

Coercion, Co-optation, or Cooperation?  
State Capacity and the Risk of Civil War, 1961–2004<sup>1</sup>

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## Abstract

Recent research identifies state capacity as a crucial determinant of civil peace. Scholars often interpret the association between wealth and peace as state capacity effects, but they have not clearly identified the impact of administrative reach and capacity for coercion from those effects that may capture good governance related to the provision of political goods and quality of institutions. We revisit the relationship between state capacity and civil peace by suggesting three different pathways through which the state avoids violent challenges to its authority: coercion, co-optation and cooperation. We evaluate these three different notions of governing capacity both analytically and empirically, and find that high levels of government spending on political goods and trustworthy institutions are more significant predictors of civil peace than are states' coercive capacities. The results suggest that civil peace is co-produced by social and state forces, where quasi-voluntary cooperation from society increases state capacity for maintaining peace. This is good news for policies aimed at building state capacity since there seems to be room for agency beyond simply waiting for societies to become wealthy.

## 1. Introduction

The recent scholarly literature on the causes of civil war identifies state capacity as an important determinant (Fearon and Laitin 2003). Many argue that a state's inability to penetrate society and regulate social interaction reduce the cost of insurgency for would-be rebels, and that weak states are poor at counterinsurgency. Civil war, thus, is fundamentally about the loss of state monopoly over the use of force. In spite of this central place of state capacity in the literature on civil conflict, the concept remains vague. The ambiguities are partly due to the use of crude empirical indicators that are only related to the concept at a very general level. Many use regime type to measure state capacity and find that semi-democratic regimes correlate with the highest risk of conflict, apparently because they combine inadequate capacity for repression with insufficient ability to accommodate opposition through institutionalized channels (c.f. Mueller and Weede, 1990; Hegre et al., 2001; Reynal-Querol, 2002). In this argument, political institutions proxy two very different notions of state capacity: the ability to coerce the population, which is highest at the authoritarian end of the scale, and the ability to accommodate demands of the population, which is highest in fully democratic regimes. This ambiguity makes regime type a poor indicator for state strength.<sup>2</sup> The same criticism applies to those who argue that the correlation between low income and civil conflict is the effect of state weakness (see Fearon and Laitin, 2003). Economic development is a broad, catch-all measure that is correlated with a variety of aspects of political and economic life, and it does not allow us to fully understand what about wealth relates to state capacity, which is crucial for effective policymaking. How exactly do states manage peace short of becoming rich?

In this paper we revisit the relationship between state capacity and civil conflict. We leave the issue of formal political institutions aside and focus on variations in the governing capacity of states as they correlate with the presence and absence of peace. We suggest three conceptually and empirically different notions of state capacity. These notions signify different

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<sup>2</sup> For an extensive discussion, see Gleditsch and Ruggeri (2007).

ways in which peace might be secured, which can be summarized as coercion, co-optation or cooperation. We proxy coercion as the ability to extract large taxes, co-optation as the relative size of government spending, or level of public goods provision, and cooperation as the degree of trust of economic agents in state institutions. We test these notions of state capacity using a global dataset that cover all onsets of internal armed conflicts between 1961 and 2004. First, we discuss the relationship between state capacity and peace, then discuss the rationale and validity of measurement of the various aspects of state capacity, outline the models and methods and data, present results, and conclude.

## 2. State Capacity and the Onset of Civil War

State capacity has a prominent place in the literature on violence (c.f. Arbetman and Kugler, 1998; Fearon and Laitin, 2003; Buhaug, 2006); the intensity of armed conflict (Benson and Kugler, 1998, Lacina, 2006); and its duration (De Rouen and Sobek, 2004). Some also see state capacity as the main factor behind the explanation linking natural resources to civil war (c.f. Humphreys, 2005; Fearon, 2005). The concept's measurable meaning, however, is ambiguous, and the literature cites multiple mechanisms that link governing capacity to civil peace. Some arguments emphasize the state's capacity to control its population, backed by institutions of coercion, surveillance, and deterrence as decisive (c.f. Herbst, 2000; Tilly, 2003). Others focus on the ability of governments to co-opt support from society for its aims and objectives relative to those who might desist (Bueno de Mesquita et al., 2002). Societal compliance is then contingent on the state's ability to outspend challengers capable of mobilizing rebellion (Azam, 1995; Collier 2000; Gandhi and Przeworski, 2006). Finally, some emphasize a synergistic relationship, where the government's ability to secure the cooperation of the citizenry stems from its credible commitments to safeguard the rule of law, and build institutions that generate trust and accountability (c.f. Fukuyama 2004; Levi, 1988, 2006; North 1990; North, Summerhill, and

Weingast 2000).

In their widely-cited study on civil war, Fearon and Laitin (2003) interpret their finding on income per capita and peace as the result of state capacity. They argue that wealth allows a better tax base for governments to discourage insurgency, since wealth captures the extent of “the state’s overall financial, administrative, police and military capabilities.” In Fearon and Laitin’s scheme, richer states are able to avoid civil war due to greater capacity to monitor, deter and suppress nascent insurgencies. Some others argue that GDP per capita captures a state’s ability to make costly reforms to reduce societal grievances, or simply buy off opposition (Buhaug 2006). This argument is mirrored by others who suggest that wealth raises the opportunity costs of individuals for joining costly rebellions (Collier and Hoeffler 2004). This ambiguity in the interpretation of the correlation between economic development and civil peace illustrates the problem of using such a broad, catch-all, measure in empirical tests of state capacity. In spite of the central place enjoyed by state capacity in the conceptual literature on civil wars, empirical studies that clearly identify the mechanisms of state capacity that matter for peace and test their relative impacts are still rather sparse.

### Three Notions of State Capacity: Coercion, Co-optation and Cooperation

Tilly (2003:41) defines governmental capacity as the extent to which governmental agents control state activities and resources within the government’s territory. In the following section we discern this capacity to control resources and activities along three dimensions. Based on Boulding’s (1989) seminal contribution on the ‘three faces of power,’ we distinguish between threat capacity, economic capacity, and integrative capacity of states. We refer to these three dimensions of state capacity as coercion, co-optation, and cooperation, respectively, as they identify the state’s position vis-à-vis its relations with society, particularly with regard to how it maintains peace and exercises its superior position for arbitration between societal groups.

