State Capacity and Recurring Civil Conflicts*

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Abstract: The impacts of extractive capacity upon recurring civil conflicts are non-linear and conditional. This relationship is determined by three mechanisms that run in opposite directions. In the long run, stronger state capacity is expected to make military rebellion more difficult and expensive. In the short run, however, the effort to strengthen extractive capacity will increase taxpayers' financial stress, thus engendering their grievance against the government and sympathy towards rebels. In the meantime, a government that attempts to raise more tax money will make its peace commitment less credible and endanger the fragile peace in the post-conflict period. Based upon the regression analysis of 138 civil conflicts in 70 countries from 1960 to 2007, this paper finds that how state capacity influences relapse to civil wars is essentially a domestic process. Specifically speaking, where there was a decisive victory in the previous episode of a conflict, increase in state capacity significantly makes the conflict less likely to recur. Nonetheless, the relationship is not significantly shaped by peace keeping operations. Furthermore, natural resources and foreign aid fail to significantly assist capable states in creating a more durable peace. Conversely, the two factors repress the independent influences of state capacity upon the recurrence of civil conflicts.

Keywords: state capacity; extractive capacity; civil conflicts; recurrence

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A significant change in the post-Cold War international security is the rapid rise in renewed civil conflicts.[1] From 1945 to 1999, approximately 69% internal rebellions returned.[2] Specifically speaking, 1/5 to 1/3 of the wars relapsed within five years of resolution, and about 17% of them within ten years of the end of the previous episode.[3]

This paper attempts to explore the impacts of state capacity upon the recurrence of civil conflicts. It is agreed that strong state capacity significantly reduces the risk of renewed conflicts by increasing the opportunity cost of rebellion, whereas polities with weak state capacity are far more likely to experience relapse of conflicts.[4] Following this logic, post-conflict states are compelled to consolidate the state machinery with a view to creating durable peace. But due to different strategic environments in the post-conflict period, the way that state capacity shapes the duration of peace is far more complex. This paper demonstrates that the connection between state capacity and recurring civil conflicts is shaped by three mechanisms that run in opposite directions. In the long run, stronger state capacity makes it financially and militarily more difficult for potential rebels to fight against the government; but in the short run, a government that tries to extract more resources will create financial difficulty for the society, causing civilians to resent the government and sympathize with rebels. Meanwhile, such efforts will reduce the credibility of the state's commitment to peace, thus threatening the fragile peace. In a nutshell, state capacity affects recurring civil conflicts in a non-linear manner.

The empirical test, a quantitative analysis of 138 civil conflicts in 70 states from 1960 to 2007 verifies the major hypothesis of this research. Furthermore, the relationship between state capacity and return of war is conditional as well. If the previous episode of a conflict ends with a decisive victory, the connection is negative. The connection remains significantly negative, although peace keeping operations do not play a due role. Besides, the positive impacts of state capacity upon durable peace are not merely significantly shaped by natural resources and foreign aid, but are found to inhibit the

1 Ibrahim Elbadawi and Nicholas Sambanis, "How Much War will We See? Explaining the Prevalence of Civil War," *Journal of Conflict Resolution*, Vol. 46, No. 3 (June 2002), pp. 307-344; Nils Gleditsch, Peter Wallensteen, Mikael Eriksson, Margareta Sollenberg and Håvard Strand, "Armed Conflict 1946-2001: A New Dataset," *Journal of Peace Research*, Vol. 39, No. 5 (September 2002), pp. 615-637; Lotta Harbom and Peter Wallensteen, "Armed Conflict, 1989-2006," *Journal of Peace Research*, Vol. 44, No. 5 (September 2007), pp. 623-634.

2 Andrew Mack, "Global Patterns of Political Violence," working paper, March 2007, New York: International Peace Academy.

3 Paul Collier, Anke Hoeffler, and Mans Soederbom, "Post-Conflict Risks," *Journal of Peace Research*, Vol. 45, No. 4 (July 2008), pp. 461-478. Some scholars argue that the probability of civil conflict recurrence is severely overestimated as a result of confusion in conceptualization, operationalization and measurement. Please refer to Astri Suhrke and Ingrid Samset, "What's in a Figure? Estimating Recurrence of Civil War," *International Peacekeeping*, Vol. 14, No. 2 (March 2007), pp. 195-203.

4 Paul Collier and Anke Hoeffler, "Greed and Grievance in Civil War," *Oxford Economic Papers*, Vol. 56, No. 4 (August 2004), pp. 563-595; James Fearon and David Laitin, "Ethnicity, Insurgency and Civil War," *American Political Science Review*, Vol. 97, No. 1 (February 2003), pp. 75-90; Mehmet Gurses and T. David Mason, "Weak State, Regime Types, and Civil War," *Civil Wars*, Vol. 12, No. 1-2 (June 2010), pp. 140-155; David Sobek, "Masters of their Domains: The Role of State Capacity in Civil Wars," *Journal of Peace Research*, Vol. 47, No. 3 (May 2010), pp. 267-271.

independent influence of state capacity.

The rest of this paper includes four parts. Part I sets up a theoretical framework based upon current literature and makes testable hypotheses. Part II discusses the data and method of a empirical test. While a report and analysis of empirical findings are presented in Part III, Part IV concludes the research and highlights its theoretical and policy implications.

1. Financial Resources and the Risk of Recurring Civil Conflicts

State capacity is one of the many concepts that social scientists most often utilize but lacks a consensus about whose definition.[5] Skocpol defines state capacity as the ability of the state to achieve goals, particularly in face of strong social groups or recalcitrant societal-economic situation.[6] This paper adopts the concise definition which Hu and Wang propose: "the ability to transform the will and goal (of the state) into realities."[7]

Despite the concise definition used in this paper, the connotation of the concept is very complex. No variable can capture its whole intention.[8] Among other things, the content and emphasis of state capacity vary according to the societal-economic development of each state. Globalization and liberalization have also profoundly shaped state capacity as well.[9] For example, terrorism is challenging the ability of the state to protect its citizenry, while globalization has been weakening the ability of the state to provide welfare to its own underprivileged population in face of global economic competition and to effectively counter terrorism and ward its citizens off physical damage.

For all these, the fundamental components of state capacity are widely acknowledged. No political scientist has ever doubted the fundamental importance of extractive capacity. For instance, Hu and Wang propose that state capacity is made up of extractive capacity, steering capacity, legitimation capacity and coercive capacity. From the perspective of Mark Robinson, however, state capacity has four levels, namely, infrastructural capacity, transformative capacity, distributive capacity, and

5 Karl Derouen, Jr., and Jacob Bercovitch, "Enduring Internal Rivalries: A New Framework for the Study of Civil War," *Journal of Peace Research,* Vol. 45, No. 1 (January 2008), pp. 55-74.

6 Theda Skocpol, "Bringing the State Back in: Strategies of Analysis in Current Research," in Peter Evans, Dietrich Rueschemeyer, and Theda Skocpol, eds., *Bringing the State Back in*, Cambridge: Cambridge University Press, 1985, pp. 3-37.

7 Hu Angang and Wang Shaoguang, *State Capacity of the People's Republic of China*, Shenyang, China: Liaoning People's Press, 1994, p. 6 (胡鞍钢、王绍光:《中国国家能力报告》, 沈阳：辽宁人民出版社 1994 年版，第 6 页).

8 Cullens Hendrix, "Measuring State Capacity: Theoretical and Empirical Implications for the Study of Civil Conflict," *Journal of Peace Research,* Vol. 47, No. 3 (May 2010), p. 283.

9 Mark Robinson, "Hybrid States: Globalisation and the Politics of State Capacity," *Political Studies*, Vol. 56, No. 3 (October 2008), pp. 566-583.s

relational capacity.[10]

The two sources, which define state capacity in different manners, tend to converge on extractive capacity, which Robinson refers to as "infrastructural capacity." Extractive capacity allows the state to mobilize societal economic resources. It is the foundation, nucleus and representative of state capacity.[11] It not only reflects the ability of the state to penetrate into the society, but is the prerequisite for the function of other capacities.[12] In any society, extractive capacity is the most fundamental state capacity.[13] Insufficient extractive capacity would greatly impair the state machinery. Such states may have the ability to respond to societal changes, but are unable to induce social reforms.[14] As a result, extractive or taxation capacity is often utilized as a proxy for state capacity in empirical research.[15] It is because the state must spend money whatever function it performs, including building up the army, controlling the citizenry, formulating and implementing public policy and providing public goods.[16] Douglass North goes further to argue that extraction is the nature of the state. From his standpoint of view, the state, which monopolizes legitimate means of violence, is defined by the boundary that the extractive capacity of the ruler reaches.[17] Furthermore, Cullen

10 In the viewpoint of Hu and Wang, state capacity is four dimensional: (1) Extractive capacity is the ability to mobilize societal-economic resources. It is the cornerstone and representative of state capacity. (2) Steering capacity is the ability to guide national economy. (3) Legitimation capacity helps the state foster political consensus and consolidate the rule via political symbols. (4) Coercive capacity allows the state to safeguard its rule by violence, organization or coercion. Please refer to Hu Angang and Wang Shaoguang, *State Capacity of the People's Republic of China*, pp.6-8. Another typology is contributed by Mark Robins. In his viewpoint, there is a hierarchy of state capacity from low to high: (1) Infrastructural capacity is the ability of the state to penetrate into the society for the extraction of resources and to seek cooperation with organized groups for the purpose of pursuing collective goals. In particular, this ability denotes the ability of the state to levy tax for public interests instead of for the purpose of the distribution of state revenues among a small batch of political elites or the ruling class. (2) Transformative capacity is the ability of domestic policy elites to collaborate with organized economic interest groups and implement economic policy and adjustment for the purpose of upgrading and transforming the industries. (3) Distributive capacity means the ability of the state to redistribute the benefits of economic development to the masses of the people via social welfare and transfer. (4) Relational capacity is the ability of officials to communicate to extra-institutional actors while changes are taking place to the nature and function of the state. Please refer to Hu Angang and Wang Shaoguang, *State Capacity of the People's Republic of China*, Chapter 1; Mark Robinson, "Hybrid States: Globalisation and the Politics of State Capacity," *Political Studies*, Vol. 56, No. 3 (October 2008), pp. 569-580.

11 Hu Angang and Wang Shaoguang, *State Capacity of the People's Republic of China*, p.6.

12 Hu Angang and Wang Shaoguang, *State Capacity of the People's Republic of China*, p.10.

13 Philippe Schmitter, Claudius Wagemann, and Anastassia Obydenkova, "Democratization and State Capacity," paper presented at the X Congreso Internacional del CLAD sobre la Reforma del Estado y de la Administración Pública, Santiago, Chile, October 18-21, 2005, http://unpan1.un.org/intradoc/groups/public/documents/clad/clad0052201.pdf.

14 Robert Jackson and Carl Rosberg, *Personal Rules in Black Africa: Prince, Autocrat, Prophet, and Tyrant*, Berkeley, CA: University of California Press, 1982.

