interesting in the case of *polity2* scores in contiguous countries: the presence of more – or less – democratic neighbors has no effect on military spending.

The *polity2* variable reflects how democratically countries *function*, raising the question of whether competitive elections, in and of themselves, have a significant effect on military spending. Previous research suggests that they do not in a variety of other policy settings (see, e.g., Keefer 2011). Table 2 reports results that substitute the DPI measure of competitive elections for the *polity2* variable in the Table 1 specifications. It investigates whether the fact that competitive legislative and executive elections, as coded by the DPI, leads unconditionally or conditionally to lower military spending.

Results in the first two columns indicate that there is no direct effect. This is consistent both with the theoretical ambiguity surrounding the hypothesis that governments that are more accountable to citizens spend less, on average, than governments that are less accountable; and with ambiguity about the effects of competitive elections, by themselves.

The last three columns indicate, in addition, that competitive elections appear to have no indirect effect on military spending. The interaction terms with war, military spending by contiguous countries, and last year's military spending are all insignificant. There is less ambiguity about the theoretical prediction linking the effect of government incentives to pursue the collective interests of citizens on military spending, conditional on these three factors. The insignificance of the three interaction terms suggest that competitive elections are insufficient to trigger these incentives.

Table 3 substitutes the years of continuous competitive elections for the competitive elections variable in Table 2. The years of continuous competitive elections is based on the indices of

legislative and executive electoral competitiveness from the DPI. It takes a value of zero if there are no competitive elections in a country (in non-democracies).

The results reflect the ambiguity surrounding the direct effects on military spending of greater government accountability to collective citizen interests. Consistent with this, columns one and two indicate no unconditional effect of the years of elections on military spending.

The interaction terms, though, also consistent with the earlier arguments, are uniformly negative and significant. Countries with a longer history of competitive elections and, therefore, greater ability of citizens to mobilize in support of their collective interests, respond to greater threats (war and higher spending by neighbors) with smaller increases in military spending. High government spending in the previous year is also associated with less government spending in the current year in countries with more continuous years of competitive elections than in those with fewer: the interaction between lagged government spending and years of elections is also negative. The other variables are no different than in Tables 1 and 2; insignificant control variables are not reported.

Gehlbach and Keefer (2012) argue that the age of the ruling party, less the ruler's years in office, captures the degree to which parties are institutionalized –to which party members can prevent shirking by leaders, and leaders can limit free-riding by members. This variable should have similar effects on military spending as those documented in Table 3 for the continuous years of competitive elections.

Table 4 shows that this is the case. As with continuous elections, and consistent with the ambiguous theoretical predictions, older ruling parties have no direct linear effect on military spending. However, two out of three of the interaction terms are highly significant. Military spending in time of war, and military spending in response to spending in contiguous countries, are both lower when the ruling party is older[14].

5. A Focus on the Arab Spring

According to the 2013 SIPRI report on 'Trends in World Military Expenditure 2013" (Perlo-Freeman et al, 2013) global military spending fell by 0.5 per cent in real terms between 2011 and 2012. Military expenditure for the median developing country remains much lower and was precipitously declining since 2009 (Figure 1).This constitutes a reversal of a precipitously rising trend since 1998. However, the MENA region has been an exception, where 2011 and 2012 saw not only a continuation of the trend but also significant increases in the rate of military spending.

The overall story of the MENA region is consistent with our model's theory and empirical findings, in that increased risks trigger higher spending, which is further reinforced by autocratic polities: that is politicians have little incentive to pursue the collective interests of citizens. The rising regional military spending is explicable by the model's results even when we factor in the nascent democratization wave that has swept the Arab world recently. This is because another major result of this paper suggests that military spending changes little from non-democracies to young democracies. Young democracies will not do the trick because collective action is costly; hence, the capacity of society to hold politicians accountable to the collective interests of citizens will likely require continuous years of competitive elections or institutionalized ruling parties. The latter should be capable of

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[14] Naturally successive competitive elections as well as established parties are substantially accounted for by the OECD and NATO member states, where collective security and regional integration have made lower military spending possible. The results of tables 3 and 4, however, are robust to country fixed effects; hence they are not likely to be confounded with the OECD/NATO effect.

limiting rent-seeking and, therefore, likely to have similar effects on military spending as those due to continuous years of competitive elections.

5.1 Explaining the regional trends in the immediate post-Arab spring

Egypt and Tunisia: Following the Jan 25th, 2011 revolution, the political discourse in Egypt pitted the Muslim Brothers against the largely liberal and secular forces. However, Dr. Mohamed Mursi, the first elected Egyptian president and the Muslim Brothers Movement that he belongs to, soon found themselves on a collision course with the Army over Mursi's attempts to assert presidential authority over the military. These moves were also met with strong criticism by his secular and liberal opponents but also by other religious groups, who have all perceived these actions as an attempt by the Muslim Brothers to take over the army and the state[15]. Ultimately on the 30th of June, 2013, the Egyptian army, following large protests against Mursi, deposed the president.

What would we expect of military spending over this period? Tables 3 and 4 point to two offsetting effects. Table 3 highlights the mixed effects of new democracies. When lagged military spending as a fraction of GDP is two percent, as it was in 2011 in Egypt, the sum of the linear and interactive coefficients on the continuous years of competitive elections is slightly, but insignificantly positive. However, measured military spending in countries such as Egypt, Indonesia, Pakistan or Thailand significantly understates the true financial resources of the military, since in all of these places the military controls substantial economic interests.[16] At higher levels of military spending, the effect of democratization should be to reduce spending, though the effect is smaller in new democracies.

The Table 4 results suggest that an institutionalized ruling party – one that is substantially older than its current leader's tenure in office – should also reduce military spending, though the estimated coefficients are insignificant. Upon its entry into power, the Muslim Brotherhood was a well-organized political party, with a history far longer than the tenure of President Mursi as a leader of the party.

The published data on Egyptian military expenditure is consistent with this interpretation of the empirical tables. It shows lower military spending in 2011 and 2012 (see Figure 2B). However, this is only illustrative, since published expenditures began to decline in 2006. We cannot exclude either the possibility that unobserved security risks declined over this time, or that the military's control over off-budget resources rose during this period to offset its budget losses. At the same time, it seems more plausible that the Mursi government intended to curb military control of off-budget resources, consistent with the effects estimated in the tables.

There are no data that allow researchers to take systematically into account the military's influence in new democracies. The Egyptian experience illustrates the difficulties that this creates for empirical analysis of the effect of democratization on military spending. Where the pre-democracy military is interested in rents as well as national security, we expect that under democracy, military spending should fall, but not if the military retains substantial influence. In the Egyptian case, the Mursi government, backed by a well-organized ruling party, appears to have over-estimated its ability to reshape state institutions, including reducing military prerogatives, precipitating large popular protests and a military takeover. In other cases, a strong ruling party is not matched by a powerful military, and reduces

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[15] Among the first to voice this concern was the ultra-conservative Al-Nour Party, which eventually joined the coalition against the Muslim Brothers.
[16] According to Amr Hamzawy, a political analyst and a former elected Member of Parliament, the military economic establishments and assets account for as high as one third of Egypt's economy. In the same vein, Paul Sullivan, a US National Defense University professor and expert on Egypt's military, was quoted by *Time* magazine in 2011 as estimating the size of the military assets at 10 to 15 percent of the country's economy.

military spending with no such consequences. In still other cases, the strong ruling party recognizes that the military is strong, and chooses not to reduce spending. The available data do not allow us to distinguish these cases in the empirical analysis.