The first dimension of power in Boulding's (1989) scheme is threat power, which derives from deterrence and the adversaries' fear of retaliation for defection. A corresponding notion of state strength, which emphasizes the citizenry's subordination to coercive force, has a significant place in the literature on civil conflict. State institutions backed by strong police and military capabilities, and with administrative reach into rural areas are essential elements of a government's ability to project its force across the territory and impose order within its jurisdiction (c.f. Herbst, 2000). For example, Fearon and Laitin(2003) argue that the state's military, policing and administrative powers influence the government's ability to monitor, deter, and suppress dissent before it galvanizes into efficient rebel organizations that confront the state with armed force. Collier and Hoeffler (1998) similarly suggest that militarily capable states reduce the opportunity for challengers to form an armed insurgency against the state. Where the government is organizationally weak, it invites sub-national actors to use force to further their agendas and challenge state authority through violence (Tilly, 1985, Job, 1992, Skaperdas, 1992, Bates et al., 2002). Administratively weak states reduce the relative cost of organizing rebellion.

Collier and Hoeffler (1998) and Fearon and Laitin (2003) measure the counterinsurgency capabilities of states using GDP per capita as a proxy.<sup>3</sup> We suggest that the government's capacity to extract resources from society is a less ambiguous proxy for a government's institutional reach and, in turn, the capacity of the state to credibly threaten and coerce. First, the extraction of tax or other revenues is dependent on a certain level of effective state penetration of society. The tax compliance of the population is contingent on there being an efficient administrative apparatus that can monitor the economic activity of the population across the territory, and on coercive institutions that can enforce the transfer of resources from the population to the state (Moore, 2004). Revenue extraction will be low where the state cannot find, nor punish actors that are shirking, or where the government simply lacks the institutional

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<sup>3</sup> Some scholars use direct measures of military capability, such as military expenditures and military personnel, to capture the threat power of the government (c.f. Herbst, 2004, Lacina, 2006). Critics of this approach has argued that these capability measures indicate the power potentials of governments, but not how well the government is able to mobilize and make coherent use of this potential (c.f Gurr, 1988).

infrastructure to reach people for collecting taxes or for other purposes. Successful revenue collection (all other things equal) rests on credible threat of punishment of the defiant. Second, governments rely on revenue to invest in its military, police and bureaucratic apparatus, which in turn allow them to accumulate power for further penetration and extension of state rule (Levi, 1988).

For these reasons, we suggest that the level of revenue extraction reflects the government's capacity for social control, and its ability to deter and suppress violent dissent.<sup>4</sup> Rather than using GDP per capita as a general measure of the tax base available to governments, we adopt a more direct measure of the government's revenue extraction, called relative political capacity (RPC). This measure was initially developed by Organski and Kugler (1980), and compares the actual level of tax revenue extraction to a predicted level of extraction, given the states economic and natural endowments. Its advantage as a proxy for the capacity for social control is that it does not make any assumptions as to whether this capacity is used to pursue socially optimal outcomes. In the words of Organski and Kugler (1980:72) 'highly capable systems need not be free, democratic, stable, orderly, representative, participatory, or endowed with any of the other desiderata alluded to by laymen and experts as bases for evaluating the political life of a nation'. Kugler et al (1998) use RPC in a very simple model predicting political violence and find that states with high capacity reduce the risk. We will not take up all the idiosyncrasies in their study but only revisit the issue using more standard models of civil war that satisfy criteria addressing issues of spurious findings more thoroughly. Thus, we test the following hypothesis:

*H1: The higher the state's capacity for revenue extraction from the economy, the lower is the risk of civil conflict.*

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<sup>4</sup> This link between revenue extraction and state capacity is apparent in the 'resource curse' literature, which holds that oil predicts armed conflict because states with 'unearned' income from oil have weak state apparatuses (c.f. Karl 1997; Fearon and Laitin 2003).

The establishment of a strong coercive power that can impose order from above is the Hobbesian solution to civil peace. Alternatively, governments can create compliance by co-opting political opposition and retain loyalty from key segments of society through spending on political goods (Levi 2006). Several scholars discuss the trade-off between creating strong institutions for social control versus relying on economic transfers that reduce incentives to rebel (Azam, 1995, 2001; Gandhi and Przeworski, 2006). In the words of Levi (2006: 9) one of the central challenges of creating capable governments is to ‘offer powerful constituents enough in the way of benefits to retain their loyalty and to desist from violent predation’. Governments that give back to society win compliance, which underpins our second notion of state capacity. This view corresponds to Boulding’s concept of economic power, which derives from the capacity to offer the adversary something he values in return for his compliance (1989: 27). With regard to the state’s ability to bargain with restive groups, economic capacity can allow states the power to buy compliance through redistribution by way of high levels of public spending on political goods.

Bueno de Mesquita et al. (2003) point out that spending decisions are strategic responses by the government in relation to maintain an unchallenged position in power. In their scheme, high levels of government expenditures indicate that the political leadership dedicates the revenues they collect to improve the lot of the society, rather than spending them on kleptocratic institutions for personal enrichment (ibid: 130 ff.). We expect that governments that spend much of the state’s revenue to reward to their supporters enjoy higher levels of support from the citizenry than governments that spend less, *ceteris paribus*. Public spending can be used to retain allegiance and integrate broader segments of the population into the power base of the regime. The ability to control a larger share of output, or a state’s economic capacity, increases its

counterinsurgency capacity by enhancing its ability to placate restive groups and reduce the support for actors that may challenge the government.<sup>5</sup>

Through redistributive effects, government spending on political goods, such as health, education, development etc. can enhance the situation of marginalized groups. Economic capacity can thus increase the state's bargaining power vis-à-vis potential challengers, by addressing grievances that motivate individuals to join a rebellion (Azam, 1995; 2001). Buhaug (2006) similarly suggests that the ability of wealthy states to allocate money to costly reforms in order to reduce the grievances of marginalized groups or simply buy off opposition reduces the risk of conflict. This argument is in line with Thyne's (2006) finding of a pacifying effect of government investment in education. He suggests that there is both an indirect link from educational investment to civil peace, working via economic growth and lower inequality, as well as a direct link stemming from the positive effects of education, for example on social mobility, labor opportunities etc. Insurgents compete with governments for labor and taxes. Governments that can allocate resources in a strategic manner to retain political support from oppositional groups can raise the costs of rebel labor. Hence, where government share of total consumption in society is high, governments might effectively outspend rebel groups.