15 Cameron Thies, "Territorial Nationalism in Spatial Rivalries: An Institutionalist Account of the Argentine-Chilean Rivalry," *International Interactions*, Vol. 27, No. 4 (May 2001), pp. 399-431; Cameron Thies, "State Building, Interstate and Intrastate Rivalry: A Study of Post-Colonial Developing Country Extractive Efforts, 1975-2000," *International Studies Quarterly*, Vol. 48, No. 1 (March 2004), pp. 53-72; Cameron Thies, "War, Rivalry, and State Building in Latin America," *American Journal of Political Science*, Vol. 49, No. 3 (July 2005), pp. 451-465; Cameron Thies, "Public Violence and State Building in Central America," *Comparative Political Studies*, Vol. 39, No. 10 (December 2006), pp. 1263-1282.

16 Marina Arbetman and Jacek Kugler, "Relative Political Capacity: Political Extraction and Political Research," in Marina Arbetman and Jacek Kugler, eds., *Political Capacity and Economic Behavior*, Boulder, CO: Westview, 1997, pp. 11-46; Miguel Centeno, *Blood and Debt: War and the Nation-State in Latin America*, University Park, PA: The Pennsylvania State University Press, 2002; A. Organski and Jacek Kugler, *The War Ledger*, Chicago, IL: University of Chicago Press, 1980.

17 Douglass North, *Structure and Change in Economic History*, New York, NY: W. W. Norton, 1981.

Hendrix points out that extractive capacity is one of the two most appropriate measures of state capacity. Revenue generation not only mirrors the size of state capacity, but is frequently regarded as the *sine qua non* of state capacity. Revenue generation precedes all other goals that a state seeks to achieve.[18] First and foremost, the state is obliged to extract necessary resources and then utilize them to create and maintain coercive and administrative organizations.[19] Coercive forces, such as the army and police, are the way that the state monopolizes the legitimate means of force. They both guarantee extraction and other functions, and feed on extracted resources.

State capacity, represented by extractive capacity and coercive force, arguably significantly reduces the risk of civil wars. Weak or failed state apparatus is the predominant source of many most serious problems, from poverty to AIDS to drugs to terrorism. In most developing countries, the state is not too strong, but too weak.[20] Low state capacity is mainly characterized by lacking appropriate institutions, distributable resources and political will to console the aggrieved population.[21] Therefore, Fukuyama suggests that the state should put a high premium upon state capacity consolidation and remake its legitimacy and effective state machinery. Among other things, state capacity is supposed to include the provision of security, the rule of law (including a codified and promulgated body of laws with a reasonably effective police and justice system), basic service provision (including emergency relief, support for the poorest, and essential healthcare), a rudimentary ability to formulate and implement budget plans and to collect revenues through taxation. Likewise, some scholars maintain that civil violence weakens state capacity and throws it into the vicious cycle of violence, therefore, it is imperative to make the state stronger.[22] In order to make peace durable, the state is obliged to build or rebuild minimally legitimate and effective state machinery.[23]

18 Cullens Hendrix, "Measuring State Capacity: Theoretical and Empirical Implications for the Study of Civil Conflict," *Journal of Peace Research,* Vol. 47, No. 3 (May 2010), p. 283.

19 Theda Skocpol, "Bringing the State Back in: Strategies of Analysis in Current Research," in Peter Evans, Dietrich Rueschemeyer, and Theda Skocpol, eds., *Bringing the State Back in*, Cambridge: Cambridge University Press, 1985, pp. 3-37.

20 Francis Fukuyama, *State-Building: Governance and World Order in the 21st Century*, Ithaca, NY: Cornell University Press, 2004; Francis Fukuyama and Sanjay Marwah, "Comparing East Asia and Latin America: Dimensions of Development," *Journal of Democracy*, Vol. 11, No. 4 (October 2000), pp. 80-94.

21 T. Mason, Mehmet Gurses, Patric Brandt and Jason Quinn, "When Civil Wars Recur: Conditions for Durable Peace after Civil Wars," *International Studies Perspectives*, Vol. 12, No. 2 (May 2011), pp. 171-189.

22 David Sobek, "Masters of Their Domains: The Role of State Capacity in Civil Wars," *Journal of Peace Research*, Vol. 47, No. 3 (May 2010), pp. 267-271; Cameron Thies, "Of Rulers, Rebels, and Revenue: State Capacity, Civil War Onset, and Primary Commodities," *Journal of Peace Research*, Vol. 47, No. 3 (May 2010), pp. 321-332.

23 Sarah Cliffe and Nick Manning, "Practical Approaches to Building State Institutions," in Charles Call and Vanessa Wyeth, eds., *Building States to Build Peace*, Boulder, London: Lynne Rienner Publishers, 2008, pp. 119-142; Stephen Krasner, "Shared Sovereignty: New Institutions for Collapsed and Failing States," *International Security*, Vol. 29, No. 1 (Fall 2004), pp. 85-120; Roland Paris, *At War's End: Building Peace after Civil Conflict*, Cambridge, UK: Cambridge University Press, 2004; Barnet Rubin, "The Politics of Security in Post Conflict State-building," in Charles Call and Vanessa Wyeth, eds., *Building States to Build Peace*, Boulder, CO: Lynne Rienner Publishers, 2008, pp. 25-48; Stephen Stedman, Donald Rothchild, and Elizabeth M. Cousens, eds., *Ending Civil Wars: The Implementation of Peace Agreements*, Boulder, CO: Lynne Rienner Publishers, 2002; Susan Woodward, "Institutionally Fragile States. Fragile States, Prevention and Post Conflict: Recommendations," in Martin Doornbos, Susan Woodward, and Silvia Roque, eds., "*Failing States or Failed States? The Role of Development Models: Collected Works*," FRIDE Working Paper, Madrid: FRIDE, 2005.

Nevertheless, increased state capacity in a post-conflict society is not necessarily a blessing. It may be a counter-productive force at the same time. There are at least two mechanisms which reverse the impact of state capacity consolidation upon relapse to conflicts.

First, the state's extractive efforts may well stimulate civilians to realign with rebels. As discussed above, state capacity grows in terms of extraction and coercive forces. Both heavily rely upon taxation. However, taxation may become very unbearable in a society whose tax base has just been weakened by a political turmoil.

Many scholars argue that wars are detrimental to a country in many ways. Wars cause large-scale destruction of human lives and economic infrastructure, and engender inflation, unemployment, and war debt as well.[24] In particular, Davies observes that inflation exerts a particularly strong impact upon capital flight in post-conflict economies. The inflation rate thus becomes the barometer of the political risk in the post-war environment. With a typical post-conflict economy, a one percentage point increase in inflation is associated with a 0.5 to 1 percentage of GDP increase in capital flight flows.[25] Considering the high and sustained inflation rates which were experienced by some economies, this effect of chronic inflation upon capital flight is tremendous. Capital is the blood of national economy. Capital creates investment and employment which in turn yield tax. Capital flight in large scales is a disaster for the recovery of economy and expected increase of national revenues. Olson suggests that wars are a double-edged sword for economy. Wars destroy the monopoly of many rent-seeking and distribution coalitions in a government. Simultaneously, the new government or the ascendancy of more dynamic coalitions, are expected to speed up economic development. Notwithstanding, the emergence of the second function is conditional: a new government which attains power by force is very liable to arouse suspicion and uncertainty from local and international actors and hampers investment and economic planning. This is exactly what happens in a civil conflict which ends up in the decisive victory of the rebels.[26]

Overall, civil violence, particularly high intensity war, substantially impairs national economy. Despite the shrinking tax base, the rulers may choose to extract resources by force. This practice is very dangerous because doing so is very likely to push civilians to the camp of rebels. Walter asserts that rebellion enlistment becomes attractive if

24 Steve Chan, "The Impact of Defense Spending on Economic Performance: A Survey of Evidence and Problems," *Orbis*, Vol. 29, No. 2 (1985), pp. 403-434; Paul Diehl and Gary Goertz, "Trends in Military Allocation since 1816: What Goes Up Does Not Always Come Down," *Armed Forces and Society*, Vol. 12, No. 1 (Fall 1985), pp. 134-144; Paul Collier, V. Elliot, Havard Hegre, Anke Hoffler, Marta Reynal-Querol, and Nicholas Sambanis, *Breaking the Conflict Trap: Civil War and Development Trap*, Washington, D.C.: World Bank, 2003; Seonjou Kang and James Meernik, "Civil War Destruction and the Prospects for Economic Growth," *The Journal of Politics*, Vol.67, No.1 (January 2005), pp. 88-109; James Murdoch and Todd Sandler, "Civil Wars and Economic Growth: Spatial Dispersion," *American Journal of Political Science,* Vol. 48, No. 1 (January 2004), pp. 138-151.

25 Victor Davies, "Postwar Capital Flight and Inflation," *Journal of Peace Research*, Vol. 45, No. 4 (July 2008), pp. 519-537.

26 Mancur Olson, *The Rise and Decline of Nations: Economic Growth, Stagflation, and Social Rigidities*, New Haven, CN: Yale University Press, 1982.

individual hardship or severe dissatisfaction with one's current situation is more than one can put up with. Predatory states tend to make people desperate. For instance, the long history of China was characterized by cyclical uprisings which led to dynastic transitions. A predominant factor underlying this vicious cycle was that rulers at the end of each dynasty heightened taxation efforts in order to curb recurring civil conflict.[27]

Second, increased state capacity does not necessarily foster peace but may spur a renewed conflict because of a different reason: While the state amasses too much power quickly, alienated groups may feel unsafe or excluded, such as what happened in Zaire. To put it differently, the effort to increase state capacity will make former commitments incredible.

Incredible commitment means that either or both sides of a conflict fail to credibly commit to less costly options.[28] A commitment becomes incredible because one actor makes promises to adhere to some agreements, on which the opponents feel doubtful about the likelihood of their reneging in the future. Generally speaking, the predominant cause for commitment problems is significant shifts in the distribution of power among contenders. Walter states that it is more difficult to bargain in intrastate than in international wars. Commitment problems are very salient in civil conflict.[29] There is usually a large power asymmetry existing between government and rebels. For this reason, the ruler finds it much easier to renege on promises, while rebels are incapable of penalizing the government.[30] Meanwhile, a domestic group will invariably become weaker and more vulnerable because a settlement almost always results in the demobilization of rebel soldiers as part of the deal. Rarely are two competing armies or militias allowed to coexist within a single state.[31] Consequently, former rebels will become very vulnerable to ruthless reprisals if the government reneges.

Commitment problems in intrastate wars stem from a number of reasons, such as weak institutions and cemented cleavages. More important, settlements are highly sensitive to any changes in relative power that may occur after a war is fought.[32] For instance, the 1972 agreement to end the civil war in Sudan broke down in 1983 because the government reneged on its promise not to institute Sharia law.[33] Civil conflicts,

27 Hui Qin, "Power, Obligation and Constitutionalism: An Essay on the Size of Government in Transitional Regimes," *Chinese Journal of Social Sciences,* Vol. 25, No. 2, 2005, pp. 27-73.

28 James Morrow, "The Strategic Setting of Choices: Signaling, Commitment, and Negotiation in International Politics," in David Lake and Robert Powell, eds., *Strategic Choice and International Relations*, Princeton: Princeton University Press, 2001, pp. 77-115.

29 Barbara Walter, "Bargaining Failures and Civil War," *Annual Review of Political Science,* Vol. 12 (2009), pp. 243-261.

30 Roland Paris, *At War's End: Building Peace after Civil Conflict*, Cambridge, UK: Cambridge University Press, 2004.

31 James Fearon, "Commitment Problems and the Spread of Ethnic Conflict," in David Lake and Donald Rothchild, eds., *The International Spread of Ethnic Conflict: Fear, Diffusion and Escalation*, Princeton, NJ: Princeton University Press, 1998, pp. 107-126; James Fearon, "Why Do Some Civil Wars Last So Much Longer than Others?" *Journal of Peace Research,* Vol. 41, No. 3 (May 2004), pp. 275-301.