Tunisia contrasts with Egypt in two important ways: military spending going into the Arab Spring was lower; and the ruling party, the Nahda movement, that came to power was less-institutionalized (was younger, relative to the tenure of its leader). Because lagged military spending was lower in 2011(around 1.3 percent of GDP), the net effect of Tunisian democratization (from Table 3) should have been to increase spending, though only modestly. The idea is that the autocratic regime under-funded the military in order to insulate itself from a regime threat; democratization removed this downward pressure on the budget. Because the ruling party was weak, the negative effect of institutionalized ruling parties on military spending, from Table 4, was attenuated.

Again, we cannot reject other, complementary interpretations.   Tunisia has not only experienced regime change since the December 2010 revolution that expelled the Bin Ali regime. In particular, external threats associated with the fluid borders with Libya have likely increased.   This is consistent with the argument here, however: the higher sensitivity of the autocratic regime to coup threats might have made it more reluctant to increase military spending in response to growing insecurity at the border.

The GCC: The countries of the Arab Gulf Cooperation Council were not touched by regime change as a consequence of the Arab Spring.   These governments responded to the revolutionary fervor that swept the region with substantial increases in social spending. Saudi Arabia announced in February and March of 2011, a wide ranging spending program of about $130 billion, which amounts to more than double the Kingdom's total budget for 2007. The program contained a plan for creating 60,000 jobs at the Interior Ministry alone; building 500,000 housing units; raising the minimum wage in the public sector to 3,000 Saudi riyals; extending incentives to all public sector employees in the Kingdom; the establishment of a general support fund for the unemployed nationals; and, boosting the financial resources of the public sector lending institutions (Elbadawi, 2012).   While there were no sustained increases in military spending in the GCC countries in the years since the Arab Spring, Figures 3A – C indicate that by 2012, three GCC countries had begun to increase spending again. This indicates some sensitivity of spending decisions to internal security risks, though our empirical model does not speak to these. On the other hand, spending in GCC countries is high and our model does speak to this. The GCC countries are in a neighborhood immersed in geo-political struggle and characterized by high military spending. High neighbor spending is associated with higher own-spending on the military. Our analysis suggests that the effect of neighbor spending is suppressed in the presence of older ruling parties and more continuous years of elections. Both of these are absent in the GCC countries, however.

North Africa: Algeria is similar to the GCC countries in the sense that it, also, saw no regime change as a consequence of the Arab Spring. However, it did see changes in its external security environment and large increases in military spending. From 2010 – 2012, military spending in Algeria rose by approximately one-third, or a full percentage point of GDP, to 4.5 percent of GDP (Figure 4.A); since 2003, spending increased by 190 percent. According to Perlo-Freeman et al (2013: p. 1) the increase is related to, "an ongoing major arms-procurement program and to the precarious security situation in the Sahel, which has led the Algerian Government to strengthen its borders with Libya and Mali. More troops were sent out to Algeria's southern border in 2012 and the government increased the number of checkpoints and surveillance flights that aim to track drug traffickers, arms traders and armed groups." These factors – that is, exact characterizations of external security threats – are

captured in our empirical analysis through the war dummy. Countries at war spend more on the military – but the effect is attenuated in the presence of institutionalized ruling parties and continuous years of competitive elections. Neither of these is present in Algeria; hence, we would predict large swings in spending in response to external threats, precisely what we observe.

Neighboring Morocco, also, saw no regime change, but it also experienced little change in its external security environment. Consistent with this, military spending changed little, hovering around 3.4-3.5 percent of GDP (Figure 4.B).

5.2 Implications for military spending in the post-Arab spring

The estimates in Tables 2 and 3 and a vast amount of earlier research all conclude that external security threats are the most significant driver of military spending. Even casual observers can detect, however, that these are increasing in the Middle East. In addition to the continued risks posed by the lingering Arab-Israeli conflict, rising hostilities between Iran and some major Arab countries, most notably over Syria, point to a deep and violent Sunni-Shia divide that threatens to engulf the region. Moreover, the risks of civil war remain high in several Arab countries- including in the Arab Spring group, such as Libya and Yemen. It is clear to any observer, therefore, without reference to the analysis here, that regional military spending will remain high.

However, our results suggest that, should these countries avoid major escalation of conflict, at least in some sub-regions, such as North Africa, steady democratic consolidation in the form of continuous competitive elections over several years is likely to slow down and, in some cases, eventually reverse the current militarization trend in the region. By reducing the 'regional public bad' (Collier and Hoeffler 2002) of military spending, democratic consolidation is, therefore, predicted to influence military spending in non-democratic countries in the region.

There is no sign, yet, of a regional democratic wave that has swept over other parts of the world, and which could magnify these effects. For example, Lebovic (2001) estimates an empirical model of military spending, confined to a sample of Latin America countries over 1974-1995, that accounts for intergovernmental constraints (e.g. budget size, budget growth, budget shares) as well as extra budgetary drivers, such as wars, economic growth, inflation, debt service …etc. The estimation results point to a robust association between democratization and budgetary changes in favor of civilian spending. Not only did military spending drop relative to civilian spending, it dropped in absolute terms, as well, to fund increases in civilian spending.

6. Conclusions

Save for the strand associated with the arms race between NATO and the Warsaw Pact during the Cold War, the literature on the determinants of cross-country military spending, including developing countries is relatively small and largely focused on internal and external threats (inter-state and home wars), the power of the military in non-democratic countries and the financial resources available to countries. This paper contributes to this literature by re-examining regime effects on military spending, while controlling for a host of other determinants, including those related to the security environment.

Our argument introduces three distinctions into the debate about the determinants of military expenditure. First, some fraction of expenditures purchase the public good of national defense; the remainder flows to other purposes, typically rent-seeking. Variations in military expenditure are a function of changes in both of these, but typical political drivers of greater public good provision also reduce political incentives to seek rents, giving rise to ambiguous implications for total military expenditure.

Second, unlike other public goods, national security offers high benefits to political leaders above and beyond those available to citizens. For example, upon losing a war, politicians have a higher probability than the average citizen of losing their job; perhaps, even their lives. The implication of this peculiar feature of national security is that, unlike other standard public goods, it is no longer clear that politicians operating under a more accountable democratic polity should be better at providing the public good of national security than those under non-democratic and less accountable regimes. Another feature of military spending that we also take into consideration is that it is likely to be responsive to the efficiency of military organization. This is because, to the extent that some regimes might feel threatened by efficiently-organized military, they might opt for a combination of higher level of spending and less efficiently organized military.