It is often noted that high government spending does not necessarily mean more efficient allocation of public goods, such as health and education, but may contain a high degree of rents to powerful constituents (c.f. Bueno de Mesquita et al. 2002, 2003; Azam, 2001). The policy choice between providing public goods, which enhance public welfare, and private goods, with which to reward favored citizens, is not disclosed in an aggregate measure of government spending. A strategic allocation of state patronage, in the form of government construction contracts, public employment or economic transfers, might buy support for the government from powerful segments of the population and placate restive groups (c.f. Acemoglu et al. 2004,

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<sup>5</sup> Rodrik (1997) makes a similar argument about the nature of government spending during the post-War years as a feature of 'embedded liberalism,' where increased public goods and social protection bought social peace.

Bratton and Van de Walle, 1997). In line with the above argument we expect government expenditure with a strong redistributive component to attract support from a larger constituency and thus have a stronger effect on inducing peace. We return to this issue in the empirical section.

To sum up, a high threshold for violent challenges to state authority might rest on co-optation, rather than coercion from the government's side. Where the government controls a large share of the society's wealth, it can use spending strategically to placate segments of the population. The argument that governments can budget for peace through high levels of public expenditure leads to the following expectation.

*H2: The higher the share of government expenditure to GDP, the lower the risk of civil war*

Securing the compliance of the population is a lot cheaper where the quality of governance allows the people to trust the leadership rather than hinge on force or large economic transfers (c.f. Levi 2006; Keefer, 2008). Boulding's (1989) third notion of power speaks to this dimension: integrative capacity stems from the ability to develop legitimacy and to invoke relations of loyalty and trust to secure the cooperation of societal actors and groups. According to North, Summerhill, and Weingast (2000: 17), 'the sources of political order involve state capacity concerning the creation of credible commitments.' As Weingast (1993) has written, the fundamental dilemma of an economy is that a government strong enough to protect property can also easily take those rights away. Thus, market order, like political order has to be created by rulers who can credibly commit not to steal.

In the government's relation with the citizenry, high integrative capacity follow where the citizenry trusts the state to be an impartial enforcer of the societal contract; to uphold property rights; to be an effective regulator of social exchange; and exercise public authority in a way that is not biased towards particular segments of society. The state's integrative power builds

on the government's capacity for social control, but primarily derives from governmental capacity to provide credible commitments to the population that it will not use this force against them (Olson, 2000; Levi, 2006). In essence, a good state that people trust needs no excessive counterinsurgency apparatus since people trust the institutions, where information is not asymmetrical, and where institutions safeguard the long-term productive investments of society. As North, Summerhill, and Weingast (2000: 51) write, 'everything is at stake in a society without basic agreement about the rights or the rules governing economic and political choice. Citizens in such a society devote most of their resources to fighting one another, and the society is characterized by conflict, turmoil, political disorder, and economic contraction.'

To test this argument, we use a measure of the population's perception of property rights and contract enforcement, or, more generally, of their trust in state institutions. Protection of property rights is a public good, and its enforcement rests on the coercive capability of the contract enforcer (Olson 2000). However, since this coercive capacity also makes the enforcer the largest probable threat to society, trust in the state not to overstep its boundaries is a critical dimension of secure property rights and whether or not extensive markets prevail. The measure is suggested by Clague et al. (1999) and denotes the share of money that is held in saving deposits and in legal paper, not in currency, relative to the total money supply. It measures the extent to which people trust institutions to be a credible guarantor of property rights and contracts, so that individuals are willing to hold their assets via financial intermediaries.<sup>6</sup> Where the share of contract intensive money is high, states are perceived by society as fair and unbiased arbitrators of contracts, and are trusted not to abuse their unique position of power. On the basis of this reasoning, we test the following hypothesis:

*H3: The higher the level of contract intensive money in society, the lower the risk of civil conflict.*

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<sup>6</sup> In a related application, Mousseau and Mousseau (2008) focus on contract-rich environments in terms of market norms. Using the density of life insurance contracts, they find that contract-rich environments (trust in institutions) associates with less state repression because of the diffusion of 'economic norms' that shun high-handed state behaviour.

### 3. Research Design and Data

#### *The Dependent Variable*

As our dependent variable, we use data from the UCDP/PRIO Armed Conflict Dataset v.4-2006b (Gleditsch et al. 2002, Harbom and Wallensteen, 2006).<sup>7</sup> An intrastate armed conflict is defined as a contested incompatibility between a government and one or more opposition groups that results in at least 25 battle deaths in a year. The onset of intrastate armed conflict is a dichotomous variable taking on the value ‘1’ if there is an outbreak of conflict in the country year, and ‘0’ otherwise. We also use an alternative specification of the dependent variable where we only include those intrastate armed conflicts that, during at least one of its active years, result in at least 1000 annual battle deaths. The onset of a major armed conflict is also a dichotomous variable, coded as ‘1’ in the year a conflict breaks out, and ‘0’ in years with peace. For both specifications of the dependent variable, we drop all country years of ongoing conflict from the dataset. In case of a discontinuous event, we code a new onset if the conflict falls below the casualty threshold for two consecutive years.<sup>8</sup>

#### *Independent Variables*

Our main indicator of the extractive capacity of the government is *Relative Political Capacity* (RPC). This is a fiscal measure that assesses the government’s efficiency at extracting resources from the population, compared with other states with similar resource endowments and level of development. The measure is the ratio of extracted taxes relative to the expected taxes given a certain set of economic characteristics (Arbetman and Kugler 1998). The method accounts for the level of development and for the presence of revenue sources that do not depend on controlling people, such as resource endowments and taxation on imports and exports, so that