32 Robert Powell, "War as a Commitment Problem," *International Organization*, Vol. 60, No. 1 (January 2006), pp. 169-203; Barbara Walter, "Bargaining Failures and Civil War," *Annual Review of Political Science,* Vol. 12 (2009) pp. 243-261.

33 Charles Call and Vanessa Wyeth, eds., *Building States to Build Peace*, Boulder, London: Lynne Rienner Publishers, 2008.

particularly high intensity civil wars, greatly jeopardize state capacity. According to Daxecker, a shock to the state's capabilities, e.g. economic downturn and war failure, gives the leadership an incentive to grant concessions to other groups within the state. Nevertheless, such promises are incredible in many circumstances.[34] Rebels have reasons to expect the ruler to regain its strength in the foreseeable future. While the ruler uses military force in order to hold the power, the oppositional forces would fight again for fear that the state break its promise in the future. In a post-conflict country, the state's effort to enhance its capacity is easy to strike former rebels that the government is amassing strength in order to gain an edge over them and take revenge at last. This perception would stimulate rebels to fight again lest the state apparatus become strong enough.

To sum up, increased state capacity has both positive and negative effects upon relapse to civil conflicts. Whereas it narrows the window of opportunity for renewed rebellion, it arouses popular grievance through extractive efforts and makes its commitments incredible to potential rebels. Whether the net effect is negative or positive depends upon the relative leverage of the above three influences. There is a reason to believe that the state can easily enrage the society by tax increase in the wake of a conflict. In the study of state building in Sub-Saharan Africa and the Middle Eastern countries, Cameron Thies and his coauthor demonstrate that the presence of enduring internal rivalry, especially hostile militarized ethnic groups, significantly improve the extractive capacity of the government.[35] These groups constitute a structural pressure upon both the state and the society, and eventually justify the state's effort to extract more resources. According to Charles Tilly and other authors, war makes a state in two ways: On one hand, war makes people more tolerant of a higher level of taxation and stimulates capitalists to exchange more tax for wealth safety and opportunity to make money out of the war. On the other, by means of war threats and propaganda, the government is capable of raising the rate of acceptable tax to a higher level. This process coincides with the comprehensive expansion of the administrative and fiscal machinery of the state. Aggregating the two effects, the state promotes both war, taxation and state building concurrently.[36]

So to speak, unless grievance stemming from increased extraction evolves into a new conflict, tax payers would gradually adapt to the marginal stimuli of the state. Similarly,

34 In 2008, civil war in the Democratic Republic of the Congo resurged for the same reason. According to the two cases, please refer to Ursula Daxecker, "Shocks, Commitment, and the Risk of Civil War," *International Interactions*, Vol. 37, No. 1 (January 2010), pp. 29-54.

35 Cameron Thies, "The Political Economy of State Building in Sub-Saharan Africa," *Journal of Politics*, Vol.69, No.3 (June 2007), pp.716-731; Lingyu Lu and Cameron Thies, "War, Rivalry, and State Building in the Middle East," *Political Research Quarterly*, Vol. 66, No. 2 (June 2012), pp. 239-253.

36 Edgar Kiser and April Linton, "Determinants of the Growth of the State: War and Taxation in Early Modern France and England," *Social Forces*, Vol.80, No.2 (December 2001), pp. 411-448; Charles Tilly, "War Making and State Making as Organized Crime," in Peter Evans, Dietrich Rueschemeyer, and Theda Skocpol, eds., *Bringing the State Back In*, Cambridge, UK: Cambridge University Press, 1985, p. 180.

rebel groups would become adapted to a stronger state as well. After a certain period of time, negative impacts of the two mechanisms would gradually be outweighed by the positive impact of increased state capacity. Therefore, I hypothesize:

·*H1: State capacity influences recurring civil violence in a non-linear way.*

As discussed above, commitments become incredible chiefly because there is a ceasefire, peace or tacit agreement between the ruler and rebels. Peace or ceasefire agreements often denote that one side, usually the rebel group, will be disarmed.[37] At the same time, negotiated settlement leaves the former combatants with the challenge of enforcing the terms.[38] Licklider finds that the pacifying effect of peace agreements is much weaker than decisive victory.[39] Although policy makers place great value upon agreements, they do not satisfactorily create a longer peace. Empirically, the probability that peace agreements fail to be implemented is relatively high. Only decisive victories resolve commitment problems because the victor simply eliminates multiple sovereignties and implements its favored policies.[40] In other words, decisive victory eliminates incredible commitments by force. Even if the government reneges, former rebels would have no ability to fight again.[41] Given that military confrontation destroys the infrastructure of the opponent, it is very difficult for the defeatist or potential challengers to mobilize material and human resources for further combat.[42] If the government keeps increasing extraction under such circumstances, the masses are less likely to join the rebel army, however discontented they are. Thus, the state is able to relatively easily extract resources in the consolidation of the fragile peace. As a result, enhanced state capacity is more likely to make civil conflicts less likely to recur.

·*H2: If there was a decisive victory in the previous episode of a conflict, State capacity makes civil conflicts less likely to recur.*

Also due to commitment problems, international factors play a salient part in

37 Karl Derouen, Jr., Mark Ferguson, Samuel Norton, Young Park, Jenna Lea, and Ashley Streat-Bartlett, "Civil Peace Agreement Implementation and State Capacity," *Journal of Peace Research,* Vol. 47, No. 3 (May 2010), pp. 333-346.

38 Karl Derouen, Jr., and Jacob Bercovitch, "Enduring Internal Rivalries: A New Framework for the Study of Civil War," *Journal of Peace Research,* Vol. 45, No. 1 (January 2008), pp. 55-74.

39 Roy Licklider, "The Consequences of Negotiated Settlements in Civil Wars, 1945-1993," *American Political Science Review*, Vol. 89, No. 3 (September 1995), pp. 681-690；Bumba Murherjee, "Why Political Power-Sharing Agreements Lead to Enduring Peaceful Resolution of Some Civil Wars, but Not Others?" *International Studies Quarterly*, Vol. 50, No. 2 (June 2006), pp. 479-504.

40 Civil war means the emergence of a competitor or a competitor coalition that militarily challenges the government. These groups raise their own political and policy agenda, which are accepted by a substantial proportion of people. Moreover, the government and its agents are incapable of eliminating them. This is how Charles Tilly defines multiple sovereignty. Please refer to Charles Tilly, *From Mobilization to Revolution*, Reading, MA: Addison Wesley, 1978.

41 Barbara Walter, "Does Conflict Beget Conflict? Explaining Recurring Civil War," *Journal of Peace Research*, Vol. 41, No. 3 (May 2004), pp. 371-388.

42 Harrison Wagner, "The Causes of Peace," in Roy Licklider, ed., *Stopping the Killing: How Civil Wars End*, New York, NY: New York University Press, 1993, pp. 235-268.

achieving durable civil peace. On one hand, international peace keepers, mainly in the form of UN peace keeping and building, greatly decrease the return of large-scale violence. Countries that accommodated a UN mission recover in a more sustainable manner.[43] Accordingly, risks for recurrence are significantly reduced.[44] Within two years after war termination, civil wars with UN operation are almost twice as likely to succeed in the form of participatory peace building as conflicts without the UN presence.[45]

After the Cold War, the scope of peace keeping is broad enough to include election monitoring, policy training, and government administration as well. In the post-Cold War period, PKOs have greatly proliferated. Election monitoring, police training and public administration have already become the domain of peace keepers.[46] Most important of all, international actors make credible commitments by enforcing the ceasefire agreement "impartially" as the third party. This is the primary origin of PKOs' positive image. PKOs provide the necessary resources and institutional capacity that are indispensable to the maintenance of stability and peace. Specifically, their presence makes sure that the terms of the treaty negotiated after a civil war be implemented by the opposing parties. In this way, international actors protect the weaker side, reduce their fear and neutralize the strong sense of insecurity of rebels that stem from the state's stronger efforts to extract resources.[47]

·H3: Where there are PKOs, State capacity makes civil conflict less likely to recur.

As discussed above, the impact of state capacity upon renewed conflicts also depends upon the pressure which the government exerts upon its population in order to extract resources. The government can achieve this goal without inflicting so much pain upon its population through two ways. Internally, the government can raise money from export of natural resources to foreign countries. The natural resource can be oil, gem or drug which yields large sums of revenues. Natural resources are arguably the curse of the owner state. For example, the rentier states are capable of providing an array of services to their citizens by sufficient oil revenues. Accordingly, they lack the

43 Mason et al, "When Civil Wars Recur: Conditions for Durable Peace after Civil Wars," *International Studies Perspectives*, Vol. 12, No. 2 (May 2011), pp. 171-189; Nicholas Sambanis, "Short- and Long-Term Effects of United Nations Peace Operations," *The World Bank Economic Review,* Vol. 22, No. 1 (January 2008), pp. 9-32.

44 For instance, Virginia Fortna, "Inside and Out: Peacekeeping and the Duration of Peace after Civil and Interstate Wars," *International Studies Review*, Vol. 5, No. 4 (2003) pp. 97-114; Virginia Fortna, "Does Peacekeeping Keep Peace? International Intervention and the Duration of Peace after Civil War," *International Studies Quarterly*, Vol. 48, No. 2 (June 2004), pp. 269-292; Michael Quinn, David Mason, and Mehmet Gurses, "Sustaining the Peace: Determinants of Civil War Recurrence," *International Interactions,* Vol. 33, No. 2 (April 2007), pp. 167-193.

45 Michael Doyle and Nicholas Sambanis, *Making War and Building Peace: United Nations Peace Operations*, Princeton and Oxford: Princeton University Press, 2008.

46 Virginia Fortna, "Inside and Out: Peacekeeping and the Duration of Peace after Civil and Interstate Wars," *International Studies Review*, Vol. 5, No. 4, 2003, pp. 97-114.

47 Virginia Fortna, "Does Peacekeeping Keep Peace? International Intervention and the Duration of Peace after Civil War," *International Studies Quarterly*, Vol. 48, No. 2 (June 2004), pp. 269-292; Barbara Walter, "The Critical Barrier to Civil War Settlement," *International Organization*, Vol. 51, No. 3 (Summer 1997), p. 340; Barbara Walter, *Committed to Peace: The Successful Settlement of Civil Wars*, Princeton: Princeton University Press, 2002.

incentive to construct an efficient organization of tax collection. Neither do they have the motivation to construct an efficient strong state institution. But in the post-conflict environment, natural resources play a unique role in reducing the financial burden of the impoverished people. Therefore, I hypothesize:

·*H4: Where there is natural resource endowment, state capacity makes civil conflicts less likely to recur.*

The external approach to resource extraction is to request foreign aid. What is most closely associated with peace building is official development assistance (ODA), which is donated in the form of grants and loans by the official sector of foreign countries or international organizations. The major objective of ODA is to reduce poverty and renewed conflicts by promoting economic development and welfare, or by fostering the provision of primary economic goods.[48] The most famous success stories include the Marshall and Dodge Plans. They became the financial base for the miraculous economic recovery of West Europe and Japan.[49]

ODA reduces the pressure of the government to tax its people because money comes from outside of its economic system. It promotes economic growth and strengthens state capacity through increased taxation.[50] Similar to other non-tax revenues, aid reduces taxation in democracies, encourages more social spending in dictatorships .[51] It may also be "privatized" to buy the support of the "selectorate" for the maintenance of political stability. Through foreign aid, the recipient government becomes capable of extracting resources from overseas, at least temporarily, and thus more effectively run the state apparatus after the state experienced a civil rebellion. For the above reasons, I hypothesize:

·*H5: Where there is a flow of foreign economic aid, state decreases the likelihood of civil violence recurrence.*

2. Data and Method

This section discusses the data and method for empirical testing of the hypotheses generated above. The raw data covers 168 conflicts within 98 countries from 1947 to

48 Paul Collier and Anke Hoeffler, "On the Incidence of Civil War in Africa," *Journal of Conflict Resolution*, Vol. 46, No. 1 (February 2002), pp. 13-28; Paul Collier and Anke Hoeffler, "Greed and Grievance in Civil War," *Oxford Economic Papers*, Vol. 56, No. 4 (August 2004), pp. 563-595.