Given the above unique features of military spending and the associated public good of national defense, the novelty of our analytical framework, we would argue, hinges on its explicit focus on citizen organization. In the presence of more organized citizens, politicians will likely be forced to align their demand for national defense to levels that do not crowd out other public goods that are highly valued by the citizens at large. Also, on view of being a highly procurement-intensive public good, military spending is less likely to be inflated by corruption when politicians are made to account to well organized citizenry. Moreover, in well-organized societies governments do not have to choose the socially sub-optimal equilibrium of excessive military spending and inefficiently organized military. This is because when citizens are better-organized coups plotters had to confront higher costs when they overthrow civilian governments that are responsive to citizens. However, because collective action does not come by without a cost, the effects on military spending of collective citizen influence over governments should only be observed when threats to national security and military spending are high. When both are low, citizens are not likely to care much about rent-seeking, because it is just a fraction of an already small overall expenditure; nor are they likely to be concerned about low military efficiency because the risks involved are small.

The above analytical framework allows much sharper empirical testing of the impact of regime type on military spending than the opaque democracy-autocracy approach that dominates the received literature. Specifically, our empirical analysis was guided by the fundamental conceptual prediction that: military spending should be lower when citizens are better organized, but only at higher threat levels and higher levels of military spending, when military spending and its efficiency are salient. Also, military spending over time should display smaller inertia depending on the ability of citizens to hold government accountable, because changes in military spending will be influenced more by shocks to national security than by its past levels the more organized the citizenry. Therefore, while national security risks and lagged military spending should be strong predictors of current military spending, their positive associations should be attenuated when citizens can hold governments accountable (the interaction terms should be negative).

We test for the above hypotheses in an encompassing empirical model of military spending using global data covering more than 140 developed and developing countries. Starting with the intuitive and relatively straightforward effects, we find that lagged military spending, war, size of population and military spending in contiguous countries are all positively and robustly associated with higher military spending, both unconditionally and conditional on *polity2* or other measures of political regime type, such as years of competitive elections. Other control variables, most notably presence of democratic neighbors, were not found to be significant. A summary of the main findings on the substantive hypotheses discussed above follows.

First, we find democracy, as measured by the *polity2*, to have had a negative and significant effect on military spending when we abstract from interaction terms. However, when the interaction terms with of the Polity index with each of external threats –military spending by contiguous neighbors and war – or lagged military spending, both the direct and interaction terms were no longer robustly associated with military spending. We argue that governmental behavior related to the military and to national security could itself influence Polity coding decisions. To the extent that this is true, it should generate a negative bias in the linear Polity coefficient and bias towards zero in the interaction terms between Polity and the external threat variables. These results appear to cohere with this possibility.

Second, the fact that the *polity2* variable reflects how democratically countries *function* rather than *how* democratically they are organized, suggests that the DPI measure of the incidence of (or years of continuous) competitive elections might be a better measure of the capacity of a society's *collective action*. We found no unconditional effects on military spending for either the incidence or the years of competitive elections. As discussed above, these results could be explained by the theoretical ambiguity surrounding the direct effects on military spending of greater government accountability to collective citizen interests.

Third, the interaction terms of the incidence of competitive elections were also found to be insignificant. However, the interaction terms of the indicator of years of competitive elections are uniformly negative and significant. Countries with a longer history of competitive elections and, therefore, greater ability of citizens to mobilize in support of their collective interests, respond to greater threats (war and higher spending by neighbors) with smaller increases in military spending. High government spending in the previous year is also associated with less government spending in the current year in countries with more continuous years of competitive elections than in those with fewer. As we argue above, there is less ambiguity about the theoretical prediction linking the effect of government incentives to pursue the collective interests of citizens on military spending, conditional on these three factors. Our results, therefore, confirm that democratic consolidation- in the form of continuous years of competitive elections- does provide such incentives. On the other hand, the insignificance of the three interaction terms suggests that isolated incidences of competitive elections are insufficient to trigger these incentives.

Fourth, as an alternative to the continuous years of competitive elections we use an indicator reflecting the degree to which parties are institutionalized (the age of the ruling party, less the ruler's years in office). It has been argued in the literature that because in such parties members can prevent shirking by leaders and leaders can limit free-riding by members, they should have similar influence on military spending as that of continuous competitive elections. The evidence corroborates this prediction, in that older ruling parties have no direct unconditional effect on military spending, but two out of three of the interaction terms are highly significant and negative.

Finally, we use the insight from our empirical finding to explain the rising trend of military spending in the MENA region, including in the Arab countries that have recently experienced the demise of long-reigning autocratic regimes following popular uprisings. We argue that the patterns of military expenditures are consistent with the rising external risks, including those triggered by the regional democratic wave, most notably the rising military spending in Algeria or the military build-up in the GCC. The rising military expenditure was also likely to have been influenced by either the absence of democratic polity or institutionalized ruling parties in most countries of the region; or not enough experience with democracy and competitive elections in the countries that have recently experienced democratic transitions.

On view of the expectation that external risks (as well as domestic risks for some countries) are likely to remain high in the MENA region and that democratic consolidation will

certainly take long time to achieve, not to mention that post-democratic relapse in some countries is a distinct possibility, we predict the region to be locked into accelerated or at least steadily rising military build-up for several years to come.