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<sup>7</sup> See also the Uppsala Conflict Data Program webpage found at [www.ucdp.uu.se](http://www.ucdp.uu.se)

<sup>8</sup> The dataset structured for quantitative analysis was downloaded from <http://new.prio.no/CSCW-Datasets/Data-on-Armed-Conflict/UppsalaPRIO-Armed-Conflicts-Dataset/>. For more detailed information about the coding of the two onset variables see the accompanying document on the same webpage.

the actual extracted taxes capture the level of penetration of the society by the state. A Relative Political Capacity score above 1 implies that the state is able to extract more resources than one would expect from its level of income, while a score lower than 1 implies that the state is extracting less than would be expected. Data are from an ongoing data collection effort by Johnson and Arbetman Rabinowitz (2005).

We use *Government Expenditure/GNI* as an indicator of the economic capacity of governments. Government expenditure/GNI measures the share of wealth controlled by the government relative to the rest of society. It includes all government current expenditures for purchases of goods and services (including compensation of employees). It also includes some expenditure on national defense and security, but excludes government military expenditures that are part of government capital formation. The data are reported as share of gross national income, and are available annually from 1965 to 2006 from the World Bank's World Development Indicators (World Bank, 2007). We have taken the log of government expenditure to reduce the effect of very high values.

Our proxy for the integrative capacity of government is the level of *Contract Intensive Money (CIM)* in society. This is a measure of “the enforceability of contracts and the security of property rights” adopted from Clague et al (1999). CIM is defined as the ratio of non-currency money to the total money supply, or  $(M2-C)/M2$ , where M2 is a broad definition of the money supply and C is currency held outside of banks in the form of contracts, promissory notes etc. Data is from the International Financial Statistics (2007) obtained from the International Monetary Fund. The intuition behind CIM is that characteristics of third party contract enforcement explain individuals' and firms' preferences regarding the form in which they choose to hold their assets. People choose to have their money in banks only if they trust the bank to return the money when asked. The measure ranges between 0 and 1, and the higher the level of contract intensive money, relative to the total money supply, the higher is the trust in government institutions.

The three notions of state capacity suggested above are clearly not mutually exclusive. States that are able to extract more income should also be able to spend more of it on society, and have better institutions. The intercorrelation among these variables show that it is government spending and RPC that are significantly correlated at  $r = 0.46$ , whereas CIM and government spending and CIM and RPC show correlation of  $r = 0.19$  and  $r = 0.09$  respectively.

### *Control Variables*

We control for spurious relationships by including a set of control variables that previous research has found to be empirically related to governing capacity of states and to civil conflict, and which we do not think are simply intervening variables in this relationship. Some previous studies have interpreted the relationship between GDP per capita and civil peace as a state capacity effect. Our three core independent variables are also positively correlated with economic development. To parse out the effect of income from the effect of these variables, we control for GDP per capita using the expanded GDP dataset v.5.0 from Gleditsch (2002).<sup>9</sup> We also include a control for population size, which is also obtained from Gleditsch (2002). Larger countries are likelier to have a weaker state presence across the territory (c.f. Herbst, 2000). Previous research has established that more populous countries have a higher risk of civil conflict (c.f. Hegre and Sambanis, 2006). For both variables we take the natural log of the estimate to reduce the effect of extreme values.

We control for the effect of regime type by including a dummy variable for inconsistent regimes, i.e. regimes that mix democratic and autocratic institutions. These regimes seem to be particularly prone to corruption and low quality of governance (c.f. Keefer, 2007). Previous research has also found these polities to have the highest likelihood of civil conflict, compared to consistent democratic and autocratic systems (Hegre et al. 2001; Fearon and Laitin, 2003). We rely on data from the Polity IV project (Gurr, Jagers, and Moore, 1989) and define

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<sup>9</sup> The data, now updated to 2004, are available at <http://privatewww.essex.ac.uk/~ksg/exptradegdp.html>

inconsistent regimes as those that fall between -5 and 5 on the 21 point Polity scale.

Previous studies have linked ethnic fractionalization to lower level of public goods provision (e.g. Easterly and Levine 1997; Alesina and La Ferrara 2005) and to armed conflict (Wiesehomeier and Schneider 2008). We control for ethnic diversity using the ethnic fractionalization index (ELF), which ranges between 0 and 1 and denotes the probability that two randomly drawn people in a country belong to the same group (Fearon and Laitin, 2003). We also include its squared term to model arguments about ethnic polarization, where the risk of conflict is supposed to be highest when society is composed of roughly two equally-sized groups (Esteban and Ray 2008).

Finally, we include a control for whether or not a country is an oil-exporter. Resource wealth has been argued to lead to weak states because of the easy access to revenue. Apparently, easy money from resources leads to administratively underdeveloped states as rulers do not have to build institutions of extraction (Karl 1997). Many empirical studies show a positive connection between oil wealth and civil conflict (c.f. de Soysa 2002, de Soysa and Neumayer 2005; Fearon and Laitin, 2003; Ross, 2006). Thus, we control for oil exports by including a dummy variable that is assigned the value of 1 if the state has more than 1/3 of its exports earnings from oil, and 0 otherwise. The original variable is from Fearon and Laitin (2003), and the variable is updated to 2004 using the World Development Indicators.

To address the problems associated with temporal dependence in time series cross-section analysis, we add a variable that records the time since the last onset of armed conflict, or in the case of no conflict, the time since the first observation of the country in our dataset. Since the legacy associated with a previous armed conflict is likely to be non-stationary we specify this variable as a decay function. The function of time that has passed without conflict is given by 2 to the power of  $-(\text{time since last onset of conflict}/\alpha)$  where  $\alpha$  is the half-life parameter (Raknerud and Hegre, 1997). After comparing the log-likelihood of different models we choose a functional form where the influence of last conflict decays over time with a half life of 2 years.