49 Please refer to Rudiger Dornbusch, Wilhelm Nj1ing, and Richard Layard, *Postwar Economic Reconstruction and Lessons for the East Today*, Cambridge: MIT Press, 1993; Martin Schain, *The Marshall Plan: Fifty Years After*, New York: Palgrave, 2001.

50 Paul Collier and Anke Hoeffler, "On the Incidence of Civil War in Africa," *Journal of Conflict Resolution*, Vol. 46, No. 1 (February 2002), pp. 13-28.

51 Kevin Morrison, "Oil, Non-Tax Revenue, and the Redistributional Foundation of Regime Stability," *International Organization*, Vol. 63, No. 1 (January 2009), pp. 107-138.

2009. The main dataset is the Armed Conflict Dataset (ACD), version 4.[52] In the dataset, a civil conflict is defined as a military confrontation between the government and rebel group, which results in at least 25 battle-related deaths in a year. The total number of observations is 3,769. Due to missing values of variables, the in-sample observations range from 2,796 to 3,014. The ACD dataset categorizes conflicts into four types: extra-systemic conflicts, international conflicts, intrastate conflicts without intervention and internationalized civil conflicts. I extract the latter two types. "Civil conflicts" in this paper is the sum of the latter two types of violence.

The unit of analysis is the conflict day. The structure of ACD makes such a choice possible, because it provides dates for the beginning and ending of each episode of a conflict. More important, the regular use of the conflict year or country year as the unit of analysis encounters technical difficulty in some cases.[53] For instance, the Burmese government fought Burmese Muslim Association in 1996. This conflict lasted eight days, from December 23 to December 31. If I treat the conflict year as the unit of analysis, the spell of peace between the two episodes is 0 year. I must extend the spell into 1 year in order that survival analysis could be applied. Using the conflict month as the unit of analysis yields a duration 1 month. Apparently, both conflict year and conflict month overextends the conflict duration. Conversely, the conflict day yields the most precise measure.

2.1 Dependent Variables

A dependent variable is the time that elapsed (in days) since the end of the most recent episode of a conflict. This variable is reset to represent a peace spell unless another event occurs before December 31, 2008. Since I am going to study the likelihood of conflict recurrence or duration of peace after the end of the first episode of a multiple-event conflict, one type of case will be automatically dropped out of the recurrence model: cases in which no conflict has ever occurred. Peaceful cases, which are indispensable to the onset models, do not make sense because recurrence is only meaningful to countries that have experienced at least one conflict event.

52 Nils Gleditsch et al, "Armed Conflict 1946-2001: A New Dataset," *Journal of Peace Research*, Vol. 39, No. 5 (September 2002), pp. 615-637. Correlates of War (COW) is the most widely utilized dataset for conflict study. A subset of the dataset is civil war dataset. I do not use it primarily for three reasons: First, the cutoff point in COW's definition of a war is at least 1,000 battle deaths per year. This criterion excludes a number of famous civil wars, such as the Basque war in Spain and Northern Ireland war in Britain. A relatively low cutoff point would be more flexible and yield more cases for analysis. Second, COW's civil war data is reported on an annual basis, without reporting annual deaths and battle related deaths in each episode of a conflict. The two variables, however, are very important for the explanation and prediction of war recurrence. Third, the third edition of COW is updated until 2001, whereas the 4th edition of ACD has covered the data of 2008. Therefore, ACD would yield findings with larger external validity. Please refer to Meredith Sarkees, "The Correlates of War Data on War: An Update to 1997," *Conflict Management and Peace Science,* Vol. 18, No. 1 (January 2000), pp. 123-144.

53 Some scholars use state/year as the unit of analysis, for example, Mason et al., "When Civil Wars Recur: Conditions for Durable Peace after Civil Wars," *International Studies Perspectives*, Vol. 12, No. 2 (May 2011), p. 173. However, in civil conflict research, few scholars do it this way. This is because many countries experience multiple wars in a year. Mason and his coauthors make this choice due to their definition of peace. They argue that peace means the end of all wars in a country, instead of the termination of a specific war while other wars are ongoing.

It is not uncommon that a country experienced the first episode of a conflict, but the second did not occur until December 31, 2008. Cases of this type should not be treated equally. There are two situations that require discrimination. First, a state may exit the state system before a conflict recurs. A case in point is the Republic of Vietnam that existed between 1955 and 1975. From April 1 to December 12, 1964, this Republic was in combat with the National Front for the Liberation of South Vietnam (FNL). The conflict did not resume after the termination of the first episode because communists eliminated the regime in South Vietnam in 1975. This category of case was identified as a single-event conflict and eliminated from the recurrence dataset. Second, the state does not vanish, but the conflict does not recur until December 31, 2008, the end date of analysis. For instance, the Niger Delta People's Volunteer Force (NDPVF), one of the largest armed groups in the Niger Delta region of Nigeria, fought the Nigerian government in an attempt to gain more control over the region's vast petroleum resources between May 6 and September 29, 2004. The two sides remained peaceful until the end of 2005. I choose to leave these cases right censored and let the hazard models account for these censored cases within the overall likelihood function through the survival function.[54]

2.2 Primary Independent Variables

I create five primary variables in order to test the hypotheses. I measure state capacity in terms of relative political capacity (RPC). RPC is a measure of the strength of the state relative to other states with similar levels of development and resource endowments. It is an index which compares the actual level of tax extraction to a predicted level. Predicted revenues are estimated as a function of per capita income, the share of agriculture in the economy, the share of mining in the economy, and major oil production. RPC is a continuous variable. Its value in this research ranges from 0.0178503 to 3.421459. A state that scores 1 on the RPC indicator is extracting exactly as one would expect compared to other states with similar conditions, while those that score higher than 1 are extracting more than expected and those that score lower than 1 are extracting less than expected. This predicator was first developed by Organski and Kugler as a better measure of the ability of a government to mobilize resources. It is not only better than rough proxies such as national capacities, but superior to the most widely used tax revenue as a percentage of GDP.[55] This is because many rentier states do not extract money from their population, but build the state by resource export. Nonetheless, those states are often highly coercive and armed to teeth. If we adopt tax ratio to reflect state capacity, theirs will be systematically underestimated. RPC has

54 Janet Box-Steffensmeier and Bradford Jones, *Event History Modeling: A Guide for Social Scientists*, Cambridge: Cambridge University Press, 2004; Stephen Quackenbush and Jerome Venteicher, "Settlements, Outcomes, and the Recurrence of Conflict," *Journal of Peace Research*, Vol. 45, No. 6 (November 2008), pp. 723-742.

55 A. Organski and Jacek Kugler, *The War Ledger*, Chicago, IL: University of Chicago Press, 1980.

found a lot of application.[56]

In the empirical research of political science, tax revenue as a percentage of GDP is the most often utilized predictor.[57] This paper does not consider this indicator mainly for two reasons: First, rentier states rarely extract resources from the masses of people. Instead, they rely upon natural resource export as the chief means of collecting revenues for the government. These states are characterized by low tax rates, adequate finance and strong military prowess, although their ability of extraction is not necessarily low. As a result, use of this predicator would systematically underestimate the extractive capacity of rentier states. Conversely, RPC is a relative value that evaluates the difference between the actual taxation rate and its expected rate. It better evades the biases that result from using tax revenue as a percentage of GDP. Second, the most authoritative data on tax rates are collected by the World Bank. However, from 1960 to 2009, approximately 40% of the data are missing. In contrast, the missing rate of RPC dataset is less than 10%. Too high a percentage of missing values would bias the results of regression analysis and decrease the external validity. Consequently, this paper adopts RPC.

To test the two conditional hypotheses, namely H2 (state capacity makes civil conflicts less likely to recur if there is a decisive victory in the previous conflict) and H3 (state capacity makes civil conflicts less likely to recur if there are peace keeping operations after the previous conflict), I create two interaction terms. The base of the two terms is respectively whether the previous episode of a conflict ended in decisive victory (1) or not (0), and whether international actors conducted peace keeping operations (1) or not (0). Both are taken from UCDP Conflict Termination Dataset.[58] Wars ending with one side dominating the other are presumed to leave little opportunity for the weaker side to renew the fight. On the other hand, many scholars find that PKOs significantly reduce the risk of renewed conflicts. I interact these two variables with each of the above two direct measures of state capacity and expect each interaction term to be significantly and negatively associated with recurring conflicts. At the same time, I take the suggestion of Brambo, Clark and Golden, and include the above two outcome variables in my equations in case the assumption that the value of the two basic variables is zero is violated, which would bias the regression

56 Marina Arbetman and Jacek Kugler, "Relative Political Capacity: Political Extraction and Political Research," in Marina Arbetman and Jacek Kugler, eds., *Political Capacity and Economic Behavior*, Boulder, CO: Westview, 1997, pp. 11-46; Yi Feng, *Democracy, Governance, and Economic Performance: Theory and Evidence*, Cambridge, MA: MIT Press, 2003; Lingyu Lu and Cameron Thies, "War, Rivalry, and State Building in the Middle East," *Political Research Quarterly*, Vol. 66, No. 2 (June 2012), pp. 239-253.

57 John Campbell, "The State and Fiscal Sociology," *Annual Review of Sociology*, Vol. 19 (1993), pp. 163-185; Kiren Chaudhry, *The Price of Wealth: Economies and Institutions in the Middle East*, Ithaca, NY: Cornell University Press, 1997; Jose Cheibub, "Political Regimes and the Extractive Capacity of Governments: Taxation in Democracies and Dictatorships," *World Politics*, Vol. 50, No. 3 (April 1998), pp. 349-376; Cameron Thies, "The Political Economy of State Building in Sub-Saharan Africa," *Journal of Politics*, Vol. 69, No. 3 (June 2007), pp. 716-731.