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Figure 1: MENA and Developing Countries' Median Military Spending
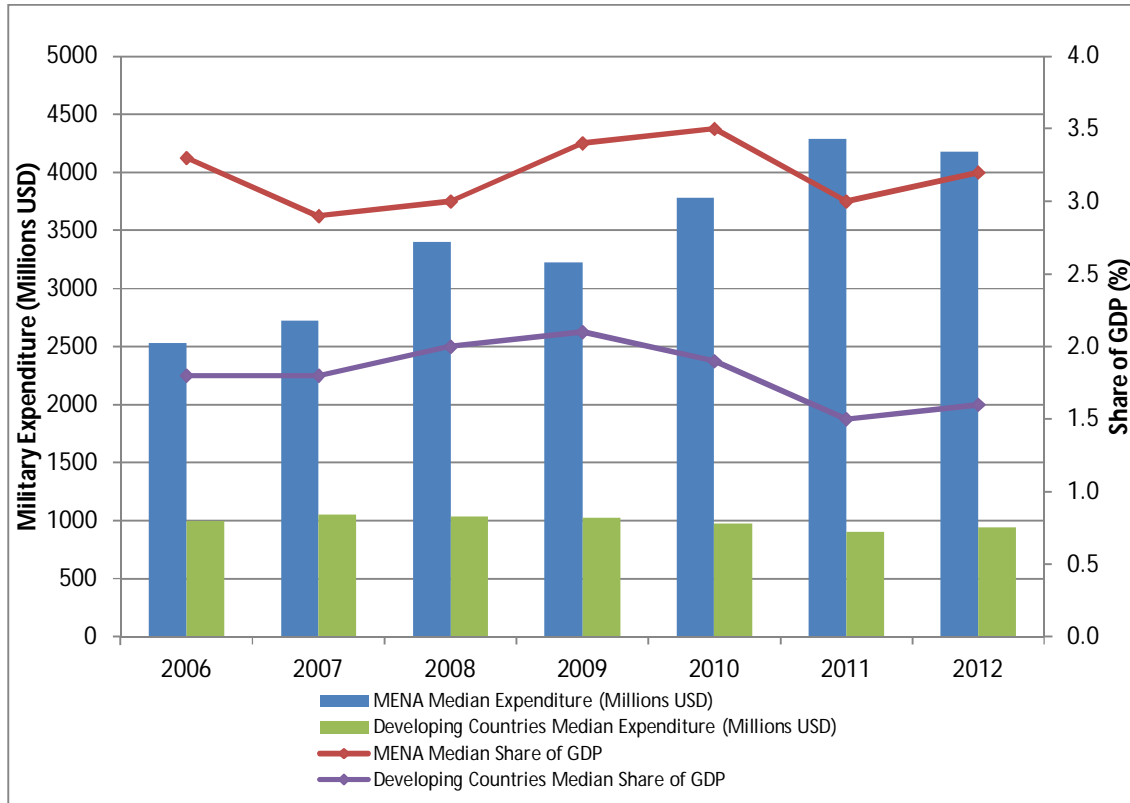
Notes:
1. MENA region includes: Algeria, Morocco, Libya, Tunisia, Sudan, Iraq, Jordan, Kuwait, Oman, Saudi Arabia, Syria, Egypt, and Turkey.
2. Tunisia figures for 2011 and 2012 are SIPRI-staff estimates, Sudan figures include only 2006, Syria figures are missing 2012, and Libya figures are missing 2009-11.
3. Due to lack of data, Iran, Qatar and the United Arab Emirates are excluded.
Source: Stockholm International Peace Research Institution (SIPRI) and authors' own elaborations.

Figure 2A: Tunisia Military Spending
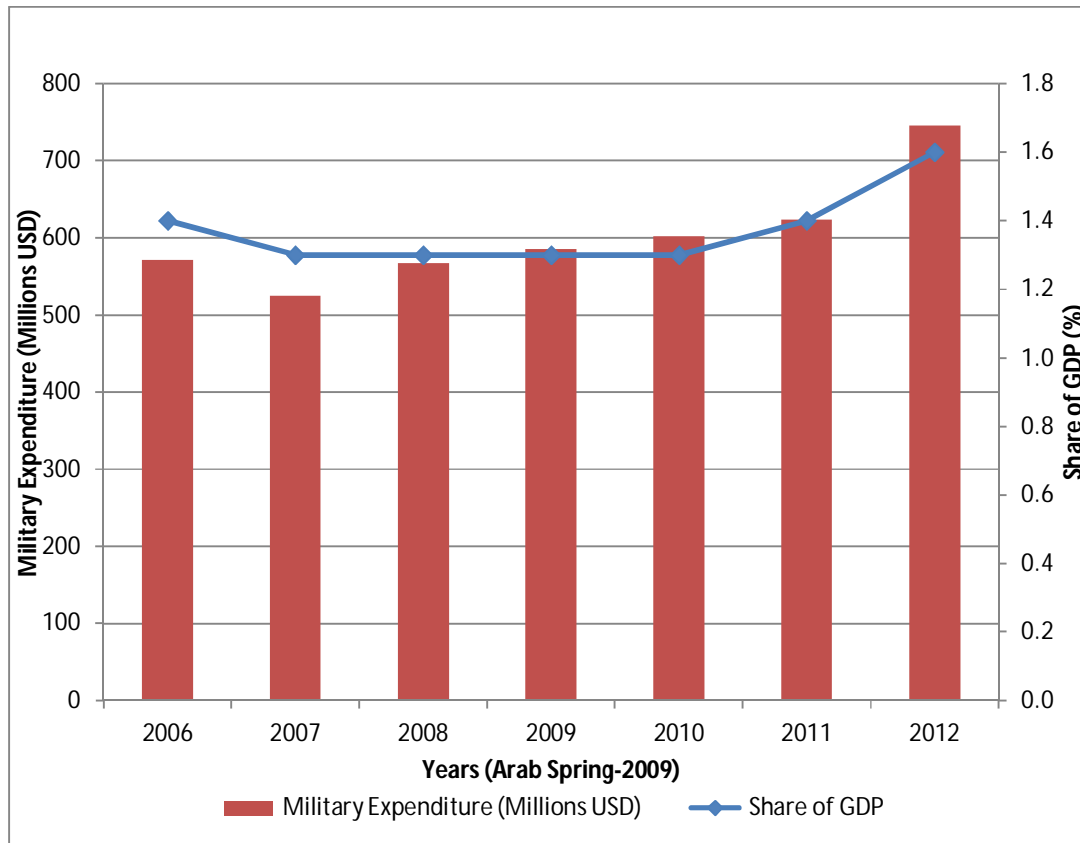
Source: Stockholm International Peace Research Institution (SIPRI) and authors' own elaboration.

Figure 2B: Egypt Military Spending

Source: Stockholm International Peace Research Institution (SIPRI) and authors' own elaboration.

Figure 3A: Saudi Arabia Military Spending

Source: Stockholm International Peace Research Institution (SIPRI) and authors' own elaboration.

Figure 3B: Kuwait Military Spending

Source: Stockholm International Peace Research Institution (SIPRI) and authors' own elaboration.