## 4. Results

Table 1, Models 1-3 report the results of logit regressions of the risk of the onset of intrastate armed conflict (>25 battle deaths) as a function of our three indicators of government capacity.<sup>10</sup> In Model 4-6 we restrict our sample and only look at intrastate armed conflicts of the higher intensity level (>1000 battle deaths). We start from a simple model, which includes no control variables except a decay function to account for temporal dependence between observations. The results support the three hypotheses. The coefficient estimates of relative political capacity, government expenditure, and contract intensive money predict the onset of conflict negatively, results that are statistically highly significant.

TABLE 1 ABOUT HERE

The results reported in Table 1 support our hypotheses that link higher state capacity to a lower risk of civil conflict, but the results ignore factors that impact both our independent and dependent variables. In Table 2, Model 1-3 we report the results from regressing the onset of low level armed conflict on our three indicators of state capacity, this time including the relevant control variables. We begin with RPC, or the coercive capacity of states to control threats. The results reported in Model Table 2, 1 do not lend any support to our first hypothesis. The level of relative political capacity has no significant relationship with the risk of an onset of civil conflict in the full model. High capacity for social control, as proxied by the government's ability to extract revenue seems to have little predictive power for the risk of civil conflict, net of the controls. Thus, we are not able to corroborate the results reported by Kugler et al (1998).

TABLE 2 ABOUT HERE

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<sup>10</sup> All estimations are conducted using STATA 10 (StataCorp, 2007).

In Model 2, we proceed by examining the relationship between economic capacity and the risk of armed conflict. We find a statistically significant, albeit weak, result for the expectation that high levels of government expenditure are associated with a reduced risk of armed conflict ( $p=.084$ ). Holding all the other variables at their median value, a shift from the 5<sup>th</sup> to the 95<sup>th</sup> percentile value on government spending, i.e. from approximately 7% to 27% share of government expenditure to GDP, reduces the annual predicted probability of conflict from 3.1% to 1.7%, i.e. the risk almost halves.<sup>11</sup> The substantive impact of government consumption is thus not negligible. For comparison; moving from the 5<sup>th</sup> to the 95<sup>th</sup> percentile value for GDP pc, i.e. from approximately 700 dollars to 22 000 dollars, reduces the annual predicted risk of civil conflict from 4.8% to 1.2%, or by roughly 75%. The results on government spending mirror those on education spending reported by Thyne (2006). This result suggests that net of the level of wealth governments can have a substantial impact on peace by budgeting for it.<sup>12</sup>

Looking at Model 3, we also find support for the expectation that property rights protection and credible state institutions reduce the risk of intrastate armed conflict. The estimated effect of CIM is negative and statistically significant ( $p=.045$ ), when looking at armed conflicts that have reached at least 25 annual battle deaths. Raising CIM from the 5<sup>th</sup> percentile to the 95<sup>th</sup> percentile while holding all other variables at their median values, reduces the annual predicted percentage probability for a country year onset by 54%, from 4.1 to 1.9%. This result supports the view that governments that build institutions that allow people to trust the power of the state not to be arbitrary, raises the costs of conflict. States that oblige themselves to play by the rules do not jeopardize the cause of peace. On the contrary, people who are free to contract and trust institutions seem also not to have cause for serious quarrels.

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<sup>11</sup> Predicted probabilities are estimated using the Clarify software program (King, Tomz, and Wittenberg, 2000) .

<sup>12</sup> This result is robust to controlling for relative political capacity. When RPC is entered into the model, the estimated effect of government expenditure remains negative and significant for both specifications of the dependent variable. ( $p=.062$  and  $p=.030$ , respectively) Hence, the result for government expenditure is not simply mirroring the possibility that governments that are more efficient extractors are also higher spenders.

In Table 2, Model 4 through 6, we limit our attention only to those intrastate armed conflicts that, during at least one of its active years, resulted in at least 1000 battle deaths. The results largely mirror what we find for conflicts of lower intensity. When including the relevant control variables, the estimated effect of relative political capacity fails to attain significance also for this subset of conflicts (Model 4).<sup>13</sup> In line with theory, the coefficient for government expenditure is negative and significant ( $p=.01$ ) (Model 5). This indicates that for given levels of income, governments that control a larger share of society's resources have a lower risk of civil conflict. Also the estimated effect of contract intensive money is negative and significant ( $p=.01$ ) (Model 6).<sup>14</sup> Compared with substantive impacts when using the lower threshold of conflict, the predicted impact of both variables increases in magnitude. Moving from the 5<sup>th</sup> to the 95<sup>th</sup> percentile on the government-spending variable, while keeping all other variables at their median values, reduces the predicted risk of conflict by 75%, and the same exercise with using CIM decreases the risk by 76%.

The results reported for the control variables deviate from previous research in one significant respect. When we examine the association between civil conflict and CIM (Table 2, Model 3 and 6), GDP per capita loses statistical significance. Previous studies have found income to be one of the most robust predictors of civil peace (c.f. Hegre and Sambanis, 2006). This is not only due to the sample per se, since GDP pc is significant once CIM is dropped from the model, though retaining the exact same cases. While we know that the two variables are correlated, post-regression diagnostics do not indicate that multicollinearity is a problem (VIF=2.35). This may suggest that much of the effect of income reported previously works through good institutions.

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<sup>13</sup> In an alternative specification of the model, we use the ratio of Tax revenue to GDP, i.e. an absolute measure of revenue extraction, as an alternative indicator of threat capacity. (Also this data is from Johnson and Arbetman Rabinowitz (2005).) This variable is negative and significant for major conflicts ( $p=.077$ ). The theoretical intuition behind including this measure is similar to that of RPC, but this measure does not capture how well the government is able to realize its revenue potential, relative to other states of similar endowments.

<sup>14</sup> None of the results reported are sensitive to applying a five-year rule, rather than a two-year rule, for defining a new conflict onset in the case of a discontinuous conflict episode. When using the latter criterion, also relative political capacity is negatively associated with high intensity conflicts, and is significant at the .05 level.