58 Joakim Kreutz, "How and When Armed Conflicts End: Introducing the UCDP Conflict Termination Dataset," *Journal of Peace Research*, Vol. 47, No. 2 (March 2010), pp. 243-250.

results.[59]

The test of H4 (natural resources makes civil conflicts less likely to recur) requires a measure of natural endowments. I create a dummy variable on the basis of three dichotomous variables. One is the presence of oil production. The other is whether there is gem or diamond production in a country year. The third is the production of coca, cannabis or opium. All three data come from Lujala's dataset.[60] Greed for natural resources is commonly operationalized by primary commodity exports as a percentage of GDP, or the dichotomous variable of a rentier state or oil producer, with 1 denoting that a country has more than 1/3 of its export earnings from oil, and 0 otherwise. Nevertheless, any measure of natural resource dependence may be endogenous to a conflict partly due to reverse causality in which civil conflicts may induce resource dependence by decreasing the size of a country's non-resource sectors.[61] Therefore, Brunnschweiler and Bulte suggest that scholars operationalize natural resources in terms of resource abundance.[62] Our operationalization of greed as natural resource production partly resolves this problem, because civil conflict may reduce resource production, but may not stop it shortly. I code the dummy variable as 1 if any of the three dummies is 1 and as 0 if none of them is 1.

The last hypothesis is that foreign aid decreases renewed civil violence. In this hypothesis, the predictor is foreign aid. I operationalize this variable as ODA as a percentage of governmental national spending (GNP).[63] ODA is net official aid received from all Development Aid Committee (DAC) members of the Organization of Economic Development and Cooperation (OEDC). The other is ODA as a percentage of gross national product (GDP).[64] ODA is an appropriate measure in this test because it is given for the purpose of promoting economic growth in underdeveloped or post-conflict societies. I take the data of ODA, GNP and GDP from World Development Indicators (WDI).[65]

2.3 Control Variables

I control for a number of variables which scholars regularly utilize in the study of civil war recurrence. The first three control variables inform the resolution of a conflict

59 Thomas Brambor, William Clark, and Matt Golder, "Understanding Interaction Models: Improving Empirical Analyses," *Political Analysis*, Vol. 14, No. 1 (Winter 2006), pp. 63-82.

60 Pavi Lujala, "Deadly Combat over Natural Resources: Gems, Petroleum, Drugs, and the Severity of Armed Civil Conflict," *Journal of Conflict Resolution*, Vol. 53, No. 1 (February 2009), pp. 50-71; Pavi Lujala, "The Spoils of Nature: Armed Civil Conflict and Rebel Access to Natural Resources," *Journal of Peace Research*, Vol. 47, No. 1 (January 2010), pp. 15-28.

61 Paul Collier and Anke Hoeffler, "On the Incidence of Civil War in Africa," *Journal of Conflict Resolution*, Vol. 46, No. 1 (February 2002), pp. 13-28.

62 Christa Brunnschweiler and Erwin Bulte, "The Resource Curse Revisited and Revised: A Tale of Paradoxes and Red Herrings," *Journal of Environmental Economics and Management*, Vol. 55, No. 3 (May 2008), pp. 248-264.

63 Stephen Knack, "Does Foreign Aid Promote Democracy?" *International Studies Quarterly*, Vol. 48, No. 1 (March 2004), pp. 251-266.

64 Cameron Thies, "War, Rivalry, and State Building in Latin America," *American Journal of Political Science*, Vol. 49, No. 3 (July 2005), pp. 451-465.

65 World Bank, *World Development Indicators 2010*, Washington, D.C., 2011.

in the previous episode, namely whether the conflict ends up in a decisive victory, whether the resolution involves international peace keeping operations, and whether a peace agreement is signed. According to the UCDP Conflict Termination dataset, a peace agreement deals with "resolving or regulating the incompatibility – completely or a central part of – which is signed and/or accepted by all or the main parties active in last year of the conflict." It is a more advanced achievement than a ceasefire agreement, thereby leading to more durable peace. It allegedly resolves the dilemma of asymmetric information and more capable than ceasefire agreements of creating a long peace.[66] All three variables are taken out of UCDP Conflict Termination Dataset, [67] and I expect all three variables to significantly make recurrence less likely.

I control for two dichotomous measures of the nature of the conflict. One is ethnically mobilized conflicts. Walter suggests that a conflict is ethnically mobilized if combats "broke down along ethnic lines" or "a faction defines itself as a separate ethnic group." She also finds that ethnic conflicts are more difficult to pacify.[68] The other is whether the stake in the conflict is territory. Territory is a chief incompatibility that frequently throws a state into an internal conflict. Furthermore, the demand for soil is relatively persistent.[69] I take the data of ethnic conflict from Kreutz and of territorial conflicts from Gleditsch et al.[70] The two variables are expected to reduce the duration of peace.

At the same time, I incorporate two variables to control for the history and cost of a conflict, i.e. the duration (in days) and number of battle-related deaths of the previous event. The more durable a conflict is, the more difficult it is for a competitor to win the war decisively.[71] Moreover, as time goes on, both sides become increasingly more exhausted in terms of material and human resources, and combatants become

66 Caroline Hartzell and Matthew Hoddie, "Institutionalizing Peace: Power Sharing and Post-Civil War Conflict Management," *American Journal of Political Science*, Vol. 47, No. 2 (April 2003), pp. 318-332; Michael Mattes and Burcu Savun, "Fostering Peace after Civil War: Commitment Problems and Agreement Design," *International Studies Quarterly*, Vol. 53, No. 3 (September 2009), pp. 733-755.

67 Joakim Kreutz, "How and When Armed Conflicts End: Introducing the UCDP Conflict Termination Dataset," *Journal of Peace Research*, Vol. 47, No. 2 (March 2010), pp. 243-250.

68 Ibrahim Elbadawi and Nicholas Sambanis, "How Much War will We See? Explaining the Prevalence of Civil War," *Journal of Conflict Resolution*, Vol. 46, No. 3 (June 2002), pp. 307-344; Tanja Ellingsen, "Colorful Communities or Ethnic Witches Brew? Multi-ethnicity and Domestic Conflict during and after the Cold War," *Journal of Conflict Resolution*, Vol. 44, No. 2 (April 2000), pp. 228-249; Marta Reynol-Querol, "Ethnicity, Political Systems and Civil War," *Journal of Conflict Resolution*, Vol. 46, No. 1 (February 2002), pp. 29-54; Nicholas Sambanis, "Do Ethnic and Non-Ethnic Civil Wars Have the Same Causes?" *Journal of Conflict Resolution*, Vol. 45, No. 3 (June 2001), pp. 259-282.

69 Mason, et al., "When Civil Wars Recur: Conditions for Durable Peace after Civil Wars," *International Studies Perspectives*, Vol. 12, No. 2 (May 2011), pp. 171-189; Barbara Walter, "Does Conflict Beget Conflict? Explaining Recurring Civil War," *Journal of Peace Research*, Vol. 41, No. 3 (May 2004), pp. 371-388.

70 Joakim Kreutz, "How and When Armed Conflicts End: Introducing the UCDP Conflict Termination Dataset," *Journal of Peace Research,* Vol. 47, No. 2 (March 2010), pp. 243-250; Nils Gleditsch et al, "Armed Conflict 1946-2001: A New Dataset," *Journal of Peace Research*, Vol. 39, No. 5 (September 2002), pp. 615-637.

71 T. David Mason and Patrick Fett, "How Civil Wars End: A Rational Choice Approach," *Journal of Conflict Resolution*, Vol. 40, No. 4 (December 1996), pp. 546-586; Patrick Brandt, T. Mason, Mehmet Gurses, Niclai Petrovsky, and Dagmar Radin, "When and How the Fighting Stops: Explaining the Duration and Outcome of Civil Wars," *Defence and Peace Economics*, Vol. 19, No. 6 (November 2008), pp. 415-434.

increasingly more tired of the war per se, and popular support for war would also decrease accordingly.[72] For this reason, Walter finds that a durable conflict is less likely to be renewed in the future.[73] On one hand, an enduring conflict helps overcome asymmetric information problems and makes both sides realize the military might and combat will lest the war be renewed due to misjudgment.[74] On the other, the higher the war casualties are, the more difficult it is to mobilize and organize adequate personnel for furthermore, which in turn turns down the risk of renewed war.[75] Owing to their very high skewness, I use their natural logarithm. The two data are extracted from Gleditsch et al.[76]

I also control for the log transformed GDP per capita (current USD) as a proxy for economic development in a post conflict society. Both Walter and Quinn, Mason and Gurses illustrate that economic development reduces the likelihood of recurred wars, because economic well-being mollifies hostilities, provides civilian with more jobs, increases tax revenues, refuels the national army and pays the soldiers.[77]

Last but not least, I control for the presence of civil conflict in the same year. I take this option because of the data structure of ACD. A country may become involved in more than one conflict during some years. For example, Bosnia and Herzegovina (COW code 246) was preoccupied with three civil wars in 1993: The Bosnia and Herzegovina government fought on the Autonomous Province of Western Bosnia. This conflict began on Oct. 10 and ended on Oct. 7 (ACD conflict number 202). Meanwhile, Bosnia and Herzegovina was in combat with Croatian Republic of Bosina and Herzegovina from Oct. 20, 1992 until Apr. 20, 1993 (ACD conflict number 203). Concurrently, the government was also party to military actions against irregular Serbians which were supported by Serbia (ACD conflict number 194). If there is not such a variable that reports the presence of conflicts simultaneously, my regression results will definitely be

72 Virginia Fortna, "Does Peacekeeping Keep Peace? International Intervention and the Duration of Peace after Civil War," *International Studies Quarterly*, Vol. 48, No. 2 (June 2004), pp. 269-292.

73 T. David Mason and Patrick Fett, "How Civil Wars End: A Rational Choice Approach," *Journal of Conflict Resolution*, Vol. 40, No. 4 (December 1996), pp. 546-586; Patrick Brandt, T. Mason, Mehmet Gurses, Niclai Petrovsky, and Dagmar Radin, "When and How the Fighting Stops: Explaining the Duration and Outcome of Civil Wars," *Defence and Peace Economics*, Vol. 19, No. 6 (November 2008), pp. 415-434.

74 Caroline Hartzell, Matthew Hoddie, and Donald Rothchild, "Stabilizing the Peace after Civil War: An Investigation of Some Key Variables," *International Organization,* Vol. 55, No. 1 (Winter 2001), pp. 183-208; Mason et al, "When Civil Wars Recur: Conditions for Durable Peace after Civil Wars," *International Studies Perspectives*, Vol. 12, No. 2 (May 2011), pp. 171-189; Michael Quinn, David Mason, and Mehmet Gurses, "Sustaining the Peace: Determinants of Civil War Recurrence," *International Interactions*, Vol. 33, No. 2 (April 2007), pp. 167-193; Barbara Walter, "Does Conflict Beget Conflict? Explaining Recurring Civil War," *Journal of Peace Research*, Vol. 41, No. 3 (May 2004), pp. 371-388.

75 Mason et al, "When Civil Wars Recur: Conditions for Durable Peace after Civil Wars," *International Studies Perspectives*, Vol. 12, No. 2 (May 2011), pp. 171-189; Barbara Walter, "Does Conflict Beget Conflict? Explaining Recurring Civil War," *Journal of Peace Research*, Vol. 41, No. 3 (May 2004), pp. 371-388.

76 Nils Gleditsch et al, "Armed Conflict 1946-2001: A New Dataset," *Journal of Peace Research*, Vol. 39, No. 5 (September 2002), pp. 615-637.