Figure 3.C: Oman Military Spending

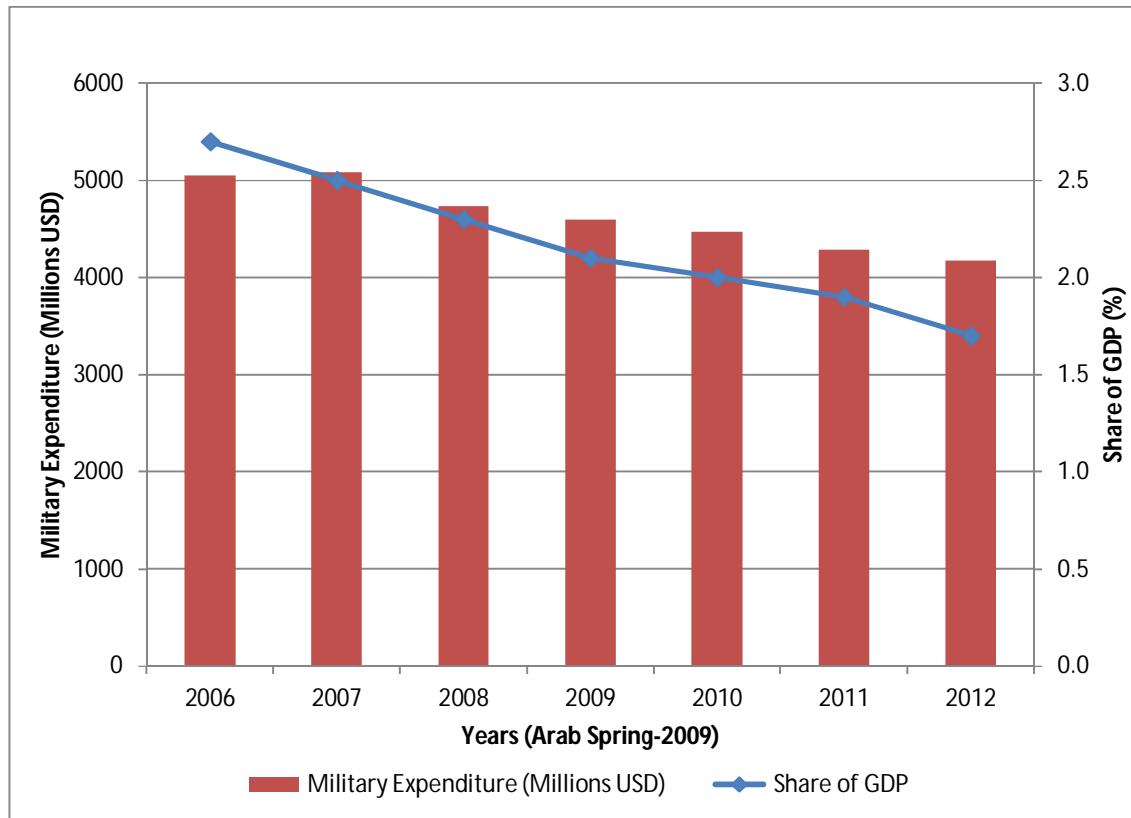Source: Stockholm International Peace Research Institution (SIPRI) and authors' own elaboration.