We find some illustrative evidence by examining some concrete cases in the data that our proxy for impartial and credible state institutions, CIM, could capture variations in governance that are not picked up by simply looking at the level of economic development. For example, Tanzania, Benin, Gambia, Malawi, Kenya and Mozambique (during the last decade), are all examples from Africa of generally peaceful countries that score above the 25<sup>th</sup> percentile on our measure of contract intensive money, but has per capita income at the lowest 25<sup>th</sup> percentile. The opposite relationship holds for the conflict-ridden Cote d'Ivoire, Sierra Leone, Congo Brazzaville and Algeria, which are generally richer but score within the lowest 25<sup>th</sup> percentile on CIM in the periods leading up to the countries civil conflict.

The results for the rest of control variables are consistent with the findings in previous literature. In all the remaining models, economic development is significantly associated with a lower risk of an outbreak of internal armed conflict. We find consistently across all models, that more populous countries have a higher risk of experiencing armed conflict. Our results also support those studies finding that semi-democratic polities have a higher risk of civil conflict, compared to autocratic and democratic polities. We also find evidence, in a majority of the models, for a curvilinear relationship between ethnic fractionalization and the onset of armed conflict. The estimated effect for being an oil-exporting county is positive across all models, though only significant in some. The estimated effect for the brevity of peace is not consistent across the models. Considering all conflicts, the estimate is negative and significant in two of the three models. This suggests that the risk of recurring conflict is increasing with time that has passed since the last incidence. For the major civil conflicts the estimates are even less robust, but the opposite seems to hold.<sup>15</sup>

Looking beyond the individual findings, the results corroborate the notion that managing civil peace is not simply about 'extractive capacity' and state coercive capabilities through administrative reach. Our results suggest that the presence of impartial and credible state

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<sup>15</sup> The results are virtually identical if we replace the decay function with a count variable of the years since last incidence of conflict and three cubic splines, as suggested by Beck, Katz and Tucker (1998).

institutions, as proxied by our measure of contract intensive money, has significant negative effects on the onset of civil war, results which offer support for the neo-institutional proposition that credible state institutions dispel uncertainty and thereby generate social peace. A high contract environment may also signify a high degree of social capital and all its attendant effects on society, including what some have referred to as ‘market norms’ that constrain excessive government (Mousseau and Mousseau 2008). Large governments, in terms of government consumption, also reduce the risk of civil war onset, net of the effect of per capita income. Whether or not these effects come from the provision of public goods alone, such as education, or whether in fact it reflects patterns of patronage spending is fertile ground for future empirical work on the linkages between public spending and state capacity. We turn next to checking the robustness of our main findings.

#### *Extending the analysis*

While the results reported above are mostly in line with the theoretical expectation and consistent with previous research, there are some issues that should be explored further. As discussed above, our aggregated measure of government spending does not disclose how public resources are allocated between private and public goods. If, however, the pacifying effect of government spending works primarily through the public goods component of such policies, we should expect government spending to be a stronger predictor of civil peace in political systems that reduce the incentives for politicians to offer personal privileges to reward supporters, and instead encourage the generation of public goods. Executives that operate in strong institutional environments with constitutional checks and balances should face higher barriers to private rent seeking and to diverting government funds to their cronies (Keefer and Knack, 2007). To model this expectation we create an interaction effect between government spending and a measure of executive constraints from the Polity dataset.<sup>16</sup> The results are reported in Table 3, Model 3 and

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<sup>16</sup> Both variables are centred to facilitate a meaningful interpretation of the component variables. In an interaction

4. In the first model, where we look at all onsets, the interaction term is negative and significant, suggesting that the pacifying impact of government expenditure is accentuated by high levels of executive constraints. In Model 2, where we look only at the high intensity conflicts, the interaction effect is still negative, but drops below significance ( $p=.19$ ). The negative and significant coefficient for government spending across both models refers to the effect when the variable executive constraints is at the sample mean. In sum, these findings lend some tentative support to the conclusion that it is the public goods component of government spending that is associated with civil peace.

Next, we consider the relative effects of our independent variables that proved significant in the above models. Uneven patterns of missing data across our main independent variables pose particular problems for comparing the results, since the sample size is reduced.<sup>17</sup> To address this problem we employ a procedure referred to as ‘modified zero order regression’ (Greene, 2003: 429-431), where missing values are replaced with zeros, and a dummy variable indicating the missing observations is added to the specification.<sup>18</sup> We do this replacement for government expenditure and contract intensive money. We replicate our main findings from table 2, model 4 – 6, this time also controlling for the cases where we have no data on our main independent variables. Next, we compare the relative effects of government expenditure and CIM. The results, reported in Table 3, Model 3 and 4, suggests that government expenditure remains a significant predictor of civil peace using both operationalizations of the dependent variable. The level of contract intensive money has no significant effect on civil conflict, using the 25 battle deaths criteria, once we also control for government expenditure. Restricting the sample to conflicts that have claimed at least 1000 battle deaths in one year, the level of contract intensive money remains a significant indicator of peace, even when controlling for government

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model the component term refers to the effect of the variable when the other variable is zero.

<sup>17</sup> For government expenditure we have data on approximately 82% of the country year observations on which we have conflict data and data on the control variables. For contract intensive money the corresponding number is approximately 75%.

<sup>18</sup> This is algebraically identical to replacing the missing observations with the variable’s mean.

expenditure. GDP pc is significant in model 3, suggesting that the pacifying effect of economic development is more robust in this full sample compared with the one examined in our earlier models. In model 4, GDP pc comes close to statistical significance ( $p=.107$ ).

The question of how our core independent variables themselves are related to societal dynamics that precipitate state failure and armed rebellion is a second concern. In particular, we should consider how the level of contract intensive money is influenced by escalatory dynamics leading up to civil war. The anticipation of armed conflict should have an impact on people's perceptions about the future, which means that people will prefer greater liquidity if they fear social stability will break down. We have tried to deal with this by lagging the independent variables<sup>19</sup>, which is only a partial solution, but we also censor the dependent variable and include the history of civil conflict to mitigate bias due to endogeneity. Furthermore, we added a variable for political instability, operationalized as a change larger than 3 on the Polity index during the three preceding years. The results remain the same, and political instability is not significant. Future work could use instrumental variables techniques to probe the issue of endogeneity further, but the issue of valid instruments will remain a thorny problem.