77 Mason, et al., "When Civil Wars Recur: Conditions for Durable Peace after Civil Wars," *International Studies Perspectives*, Vol. 12, No. 2 (May 2011), pp. 171-189; Nicholas Sambanis, "Short- and Long-Term Effects of United Nations Peace Operations," *The World Bank Economic Review,* Vol.22, No.1 (January 2008), pp. 9-32; Barbara Walter, "Does Conflict Beget Conflict? Explaining Recurring Civil War," *Journal of Peace Research*, Vol. 41, No. 3 (May 2004), pp. 371-388.

inflated. Hence, I code it as 1 if a country experiences one or more civil conflicts in the same year and as 0 otherwise. I expect recurrent conflicts, which divert the resource and reduce the capacity of the state apparatus, to makes other conflicts more likely to return.

2.4 Model Specifications

The outcome variable of this research is the days that elapse since the previous episode of a conflict ends. The analytic instrument for this type of dependent variables is the survival analysis. It is mainly utilized to model such biological and medical processes as disease recovery, death and organ growth, with the goal of analyzing and evaluating the survival time according to the statistics gathered from experiment or investigation, and discussing the connections between survival time/outcome and the variety of covariates. For instance, the survival analysis examines how quitting smoking influences the recovery of lung patients, or changes in drivinghabits prevent a driver from suffering the same traffic accident. It was not long before this method was applied to the study of civil conflict recurrence.[78]

To examine the likelihood of recurring civil conflicts or the duration of peace after the first event of a civil conflict, I apply the Cox proportional hazards model. While the Weibull model is a parametric regression in nature, the Cox model is a semi-parametric regression.[79] It is superior to other survival models for the following four reasons:

First, I do not expect to retrieve the particular distribution of the duration times. Instead, I focus upon the relationship between covariates of interests (public goods) and the outcome (the recurrence of civil conflicts). Therefore, parametric models, such as the Weibull or Gompertze, do not serve my purpose.

Second, the Cox regression allows for the flexibility of the baseline hazard rate and does not require additional parametric assumptions.[80]

Third, the Cox Model facilitates a comparison between the short-term and long-term effect that time-varying covariates have upon the dependent variable. The conventional

78 For instance, Thomas Flores and Irfan Nooruddin, "The Effect of Elections on Post-Conflict Peace and Reconstruction," *Journal of Politics*, Vol. 73, No. 2 (April 2012), pp. 558-570; Mason, et al., "When Civil Wars Recur: Conditions for Durable Peace after Civil Wars," *International Studies Perspectives*, Vol. 12, No. 2 (May 2011), pp. 171-189. Also scholars employ the logit regression, such as Michael Quinn, David Mason, and Mehmet Gurses, "Sustaining the Peace: Determinants of Civil War Recurrence," *International Interactions*, Vol. 33, No. 2 (April 2007), pp. 167-193; Barbara Walter, "Does Conflict Beget Conflict? Explaining Recurring Civil War," *Journal of Peace Research*, Vol. 41, No. 3 (May 2004), pp. 371-388; Barbara Walter, "Bargaining Failures and Civil War," *Annual Review of Political Science*, Vol. 12 (2009) pp. 243-261, etc.

79 There are three types of regressions, namely parametric models, non-parametric models and semi-parametric models. Parametric models make assumptions about the form of the model and then utilize the statistics to evaluate the coefficients of the model. Linear models are the basis of parametric models. Non-Parametric models do not make assumptions and fit the mode using the numbers. In contrast, semi-parametric regression is characterized by partial known structure and partial unknown structure. In terms of the known structure, parameters need to be assessed.

80 Janet Box-Steffensmeier and Christopher Zorn, "Duration Models and Proportional Hazards in Political Science," *American Journal of Political Science*, Vol. 45, No. 4 (October 2001), pp. 951-967.

approach to empirically testing the short-term and long-term effect is dropping a conflict out of the dataset after a certain number years of the previous event. For instance, Bailey studied how state building efforts create durable peace in the post-conflict society. She dropped a conflict out of the dataset after ten consecutive years of peace, claiming that "most civil conflicts that recur after ten years are substantively different from their predecessors." Technically and theoretically, her argument is dubious. On one hand, we cannot tell which variables are time-varying unless statistical tests are exercised. On the other, the ten-year cutoff point is very arbitrary. Conversely, the Grambsch and Therneau non proportionality test provides accurate report upon the time nature of each variable.[81]

Last, the Cox regression allows for the adjustment of the calculations of all standard errors for clustering by conflict identity number.[82] In this way, I am able to control for the potential non-independence of multiple observations within the same conflict.

3. Findings and Analysis

This section briefly reports and analyzes the findings of empirical tests. As aforementioned, the empirical test covers 168 civil conflicts in 98 countries from 1960 to 2007. There are altogether 4, 330 observations in the original dataset. Due to missing data, the size of in-sample dataset is 138 conflicts in approximately 70 countries, ranging from 2, 708 observations to 3,031 observations.

Table 1, 2 and 3 present the findings. Coefficients in Table 1 and 3 are reported in exponential forms. In survival analysis, exponentiated coefficients greatly facilitate the interpretation of regression results. Such coefficients denote the odds change that a unit change of a variable causes on the part of the recurrence of a conflict. All exponentiated coefficients are positive numbers. A value of 1 or higher denotes that the impact of an independent variable upon the outcome variable is positive; in contrast, a value of less than 1 means a negative impact. In terms of the duration of post-conflict peace, a coefficient less than 1 means that the variable reduces the probability of recurrence; conversely, it makes peace less durable and increases the likelihood of relapse.

81 The fundamental assumption of the Cox models is the proportionality of the hazard function. Once the data structure violates this assumption, the Cox regression would become ineffective. With regard to the assumption per se and different measures in the applied statistics, please refer to Farid Ahmed, Paul Vos, and Don Holbert, "Modeling Survival in Colon Cancer: A Methodological Review," *Molecular Cancer*, Vol. 6, No. 15 (February 12, 2007), pp. 1-12.

82 D. Y. Lin and L. J. Wei, "The Robust Inference for the Cox Proportional Hazards Model," *Journal of the American Statistical Association*, Vol. 84, No. 408 (December 1989), pp. 1074-1078; Stephen Quackenbush and Jerome Venteicher, "Settlements, Outcomes, and the Recurrence of Conflict," *Journal of Peace Research*, Vol. 45, No. 6 (November 2008), pp. 723-742.

Table 1 Naïve Cox models examining the effects of state capacity upon recurring civil violence (naive models)

Independent variable	Model 1	Model 2	Model 3	Model 4	Model 5
State capacity	0.873	1.155	0.944	0.923	0.795
	(0.294)	(0.464)	(0.338)	(0.315)	(0.318)
Decisive victory	0.365***	0.911	0.364***	0.323***	0.346***
	(0.0976)	(0.438)	(0.0978)	(0.0853)	(0.0986)
State capacity * Decisive victory	-	0.358*	-	-	-
	-	(0.193)	-	-	-
PKOs	0.816	0.768	1.817	0.771	0.837
	(0.246)	(0.234)	(1.176)	(0.234)	(0.297)
State capacity * PKOs	-	-	0.441	-	-
	-	-	(0.351)	-	-
Natural resources	-	-	-	1.811	-
	-	-	-	(1.722)	-
State capacity * Natural resources	-	-	-	0.245	-
	-	-	-	(0.297)	-
ODA	-	-	-	-	0.0904
	-	-	-	-	(0.237)
State capacity * ODA	-	-	-	-	15.90
	-	-	-	-	(40.09)
Peace agreement	0.469**	0.470**	0.468**	0.440**	0.467**
	(0.155)	(0.157)	(0.155)	(0.150)	(0.158)
Ethnic conflicts	1.743**	1.810**	1.779**	1.972**	1.789**
	(0.483)	(0.482)	(0.486)	(0.549)	(0.529)
Territorial conflicts	0.600**	0.568**	0.600**	0.547**	0.608**
	(0.150)	(0.139)	(0.150)	(0.134)	(0.181)
Duration of the previous episode by day（Log）	1.036	1.024	1.043	1.027	1.026
	(0.0643)	(0.0639)	(0.0656)	(0.0608)	(0.0673)
Battle deaths of the previous episode by day（Log）	0.914	0.914	0.909	0.902*	0.916
	(0.0539)	(0.0545)	(0.0543)	(0.0555)	(0.0604)
GDP per capita（Log）	0.968	0.955	0.969	0.993	0.936
	(0.0704)	(0.0698)	(0.0696)	(0.0696)	(0.0958)
Concurrent conflicts	5.626***	5.605***	5.524***	7.202***	5.161***
	(1.947)	(1.914)	(1.915)	(2.663)	(1.728)

Continued

Independent variable	Model 1	Model 2	Model 3	Model 4	Model 5
Obs.	3031	3031	3031	2984	2708
Risk time in day	1091462	1091462	1091462	1074246	975051
Number of recurrence	123	123	123	123	111
Number of states	70	70	70	68	64
Number of conflicts	138	138	138	136	131

Note: numbers in the parentheses are the standard deviations of the regression coefficients; standard errors are adjusted for clustering on the dyad; *** p<0.01, ** p<0.05, * p<0.1.

Table 2 Results of Grambsch and Therneau Non-Proportionality Tests

Independent variable	Probability>K square				
	Model 1	Model 2	Model 3	Model 4	Model 5
State capacity	0.0000***	0.0023	0.0000***	0.0001***	0.0002***
Decisive victory	0.0033	0.5081	0.0037	0.0044	0.0139
State capacity * Decisive victory	-	0.0971	-	-	-
PKOs	0.3365	0.4652	0.2184	0.5116	0.4677
State capacity * PKOs	-	-	0.3544	-	-
Natural resources	-	-	-	0.5612	-
State capacity * Natural resources	-	-	-	0.3761	-
ODA	-	-	-	-	0.6052
State capacity * ODA	-	-	-	-	0.8561
Peace agreement	0.1463	0.1429	0.0732	0.0651	0.1610
Ethnic conflict	0.0021***	0.0358	0.0049	0.0041***	0.0094***
Territorial conflict	0.0199	0.1181	0.0399	0.0357	0.0285
Duration of the previous episode by day (Log)	0.0479	0.1334	0.0529	0.0452	0.1106
Battle deaths of the previous episode (Log)	0.1198	0.2900	0.1566	0.1908	0.2417
Per capita GDP	0.0422	0.1227	0.0465	0.0449	0.9025
Concurrent conflict	0.0001***	0.0012***	0.0002***	0.0005***	0.0012***
Global test	0.0000***	0.0111	0.0001***	0.0005	0.0031

Note: *p 0.05, **p 0.01, ***p 0.001. Estimate parameters are shown. The Global Test for each model is significant at the 0.001 level.

Overall, the statistical test lends partial support to H1 and full support to H2, but falsifies H3, H4 and H5. Table 1 and 2 present the non-proportionality test of the five models. Whereas Table 1 is the basis of the test, Table 2 contains the findings. The test is run on the basis of the five naïve Cox models in Table 1.

If a model fails to pass the non-proportionality test, it is necessary to add the interaction term of some variables and time. The interaction terms are used in strict conditions: First, the global test is significant at less than 0.0001 level. This is the critical point for the presence of temporal dependence. Second, the significant level of an independent variables is less than 0.01.[83] When the two conditions turn up concurrently, it means that a model and its independent variables violate the proportional risk assumption, [84] therefore, the regression results are invalid.[85] This paper tests Model 1 throughout Model 5, finding that Model 1 and Model 3 violate the assumption. In the two models, the time varying indicators include state capacity, decisive victory, ethnic conflict, and concurrent civil violence. I subtract the start date from the end date, add 1 to the difference and take the log, and then multiple the log by the four time varying indicators. Then, I place the four interaction terms back into the two models, and reran Model 1 and Model 3. The new findings are reported in Table 3.