Figure 4.A: Algeria Military Spending

Source: Stockholm International Peace Research Institution (SIPRI) and authors' own elaboration.
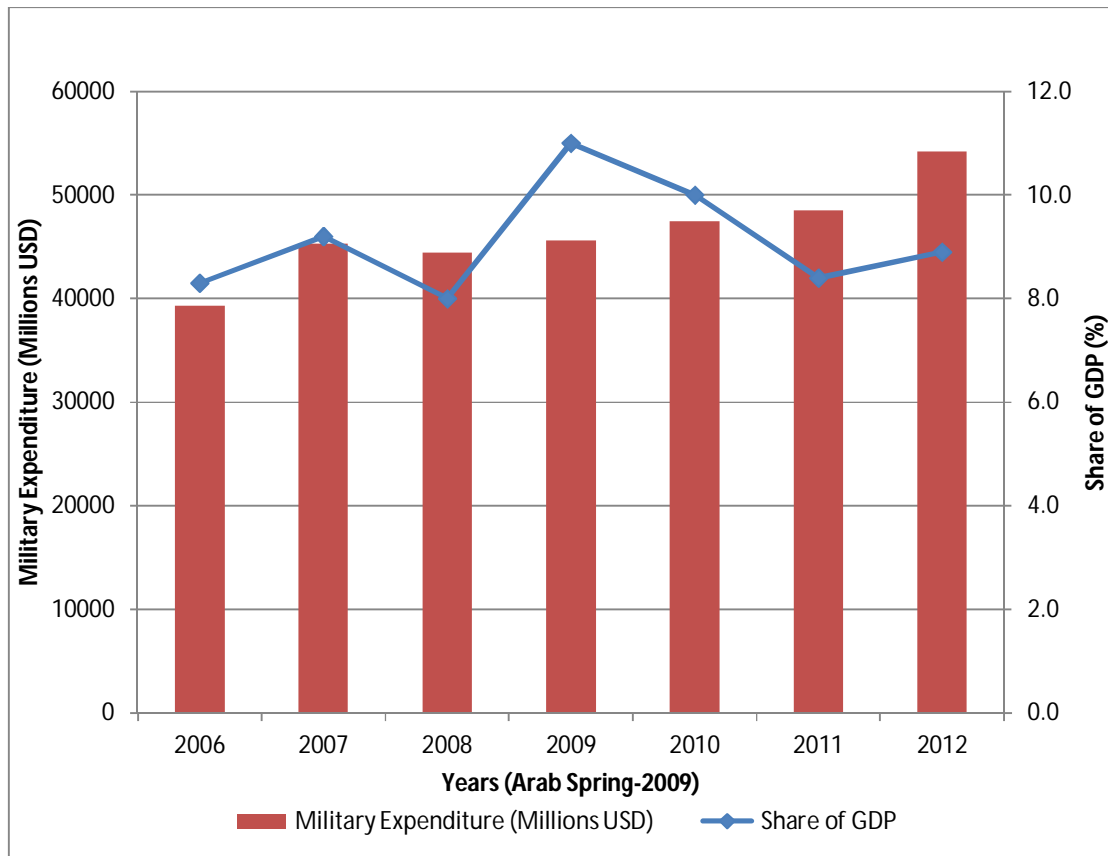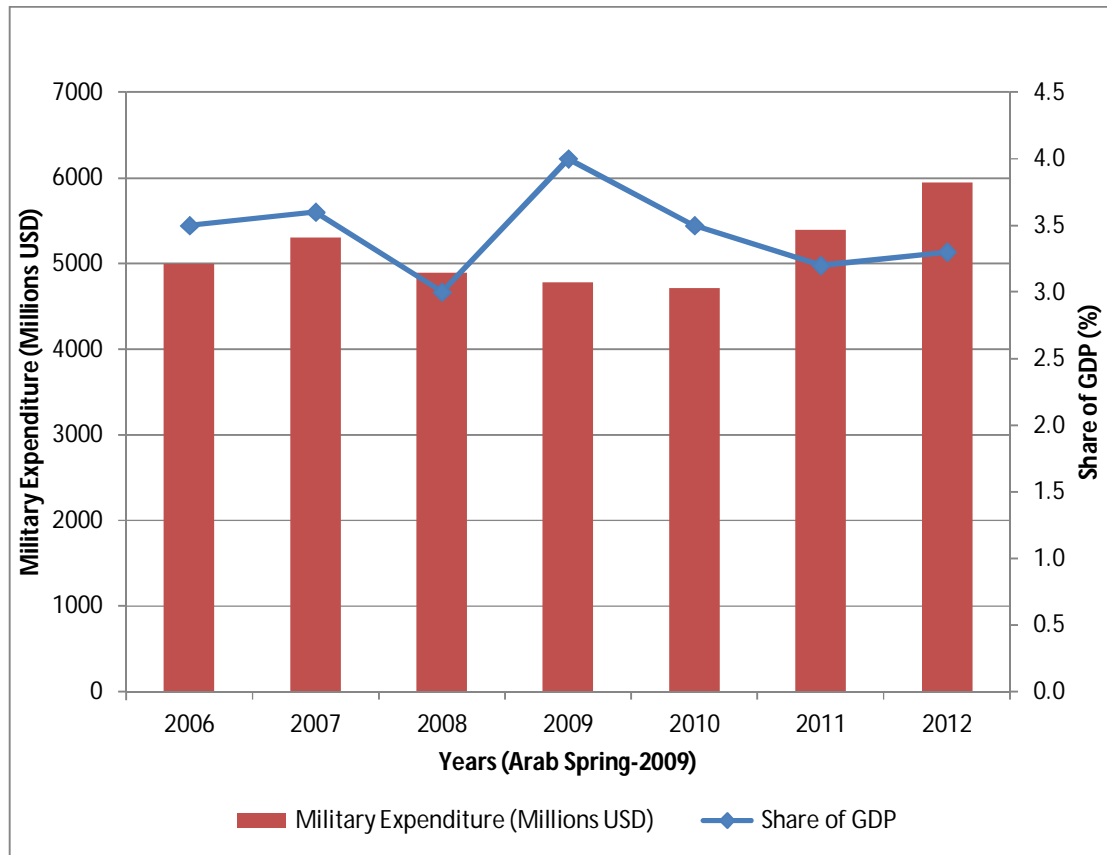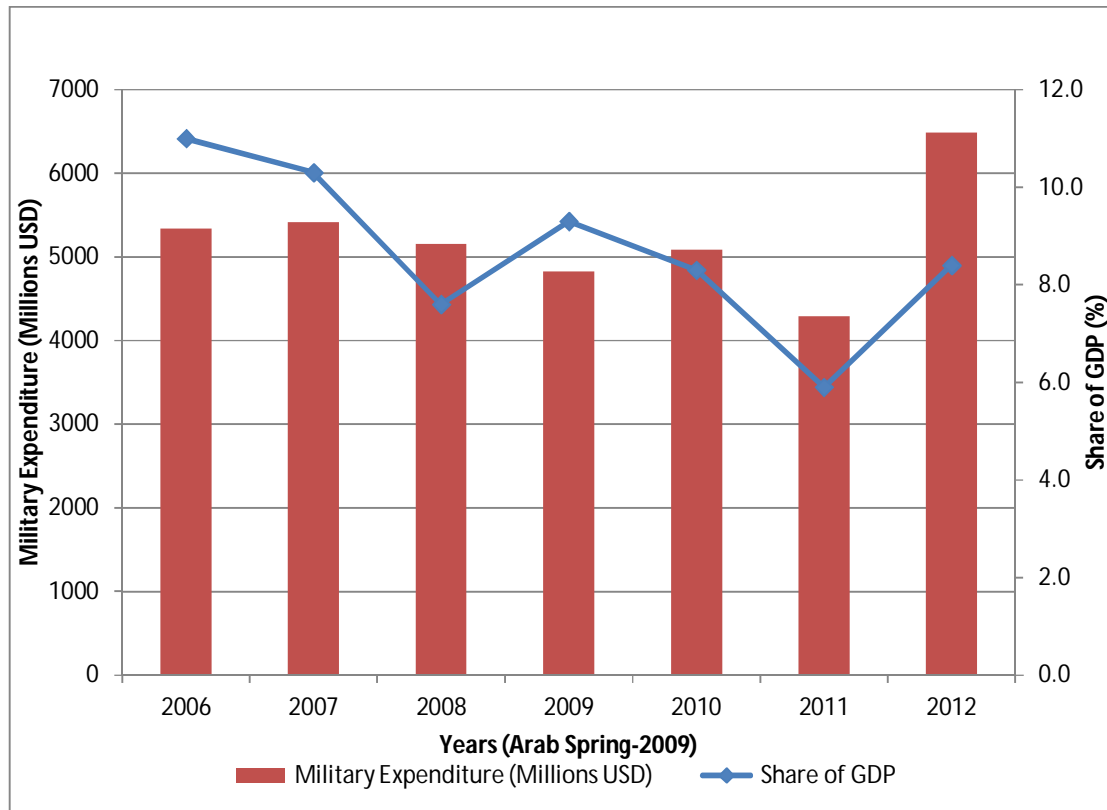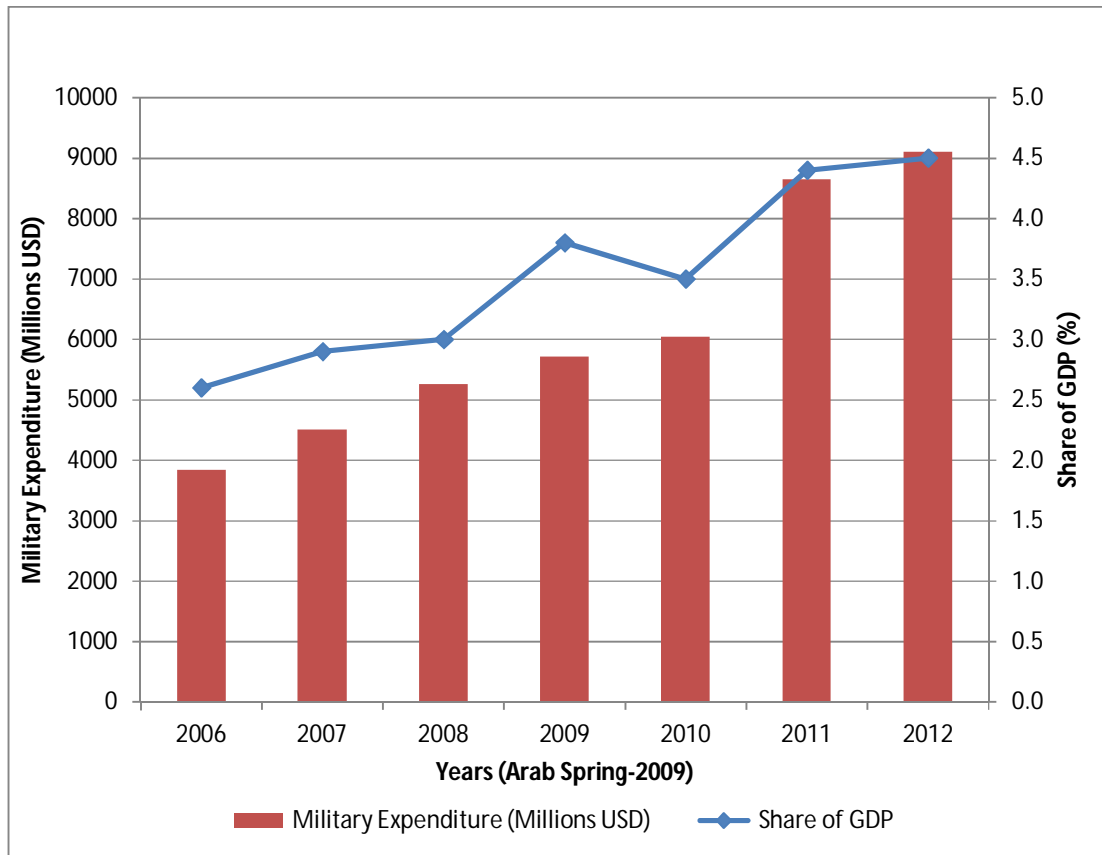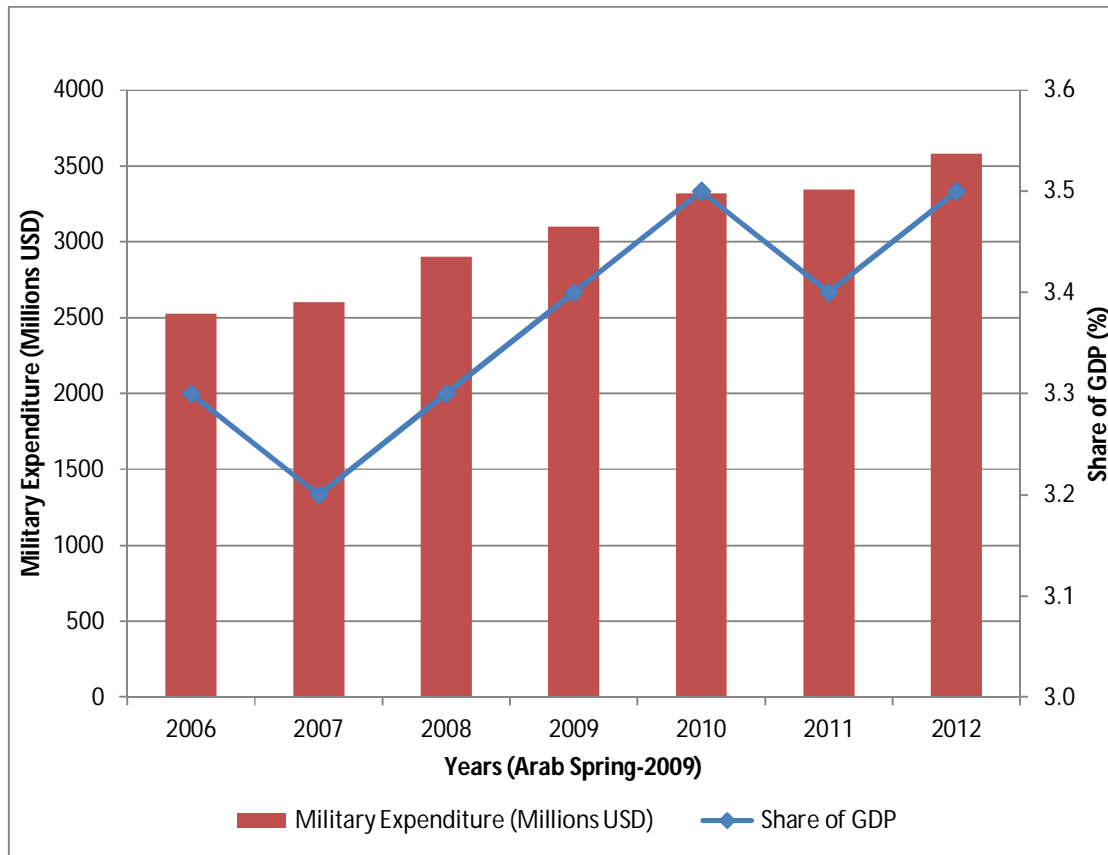
Figure 4.B: Morocco Military Spending