In a similar manner, there is a possibility that military spending, which is part of government consumption, drives our result: where conflict is anticipated, the priorities of government expenditure shift into the military sector and increased coercion, which may reduce the risk of conflict. When we enter data on military spending from the World Development Indicators, we lose 20 years and more than half of our observations. In this sample, government spending is insignificant, without the control for military expenditure. When we regress our measure of government consumption on military expenditure to GDP we obtain an  $R^2$  of 0.09, or roughly 9 percent of the variance. Thus, very little of the government expenditure we estimate in our models seems to relate to military spending, or preventive militarization. In any case, most studies find that military spending does not prevent conflict, even after accounting for

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<sup>19</sup> Introducing a two-year time lag on our core independent variables, instead of a one-year lag as in the present analysis, render the results unchanged.

endogeneity (Collier and Hoeffler 2006).

In addition to country-level dynamics, our core independent variables could also be influenced by neighborhood factors. Previous research has found that states that neighbor armed conflicts have a higher risk of conflict (Sambanis, 2001, 2002; Gleditsch 2007), and that this clustering of conflict cannot simply be attributed to the spatial clustering of the determinants of conflict (Gleditsch and Buhaug, forthcoming). To account for the possibility of such spillover effects, working via domestic level governance variables, we include a dummy variable taking the value of unity if there is an ongoing conflict in a neighboring county the year prior to the onset of conflict. The variable is taken from Gleditsch (2007) and builds on the UCDP/PRIO dataset. None of the results reported above are sensitive to this control variable.

## 5. Conclusion

Despite the central role enjoyed by the concept of state capacity for predicting peace, few studies have systematically tried to disaggregate it and empirically test the different conceptions of governmental capacity to avoid civil war. We have situated governmental capacity along Kenneth Boulding's three conceptual faces of state power, namely, a state's threat capacity, economic capacity, and integrative capacity, which we interpret as coercive capacity, capacity to co-opt social compliance, and capacity for forging social cooperation. Do states avoid civil war because of their extractive capability, their ability to coerce populations? Or do states gain quasi-voluntary compliance from society by providing public goods and the ability to buy compliance, or yet again do states that provide credible commitments through good institutions integrate society in a way that violence is avoided?

We empirically tested measures constructed by others that capture these visions of state capacity. Relative to the extractive capacity of states, high government spending and good institutions matters for predicting peace, independently of the level of income. The effect of

public spending is net of economic wealth, democracy etc., with which it is closely associated. Our results also tentatively suggest that the pacifying effect of public spending is more salient in institutionally strong environments with constitutional constraints on the executive. Relative to other factors also often tested in models of civil war, we do find that contract intensive money (CIM), which proxies good institutions, contributes to peace.

The results suggest that looking at peace as co-produced, and not just emanating from the coercive ability of states, is useful. We conclude like others that good governance is obtained by states that are able to elicit ‘quasi-voluntary cooperation’ from society by credibly committing to providing collective goods, including good institutions that provide secure guarantees of fair third-party arbitration by the state and oblige states to control themselves (Levi 2006; North 1990). States that also pay a larger share of the productive assets of society back in the form of state spending seem to manage peace much better than those that simply have more coercive capacity for collecting a super-normal amount of taxes. Our results support the contention that states may have quite a few options for increasing capacity and for raising the costs of violent dissent. This is good news for policy that seeks to target aid and other forms of assistance for increasing the ability of poor states to avoid conflict.

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TABLE I: Relative Political Capacity, Government Spending, Contract Intensive Money and the Onset of Armed Conflict.

|   | (1)                  | (2)                  | (3)                  | (4)                  | (5)                  | (6)                  |
|---|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
|   | All                  | All                  | All                  | Major                | Major                | Major                |
|   | Conflicts            | Conflicts            | Conflicts            | Conflicts            | Conflicts            | Conflicts            |
| RPC <sub>t-1</sub>                        | -0.632**<br>(0.265)  |                      |                      | -1.046**<br>(0.413)  |                      |                      |
| Government expenditure <sub>t-1,log</sub> |                      | -0.822***<br>(0.258) |                      |                      | -1.363***<br>(0.350) |                      |
| CIM <sub>t-1</sub>                        |                      |                      | -2.316***<br>(0.573) |                      |                      | -2.966***<br>(0.734) |
| Brevity of Peace                          | 0.141<br>(0.306)     | 0.429<br>(0.305)     | -0.323<br>(0.344)    | 0.661<br>(0.560)     | 1.468***<br>(0.564)  | 0.505<br>(0.585)     |
| Constant                                  | -2.969***<br>(0.286) | -1.468**<br>(0.656)  | -1.791***<br>(0.400) | -3.624***<br>(0.388) | -1.242<br>(0.889)    | -2.433***<br>(0.532) |
| Observations                              | 3719                 | 3875                 | 3839                 | 3932                 | 4069                 | 4055                 |
| Countries                                 | 106                  | 146                  | 135                  | 107                  | 148                  | 136                  |
| Conflicts                                 | 103                  | 106                  | 112                  | 41                   | 40                   | 44                   |

Robust standard errors in parentheses. Model 1-3 are based on the UCDP/PRIO conflict list > 25-battle deaths.

Model 4-6 are based on the UCDP/PRIO conflict list >1000 battle deaths.