Table 3 Refined Cox models examining the effects of state capacity upon recurring civil conflicts

Independent variable	Model 1	Model 2	Model 3	Model 4	Model 5
State capacity	34.55***	1.155	35.98***	0.923	0.795
	(19.70)	(0.464)	(20.76)	(0.315)	(0.318)
Time（Log）* State capacity	0.512***	-	0.515***	-	-
	(0.0594)	-	(0.0606)	-	-
Decisive victory	0.243	0.911	0.252	0.323***	0.346***
	(0.232)	(0.438)	(0.244)	(0.0853)	(0.0986)
Tune（Log）* Decisive victory	1.043	-	1.036	-	-
	(0.162)	-	(0.163)	-	-
State capacity * Decisive victory	-	0.358*	-	-	-
	-	(0.193)	-	-	-
PKOs	0.873	0.768	1.799	0.771	0.837
	(0.273)	(0.234)	(1.200)	(0.234)	(0.297)
State capacity * PKOs	-	-	0.484	-	-
	-	-	(0.360)	-	-

83 Stephen Quackenbush and Jerome Venteicher, "Settlements, Outcomes, and the Recurrence of Conflict," *Journal of Peace Research*, Vol. 45, No. 6 (November 2008), pp. 723-742.

84 Janet Box-Steffensmeier and Christopher Zorn, "Duration Models and Proportional Hazards in Political Science," *American Journal of Political Science*, Vol. 45, No. 4 (October 2001), pp. 951-967.

85 Mario Cleves, William Gould, and Roberto Gutierrez, *An Introduction to Survival Analysis Using Stata*, College Station, TX: Stata Press, 2004.

Continued

Independent variable	Model 1	Model 2	Model 3	Model 4	Model 5
Natural resources	-	-	-	1.811	-
	-	-	-	(1.722)	-
State capacity * Natural resources	-	-	-	0.245	-
	-	-	-	(0.297)	-
ODA	-	-	-	-	0.0904
	-	-	-	-	(0.237)
State capacity * ODA	-	-	-	-	15.90
	-	-	-	-	(40.09)
Peace agreement	0.461**	0.470**	0.452**	0.440**	0.467**
	(0.157)	(0.157)	(0.153)	(0.150)	(0.158)
Ethnic conflict	46.25***	1.810**	48.32***	1.972**	1.789**
	(33.55)	(0.482)	(35.46)	(0.549)	(0.529)
Time（Log）* Ethnic conflict	0.544***	-	0.542***	-	-
	(0.0827)	-	(0.0828)	-	-
Territorial conflict	0.771	0.568**	0.763	0.547**	0.608*
	(0.191)	(0.139)	(0.189)	(0.134)	(0.181)
Duration of the previous episode by day (Log)	1.050	1.024	1.057	1.027	1.026
	(0.0736)	(0.0639)	(0.0762)	(0.0608)	(0.0673)
Battle deaths of the previous episode（Log）	0.928	0.914	0.922	0.902*	0.916
	(0.0608)	(0.0545)	(0.0619)	(0.0555)	(0.0604)
GDP per capita（Log）	1.020	0.955	1.017	0.993	0.936
	(0.0777)	(0.0698)	(0.0778)	(0.0696)	(0.0958)
Concurrent civil conflict	2.987	5.605***	2.985	7.202***	5.161***
	(5.807)	(1.914)	(5.837)	(2.663)	(1.728)
Time（Log）* Concurrent civil conflict	1.146	-	1.143	-	-
	(0.426)	-	(0.427)	-	-
Obs.	2970	3031	2970	2984	2708
Risk time in day	1069183	1091462	1069183	1074246	975051
Number of recurrence	123	123	123	123	111
Number of states	70	70	70	68	64
Number of conflicts	135	138	135	136	131

Note: numbers in the parentheses are the standard deviations of the regression coefficients; standard errors are adjusted for clustering on the dyad; *** p<0.01, ** p<0.05, * p<0.1.

In Table 3, Model 1 supports H1 that state capacity exerts a non-linear influence upon recurring civil violence. The short-term effect of state capacity is positive with a coefficient of 34.55, although the effect becomes negative as time goes by, with a coefficient of 0.512. Specifically speaking, approximately 6.3 months or 198 days after the end of the previous episode of the conflict, state capacity turns from the menace of peace into consolidator of peace.[86] A tentative explanation is that in the initial stage of post-conflict period, extraction creates severe grievance out of the masses of people, and also makes former rebels strongly discontented, which in turn increases the risk of conflict recurrence. If the state survives the highly risky and unstable stage, the effect of increased extraction would take on. The cost of rebellion will rise, so that peace could endure a longer period of time.

Model 2 testifies to H2 that state capacity significantly reduces the risk of conflict where the previous episode of the conflict ends with a decisive victory. In Model 2, neither state capacity nor decisive victory shapes recurrence significantly. The significant predictor is their interaction term, whose impact is strong and in the predicted direction. Specifically speaking, if there is a decisive victory in the previous episode, a unit increase in state capacity would make the odd ratio of recurrence 64.2% less likely. This effect, moreover, is linear, and therefore time constant. In a decisive victory, the military capacity of rivals is entirely destroyed, administration and organization completely demolished, mobilization capacity handicapped, and there is a durable peace accordingly.[87] Under such circumstances, even if the government levies more tax upon the masses, discontented people would find it difficult to join the rebel group and organization.

H3 involves the likelihood that state capacity reduces conflict recurrence where there are international PKOs. This hypothesis is falsified by the test. In Model 3, the impact of state capacity upon recurrence is independent of the presence of PKOs. The introduction of PKO and its interaction term with time does not substantively change the substantive effect of state capacity. The effect is identical to that of state capacity in Model 1, first positive, then negative, the turning point being around the 222th day.[88] Model 4 does not support H4 concerning natural resources. Although the interaction term runs in the expected direction, neither natural resources nor the

86 In the Cox model, in order to compute the long term and short run effects, the operator needs to translate the regression coefficients into log hazard ratios. Specially, the command of "nohr" is added into the equation, then he uses the coefficient of short term effect divide that of the long term effect, and then take the log of the quotient. The answer is the turning point between the short term and long term effect.

87 Virginia Fortna, "Does Peacekeeping Keep Peace? International Intervention and the Duration of Peace after Civil War," *International Studies Quarterly*, Vol. 48, No. 2 (June 2004), pp. 269-292; Roy Licklider, "The Consequences of Negotiated Settlements in Civil Wars, 1945-1993," *American Political Science Review*, Vol. 89, No. 3 (September 1995), pp. 681-690; Edward Luttwak, "Give War a Chance," *Foreign Affairs*, Vol. 78, No. 4 (July/August 1999), pp. 36-44; Harrison Wagner, "The Causes of Peace," in Roy Licklider, ed., *Stopping the Killing: How Civil Wars End*, New York, NY: New York University Press, 1993, pp. 235-268.

88 Exp (3.583029 /.6631103) ≈ 222.

interaction term exerts a significant effect. This result may stem from this logic: natural resource rents help increase the revenue of the state without adding financial burden to tax payers, while decreasing the cost of rebellion and facilitating rebels' recruitment and mobilization.[89] Equally importantly, natural resources are deemed as a curse.[90] The rentier state can depend upon ample oil resource for the provision of public goods and services to the citizenry. The side effect, however, is that they would ignore institutional building, and lack the incentive to build up efficient financial and taxation department.[91]

Likewise, H5 is empirically unsupported. In Model 5, both state capacity, ODA and their interaction term fail to influence the outcome variable significantly. Furthermore, controlling for ODA, the effect of state capacity upon domestic peace is negative: a 1% increase of ODA as a percentage of central government expenditure makes recurrence 94.1% [15.9/(15.9+1)] more likely. This finding arguably comes because the negative impact of foreign economic assistance overrides its positive effect. On one hand, foreign assistance consolidates the state machinery without adding tax burden to citizens; on the other, aid is a strong material lure for rebels, because aid means more income to be expected.[92] In an ethnically torn society, foreign assistance tends to become the instrument of rule by the dominant ethnic group, with the result of neo-patrimonism. In this context, foreign money makes ethnic lines more salient, [93] and stimulates ethnic disputes. Besides, aid, which meets

89 Paul Collier, Anke Hoeffler, and Mans Soederbom, "On the Duration of Civil War," *Journal of Peace Research*, Vol. 41, No. 3 (May 2004), pp. 13-28; Michael Ross, "A Closer Look at Oil, Diamonds, and Civil War," *Annual Review of Political Science*, Vol. 9, 2006, pp. 113-137; Pavi Lujala, "Deadly Combat over Natural Resources: Gems, Petroleum, Drugs, and the Severity of Armed Civil Conflict," *Journal of Conflict Resolution*, Vol. 53, No. 1 (February 2009), pp. 50-71; Pavi Lujala, "The Spoils of Nature: Armed Civil Conflict and Rebel Access to Natural Resources," *Journal of Peace Research*, Vol. 47, No. 1 (January 2010), pp. 15-28; Pavi Lujala, Nils Gleditsch, and E. Gilmore, "A Diamond Curse? Civil War and a Lootable Resource," *Journal of Conflict Resolution*, Vol. 49, No. 4 (August 2005), pp. 538-621.

90 As in Christa Brunnschweiler, "Cursing the Blessings? Natural Resource Abundance, Institutions, and Economic Growth," *World Development*, Vol. 36, No. 3 (March 2008), pp. 399-419; Christa Brunnschweiler and Erwin Bulte, "The Resource Curse Revisited and Revised: A Tale of Paradoxes and Red Herrings," *Journal of Environmental Economics and Management*, Vol. 55, No. 3 (May 2008), pp. 248-264; Matthias Busse and Steffen Groening, "The Resource Curse Revisited: Governance and Natural Resources," *Public Choice,* Vol. 154, No. 1-2 (January 2013), pp. 1-20; Fernanda Brollo, Tommaso Nannicini, Roberto Perotti and Guido Tabellini, "The Political Resource Curse," *American Economic Review*, Vol. 103, No. 5 (2013), pp. 1759-1796; Zoega Gylfason, "Inequality and Economic Growth: Do Natural Resources Matter?" in Theo Eicher and Stephen Turnovsky, eds., *Inequality and Growth: Theory and Policy Implications*, Cambridge, Massachusetts, MIT, 2002; Jeffery Sachs and Andrew Warner, "Natural Resources and Economic Development: the Curse of Natural Resources," *European Economic Review*, Vol. 45, No. 4 (2001), pp. 827-838.

91 Deborah Brautigam, "Governance, Economy, and Foreign Aid," *Studies in Comparative International Development*, Vol. 27, No. 3 (Fall 1992), pp. 3-25; M. Moore, "Death Without Taxes: Democracy, State Capacity, and Aid Dependence in the Fourth World," in G. White and M. Robinson, eds., *Towards a Democratic Developmental State*, Oxford: Oxford University Press, 1994.

92 Herschel Grossman, "A General Equilibrium Model of Insurrections," *American Economic Review*, Vol. 81, No. 4 (September 1991), pp. 912-921; Herschel Grossman, "Foreign aid and Insurrection," *Defense Economics*, Vol. 3, No. 4 (1992), pp. 275-288.