Source: Stockholm International Peace Research Institution (SIPRI) and authors' own elaboration.

Table 1: Military Spending and Polity-Measured Democracy

	Dep var: Military spending/GDP				
	(1)	**(2)**	**(3)**	**(4)**	**(5)**
Lagged Military Spending/GDP		0.62***	0.62***	0.59***	0.62***
		(0)	(0)	(0)	(0)
Polity2 (democracy/autocracy)	-0.070**	-0.024**	-0.0053	0.0065	-0.021*
	(0.013)	(0.043)	(0.70)	(0.71)	(0.080)
War dummy	2.77*	1.99**	1.98**	1.97**	2.01**
	(0.056)	(0.035)	(0.035)	(0.038)	(0.034)
Average military exp. as a % of GDP of contiguous countries	0.14**	0.059**	0.057*	0.064**	0.057*
	(0.036)	(0.050)	(0.064)	(0.036)	(0.059)
Military spending/GDP in contiguous countries x Polity2			-0.0057		
			(0.11)		
Lagged military spending/GDP x Polity2				-0.011*	
				(0.065)	
War dummy x Polity2					-0.028
					(0.49)
Average Polity2 of contiguous countries	0.022	0.015	0.0092	0.017	0.014
	(0.63)	(0.41)	(0.62)	(0.31)	(0.48)
Average population of contiguous countries	11.7***	4.00***	4.42***	4.14***	3.88***
	(0.0017)	(0.0017)	(0.00018)	(0.0036)	(0.0030)
Number of years of war (max 5)	-0.19	-0.27	-0.27	-0.25	-0.27
	(0.48)	(0.17)	(0.17)	(0.22)	(0.17)
US Arms Exports, constant 1990 dollars/GDP, constant 2000 dollars	3.54e+07	1.21e+07	1.11e+07	9.88e+06	1.25e+07
	(0.16)	(0.39)	(0.47)	(0.55)	(0.38)
Log income/capita, constant 2000 US dollars	-2.26**	-0.61	-0.63*	-0.57	-0.60
	(0.020)	(0.10)	(0.092)	(0.10)	(0.11)
Percent population rural	-5.4e-09	-1.5e-09	-1.4e-09	-1.9e-09	-1.5e-09
	(0.31)	(0.50)	(0.53)	(0.35)	(0.50)
Percent population 14 and under	0.048	0.026	0.018	0.014	0.025
	(0.42)	(0.32)	(0.47)	(0.55)	(0.33)
Percent population 65 and over	0.069	-0.017	-0.034	-0.025	-0.019
	(0.75)	(0.84)	(0.67)	(0.77)	(0.82)
Log total population	-0.16	-0.33	-0.19	-0.26	-0.33
	(0.75)	(0.62)	(0.79)	(0.70)	(0.62)
Natural resource rents/GDP	0.014	-0.0092	-0.0086	-0.0083	-0.0090
	(0.32)	(0.30)	(0.33)	(0.33)	(0.31)
Observations	4,333	4,286	4,286	4,286	4,286
R-squared	0.135	0.475	0.476	0.479	0.475
Number of ifs_code	146	146	146	146	146

Note: Robust *p*-values in parentheses with country-clustered standard errors. All specifications control for country and year fixed effects.
*** $p<0.01$, ** $p<0.05$, * $p<0.1$