\* significant at 10%; \*\* significant at 5%; \*\*\* significant at 1%

TABLE II: Logit Analyses of Relative Political Capacity, Government Spending, Contract Intensive Money and the Onset of Armed Conflict.

|   | (1)                  | (2)                  | (3)                  | (4)                  | (5)                 | (6)                  |
|---|----------------------|----------------------|----------------------|----------------------|---------------------|----------------------|
|   | All                  | All                  | All                  | Major                | Major               | Major                |
|   | Conflicts            | Conflicts            | Conflicts            | Conflicts            | Conflicts           | Conflicts            |
| RPC <sub>t-1</sub>                        | -0.193<br>(0.253)    |                      |                      | -0.569<br>(0.434)    |                     |                      |
| Government expenditure <sub>t-1,log</sub> |                      | -0.515*<br>(0.298)   |                      |                      | -1.134**<br>(0.442) |                      |
| CIM <sub>t-1</sub>                        |                      |                      | -1.640**<br>(0.820)  |                      |                     | -2.827***<br>(1.094) |
| GDP pc <sub>t-1,log</sub>                 | -0.380***<br>(0.117) | -0.412***<br>(0.133) | -0.179<br>(0.147)    | -0.502***<br>(0.174) | -0.463**<br>(0.200) | -0.217<br>(0.232)    |
| Population <sub>log</sub>                 | 0.226***<br>(0.080)  | 0.252***<br>(0.086)  | 0.236***<br>(0.074)  | 0.228**<br>(0.096)   | 0.296**<br>(0.116)  | 0.400***<br>(0.105)  |
| Inconsistent regime <sub>t-1</sub>        | 0.473**<br>(0.234)   | 0.450*<br>(0.242)    | 0.566**<br>(0.220)   | 0.568*<br>(0.337)    | 0.652**<br>(0.329)  | 0.662*<br>(0.340)    |
| Ethic fractionalization                   | 4.132**<br>(1.684)   | 5.200***<br>(1.647)  | 2.998*<br>(1.671)    | 4.289<br>(2.820)     | 7.573**<br>(3.047)  | 3.288<br>(2.831)     |
| Ethnic fractionalization sq.              | -3.805**<br>(1.940)  | -4.978***<br>(1.791) | -2.321<br>(1.942)    | -4.316<br>(3.315)    | -8.228**<br>(3.472) | -2.988<br>(3.289)    |
| Oil exporter                              | 0.426<br>(0.271)     | 0.464*<br>(0.268)    | 0.157<br>(0.281)     | 0.572*<br>(0.333)    | 0.809**<br>(0.325)  | 0.501<br>(0.316)     |
| Brevity of peace                          | -0.573*<br>(0.312)   | -0.179<br>(0.334)    | -0.744**<br>(0.340)  | 0.225<br>(0.568)     | 0.960*<br>(0.577)   | 0.263<br>(0.597)     |
| Constant                                  | -3.316***<br>(1.250) | -2.364<br>(1.448)    | -3.867***<br>(1.240) | -3.105<br>(1.946)    | -2.258<br>(2.431)   | -5.448**<br>(2.133)  |
| Observations                              | 3588                 | 3592                 | 3538                 | 3790                 | 3777                | 3743                 |
| Countries                                 | 105                  | 141                  | 129                  | 107                  | 143                 | 131                  |
| Conflicts                                 | 99                   | 96                   | 103                  | 41                   | 40                  | 43                   |

Robust standard errors in parentheses. Model 1-3 is based on the UCDP/PRIO conflict list > 25-battle deaths.

Model 4-6 is based on the UCDP/PRIO conflict list >1000 battle deaths.

\* significant at 10%; \*\* significant at 5%; \*\*\* significant at 1%

TABLE III: Additional Models, Logit Analyses of Government spending and Contract Intensive Money.

|   | (1)<br>All<br>Conflicts | (2)<br>Major<br>Conflicts | (3)<br>All<br>Conflicts | (4)<br>Major<br>Conflicts |
|---|-------------------------|---------------------------|-------------------------|---------------------------|
| CIM <sub>t-1</sub>                        |                         |                           | -1.002<br>(0.769)       | -1.849*<br>(0.956)        |
| Government expenditure <sub>t-1,log</sub> | -0.533*<br>(0.297)      | -1.196***<br>(0.406)      | -0.601**<br>(0.289)     | -1.061**<br>(0.415)       |
| Expenditure * Constraints                 | -0.246*<br>(0.142)      | -0.254<br>(0.195)         |                         |                           |
| Executive Constraints                     | 0.032<br>(0.060)        | -0.045<br>(0.085)         |                         |                           |
| GDP p <sub>Ct-1, log</sub>                | -0.446***<br>(0.142)    | -0.432**<br>(0.205)       | -0.257*<br>(0.136)      | -0.315<br>(0.195)         |
| Population <sub>log</sub>                 | 0.250***<br>(0.085)     | 0.290**<br>(0.120)        | 0.209***<br>(0.074)     | 0.285***<br>(0.100)       |
| Inconsistent regime <sub>t-1</sub>        |                         |                           | 0.604***<br>(0.215)     | 0.780**<br>(0.312)        |
| Ethic fractionalization                   | 5.028***<br>(1.652)     | 7.265**<br>(3.026)        | 4.229***<br>-3.655**    | 4.950*<br>-4.789          |
| Ethic fractionalization sq.               | -4.542**<br>(1.787)     | -7.583**<br>(3.316)       | -3.655**<br>(1.779)     | -4.789<br>(2.997)         |
| Oil exporter                              | 0.463*<br>(0.267)       | 0.738**<br>(0.343)        |                         |                           |
| Brevity of Peace                          | -0.050<br>(0.347)       | 1.288**<br>(0.613)        | -0.426<br>(0.303)       | 0.861*<br>(0.493)         |
| Missing government exp.                   |                         |                           | -1.258*<br>(0.748)      | -2.328**<br>(1.043)       |
| Missing CIM                               |                         |                           | -0.315<br>(0.671)       | -0.749<br>(0.901)         |
| Constant                                  | -3.375**<br>(1.361)     | -5.316**<br>(2.235)       | -2.269*<br>(1.363)      | -2.091<br>(2.142)         |
| Observations                              | 3548                    | 3734                      | 4207                    | 4424                      |
| Countries                                 | 140                     | 141                       | 147                     | 149                       |
| Conflicts                                 | 94                      | 39                        | 118                     | 50                        |

Robust standard errors in parentheses. Model 1 and 3 are based on the UCDP/PRIO conflict list > 25-battle deaths. Model 2 and 4 are based on the UCDP/PRIO conflict list >1000 battle deaths.

\* significant at 10%; \*\* significant at 5%; \*\*\* significant at 1%