Table 2: Military Spending and Elections

	(1)	(2)	(3)	(4)	(5)
Dependent Variable: Military spending/GDP					
Lagged military spending/GDP		0.59***	0.59***	0.58***	0.59***
		(0)	(0)	(0)	(0)
Competitive Legis. and Exec. Elections	0.15	0.036	0.023	-0.14	0.10
	(0.65)	(0.80)	(0.91)	(0.53)	(0.53)
War dummy	3.24**	2.19**	2.19**	2.23**	2.53*
	(0.049)	(0.046)	(0.046)	(0.048)	(0.064)
Average military exp. as a % of GDP of contiguous countries	0.15**	0.060**	0.059*	0.058**	0.059**
	(0.019)	(0.044)	(0.068)	(0.045)	(0.050)
Military spending/GDP (Contiguous) x Competitive Elections			0.0040		
			(0.94)		
Lagged military spending/GDP x Competitive Elections				0.053	
				(0.40)	
War dummy x Competitive Elections					-0.69
					(0.34)
Average polity of contiguous countries	-0.0023	0.0042	0.0045	0.0029	0.00069
	(0.96)	(0.83)	(0.82)	(0.88)	(0.97)
Average population of contiguous countries	11.9***	3.86***	3.85***	3.77***	3.75***
	(0.0018)	(0.0048)	(0.0048)	(0.0052)	(0.0071)
Number of years of war (max 5)	-0.30	-0.32	-0.32	-0.34	-0.33
	(0.32)	(0.17)	(0.17)	(0.17)	(0.17)
US Arms Exports, constant 1990 dollars/GDP, constant 2000 dollars	3.07e+07*	8.79e+06	8.78e+06	9.02e+06	8.91e+06
	(0.091)	(0.28)	(0.28)	(0.25)	(0.28)
Log income/capita, constant 2000 US dollars	-1.89**	-0.41	-0.41	-0.42	-0.39
	(0.025)	(0.25)	(0.25)	(0.25)	(0.27)
Percent population rural	-4.5e-09	-7.5e-10	-7.5e-10	-6.3e-10	-5.9e-10
	(0.40)	(0.74)	(0.74)	(0.78)	(0.80)
Percent population 14 and under	0.10	0.050	0.050*	0.054*	0.047
	(0.13)	(0.10)	(0.099)	(0.064)	(0.12)
Percent population 65 and over	0.20	0.026	0.026	0.024	0.024
	(0.43)	(0.80)	(0.79)	(0.81)	(0.82)
Log total population	-0.36	-0.41	-0.42	-0.43	-0.39
	(0.84)	(0.58)	(0.58)	(0.57)	(0.60)
Natural resource rents/GDP	0.019	-0.0077	-0.0077	-0.0080	-0.0074
	(0.18)	(0.41)	(0.41)	(0.41)	(0.42)
Observations	3,904	3,860	3,860	3,860	3,860
R-squared	0.134	0.454	0.454	0.454	0.454
Number of countries	146	146	146	146	146

Note: Robust *p*-values in parentheses with country-clustered standard errors. All specifications control for country and year fixed effects.
*** p<0.01, ** p<0.05, * p<0.1

Table 3: Continuous Years of Competitive Elections and Military Spending

Dependent variable: Military spending/GDP					
Lagged Military Spending		0.59***	0.61***	0.59***	0.59***
		(0)	(0)	(0)	(0)
Continuous years of competitive elections (zero if no elections or elections not competitive) (see note)	0.033	0.021	0.050***	0.037**	0.024
	(0.44)	(0.22)	(0.0013)	(0.011)	(0.17)
War dummy	3.23*	2.18**	2.08*	2.16**	2.66**
	(0.051)	(0.047)	(0.059)	(0.048)	(0.041)
Average military exp. as a % of GDP of contiguous countries	0.15**	0.061**	0.060**	0.089**	0.059**
	(0.016)	(0.039)	(0.039)	(0.021)	(0.048)
Lagged military spending/GDP x years continuous competitive elections			-0.017**		
			(0.024)		
Military spending/GDP in contiguous countries x years continuous competitive elections				-.0079**	
				(0.034)	
War dummy x years continuous competitive elections					-0.081**
					(0.039)
Average polity of contiguous countries	0.0050	0.0078	0.010	0.0029	0.0045
	(0.92)	(0.68)	(0.59)		
				(0.88)	(0.81)
Average population of contiguous countries	12.5***	4.17***	4.53***	4.30***	4.08***
	(0.0012)	(0.0020)			
			(0.0016)	(0.0011)	(0.0029)
Observations	3,904	3,860	3,860	3,860	3,860
R-squared	0.135	0.454	0.457	0.456	0.456
Number of countries	146	146	146	146	146

Note: All specifications control for country and year fixed effects. Coefficients for the following variables are insignificant and not reported: number of years of war, US arms exports, log income/capita, percent population rural or 14 and under or 65 and over, the log of total population and natural resource rents/GDP. Robust *p*-values in parentheses with country-clustered standard errors. All specifications control for country and year fixed effects. *** p<0.01, ** p<0.05, * p<0.1. Elections are competitive if the legislative and executive indices of electoral competitiveness are scored with seven, out of a 1 – 7 scale, in the Database of Political Institutions (Beck, et al.) , where seven requires that multiple parties can and do compete and none receives more than 75% of the vote.

Table 4: Ruling Party Institutionalization and Military Spending

Dependent variable: military spending/GDP					
Lagged military spending/GDP		0.59***	0.59***	0.59***	0.59***
		(0)	(0)	(0)	(0)
Ruling party age less ruler years in office (zero if negative)	-0.0023	-0.00050	-0.00034	0.00010	0.0057***
	(0.56)	(0.76)	(0.93)	(0.95)	(0.0068)
War dummy	3.16*	2.29*	2.29*	2.92**	2.36*
	(0.095)	(0.075)	(0.076)	(0.045)	(0.068)
Average military exp. as a % of GDP of contiguous countries	0.13*	0.064*	0.064**	0.064*	0.13***
	(0.054)	(0.058)	(0.048)	(0.055)	(0.0041)
Lagged military spending/GDP * (party age - ruler years)			-.000072		
			(0.97)		
War dummy * (party age - ruler years)				-0.018**	
				(0.012)	
Military spending/GDP in contiguous countries * (party age - ruler years)					-.0027***
					(0.00035)
Average polity of contiguous countries	-0.026	-0.022	-0.022	-0.024	-0.030
	(0.67)	(0.34)	(0.34)	(0.32)	(0.21)
Average population of contiguous countries	13.5***	4.06**	4.05**	4.08**	3.85**
	(0.0093)	(0.047)	(0.041)	(0.044)	(0.046)
Percent population rural	-1.1e-08**	-3.2e-09*	-3.2e-09*	-3.2e-09*	-2.9e-09
	(0.036)	(0.094)	(0.091)	(0.093)	(0.13)
Observations	3,470	3,446	3,181	3,181	3,181
R-squared	0.130	0.447	0.452	0.453	0.455
Number of countries	143	143	141	141	141

Note: Robust p-values in parentheses with country-clustered standard errors. All specifications control for country and year fixed effects. *** p<0.01, ** p<0.05, * p<0.1. Coefficients for the following variables are insignificant and not reported: number of years of war, US arms exports, log income/capita, percent population 14 and under or 65 and over, the log of total population and natural resource rents/GDP.