93 Milton Esman and Ronald Herring, *Carrots, Sticks, and Ethnic Conflict: Rethinking Development Assistance*, Ann Arbor: University of Michigan Press, 2003.

the financial requirement in the short run, would in the long run weaken state capacity and legitimacy, [94] hinder the development of state capacity, weaken the foundation of economic growth, and in turn downsize the foundation of taxation, and potentially decrease the revenue of the government.[95]

In all five models, the impacts of control variables are distributed evenly. Among other things, concurrent civil violence exerts the strongest substantive effects upon return to conflicts. In Model 1, 2 and 5, controlling for other variables, concurrent civil conflict makes recurrence sharply increase respectively by 74.9%[2.987/(2.987+1)], 84.6%[5.605/(5.605+1)], and 83.8% [5.167/(5.167+1)]. In Model 1 and 3, however, probably due to the control of time variables, this variable becomes statistically insignificant. Moreover, its substantive effects have also become smaller: 53.3%[1.143/(1.143+1)] in the short run, and 53.4%[1.146/(1+1.146)] in the long. This finding shows that internal violence is infectious. It lends support to a proposition of both social contract theorists and neo-institutional economists that the fundamental obligation of the state is to provide a safe domestic environment for the citizenry. Such an environment is indispensable to the survival and multiplication of civilians. It is also how the government wins the support of the masses.[96] Civil wars, particularly those that are violent and enduring, severely threaten the life, property and personal development of individuals. It is not surprising that civil violence itself plays a paramount role when people evaluate the ability of the government to protect them. Once the ruling clique fails to protect people from threats by wars, its political legitimacy is greatly jeopardized.

In the current literature on civil conflict recurrence, a decisive victory tends to increase the likelihood of peace significantly, strongly and stably. According to Model 1 and 3 in Table 3, controlling for time factor, this variable loses its significance; controlling for state capacity in Model 2, however, this predictor does not exert an independent effect. Instead, its significant effect is dependent upon the interaction with state capacity. A decisive victory becomes a significant predictor for less conflict merely in Model 4 and 5, which control natural resources and foreign assistance. This difference might result from the reason that both theory and data structure fail to distinguish the victory of the government from that of rebels. Scholars concur upon

94 Deborah Brautigam, "Foreign Aid and the Politics of Participation in Economic Policy Reform," *Public Administration & Development*, Vol. 20, No. 3 (August 2000), pp. 253-264; Deborah Brautigam and Steven Knack, "Foreign Aid, Institutions, and Governance in Sub-Saharan Africa," *Economic Development and Cultural Change,* Vol. 52, No. 2 (January 2004), pp. 255-285; Nicholas Van de Walle, *African Economies and the Politics of Permanent Crisis, 1979-1999*, Cambridge University Press, 2001.

95 Deborah Brautigam, "Foreign Aid and the Politics of Participation in Economic Policy Reform," *Public Administration & Development*, Vol. 20, No. 3 (August 2000), pp. 253-264.

96 Jeffrey Herbst, *States and Power in Africa: Comparative Lessons in Authority and Control*, Princeton: Princeton University Press, 1996; A. Organski, "Theoretical Link of Political Capacity to Development," in Marina Arbetman and Jacek Kugler, eds., *Political Capacity and Economic Behavior*, Boulder, CO: Westview, 1997, pp. 44-76; Charles Tilly, "War Making and State Making as Organized Crime," in Peter Evans, Dietrich Rueschmeyer, and Theda Skocpol, eds., *Bringing the State Back in*, New York: Cambridge University Press, 1985, pp. 169-191.

the peace making effect of a decisive victory, but disagree upon which type of victory is more peace prone, empirically and theoretically. Among other things, Mason and his coauthors point out that the victorious government army usually does not intend to alter the interest structure of a society, thereby being unable to remove the basis of rebellion's popular will and information networks. Consequently, the risk of relapse is still out there.[97] Besides, the introduction of time factor complicates the relationship between decisive victory and the outcome variable. The specific connection remains to be explored in future research.

On the other hand, the effect of peace agreement is significantly stable. For instance, in Model 2, an agreement reduces the risk of war recurrence by approximately 32%[0.47/(1+0.47)]. In the other four models, the substantive effect stays relatively stable between 30.6%[0.44/(1+0.44)] and 32%. This finding robustly challenges the viewpoint that the third party, which is merely capable of bringing the enemies to the negotiation table, does not directly contribute to peace.[98] Moreover, this influence is not time varying and linear.[99] To put it differently, even if the two sides retain their military organization and the military ability to fight again, [100] the peace agreement is still capable of prolonging peace by assisting in the resolution of asymmetric information. In the meantime, there is still a possibility that the significant negative impact of a peace agreement comes as a result of model specifications.[101] In other words, this piece of evidence results from use of relative political capacity as a proxy for state capacity.

Another control variable with strong and significant impacts is ethnic conflicts. Furthermore, its influence is independent of time as well. For example, in Model 3, the function of ethnic conflict is first and foremost making war recurrence more likely. After approximately one year after the end of the previous episode, however, this function translates from augmentation into repellence.[102] Besides, territorial conflict significantly facilitates peace, although this effect becomes statistically irrelevant in Model 1 and 3. This effect seems to echo the proposition of Christopher Butler and Scott Gates that no dispute can be reconciled unless it is intended to control the central government.[103] As regards conflicts over territorial or policy issues, there is always room

97 T. David Mason and Patrick Fett, "How Civil Wars End: A Rational Choice Approach," *Journal of Conflict Resolution*, Vol. 40, No. 4 (December 1996), pp. 546-586; Mason, et al., "When Civil Wars Recur: Conditions for Durable Peace after Civil Wars," *International Studies Perspectives*, Vol. 12, No. 2 (May 2011), pp. 171-189.

98 Bumba Murherjee, "Why Political Power-Sharing Agreements Lead to Enduring Peaceful Resolution of Some Civil Wars, but Not Others?" *International Studies Quarterly*, Vol. 50, No. 2 (June 2006), pp. 479-504.

99 Mason, et al., "When Civil Wars Recur: Conditions for Durable Peace after Civil Wars," *International Studies Perspectives*, Vol. 12, No. 2 (May 2011), pp. 171-189.

100 Roy Licklider, "The Consequences of Negotiated Settlements in Civil Wars, 1945-1993," *American Political Science Review*, Vol. 89, No. 3 (September 1995), pp. 681-690; Barbara Walter, "Does Conflict Beget Conflict? Explaining Recurring Civil War," *Journal of Peace Research*, Vol. 41, No. 3 (May 2004), pp. 371-388.

101 Michael Doyle and Nicholas Sambanis, *Making War and Building Peace: United Nations Peace Operations*, Princeton and Oxford: Princeton University Press, 2006.

102 Exp (3.877782/0.6125133)=561.68.

103 Christopher Butler and Scott Gates, "Asymmetry, Parity, and (Civil) War: Can International Theories of Power Help Us Understand Civil War?" *International Interaction*, Vol. 35, No. 3 (May 2009), pp. 330-340.

for reconciliation. Last, it is beyond the expectation that the duration of and battle death of the previous episode of a conflict affect recurrence significantly, while the effect of the former variable is slightly positive and that of the latter negative. Similar function takes place of per capita GDP. This predictor has an insignificant negative effect primarily because economic growth motivates rebels to control important economic resources and production material, which offsets the peace making effect of this variable.[104]

4. Conclusion

This paper examines the impacts of state capacity upon recurring civil conflicts. The main argument is that state capacity works upon recurring civil violence via three mechanisms: in the long run, growth in state capacity increases the difficulty in and opportunity cost of militarily challenging the government; in the short run, however, enlarged extractive capacity not only increases the financial burden of tax payers, but also causes their grievance and sympathy with rebels; moreover, efforts of the government to tax more makes the peace commitment of the government less credible and endangers the fragile peace in the post-conflict period. As a result, the connection between state capacity and conflict return is non-linear. On one hand, a conflict whose previous episode ended up in a decisive victory makes it far more difficult for rebels to fight again even if efforts to tax more creates more grievance, for rebel groups are disabled of organizational and fighting capacity. On the other, international PKOs decrease the cost of incredible commitment, which in turn facilitates the consolidation of post-conflict peace. Conversely, natural resources such as oil and foreign economic aid empower the government without increasing the tax burden and consequently make conflict recurrence less likely.

Statistical analysis lends partial support to the hypotheses. Specifically speaking, there is indeed evidence that there is a non-linear relationship between state capacity and conflict relapse. At the turning point of the 198th day in the post-conflict period, the relationship turns from positive to negative. If the previous episode of a conflict ends up in a decisive victory, state capacity significantly lowers the risk of recurring conflicts. However, the relationship does not come under the significant influence of PKOs. Furthermore, neither natural resources nor foreign aid makes the effect of state capacity more peaceful. Instead, both stifle the independent effects of state capacity.

In the study of the causes of civil violence, scholars have found that a strong state machinery significantly exerts a substantial influence, which is not swayed by such measures of grievance as ethno-linguistic fractionalization index and Gini index. However, this paper demonstrates that conflict onset and recurrence do not follow

104 James Fearon, "Economic Development, Insurgency, and Civil War," in Elhanan Helpmann, ed., *Institutions and Economic Performance*, Cambridge, MA: Harvard University Press, 2008, pp. 292-238.

the same logic on account of changes in socio-economic and political environments. According to Cameron Thies, it is not that state capacity inhibits civil violence, but that civil violence weakens state capacity.[105] Moreover, the prevalence of civil violence makes it far more difficult for the government to provide protection and safety to the citizenry, thus making people aggrieved. With regard to the post-conflict state, it is a rational choice to strengthen state capacity. Nevertheless, according to the empirical findings of this paper, rulers should not increase extraction without taking into account the reactions of former rebels and the financial capacity of tax payers. Extraction which endangers these people is supposed to spoil the peace that comes with so much difficulty. Paul Kagame, President of Rwanda, adds a compelling note to this observation with his viewpoint and practice concerning governance of post-conflict African states. In 1994, the genocide killed at least 800 thousand people in Rwanda. In the next six years, wars, refugee crises and turmoil kept plaguing this state. Rwanda did not stabilize and achieve peace and economic development until Kagame took office in 2000. The primary consideration of the President is to restore national security and eliminate ethnic hatred. From his standpoint of view, security means "reconciliation, justice, restoration of an environment in which people could be united and co-live peacefully." For this reason, Kagame ruled with an iron hand, and his army and police keep a close eye upon the people.[106]

Equally important, this paper shows that peace building in the post-conflict society is essentially a domestic process controlling for state capacity. International factors like PKOs and foreign assistance increase the risk of conflict recurrence, instead of making the chance of peace larger. Consequently, first and foremost, the state needs to rely upon the state machinery and public support in order to maintain peace.

No research can exhaust everything of a research question. This essay is no exception to this golden rule. I would like to highlight the major limitations of this research as follows:

First, as aforementioned, no variable can capture everything of state capacity. My discussion focuses upon extractive capacity, the fundamental of state capacity. Taxation is the visible extractive activity. The government may also choose to extract resources via inflation. Milton Friedman and Ross Friedman point out that inflation is how the government robs the citizenry.[107] For all these, this fact is unknown to most people. If the government extracts resources via inflation, or the government does it through both inflation and taxation, what would happen to the duration of civil peace?

105 Cameron Thies, "Of Rulers, Rebels, and Revenue: State Capacity, Civil War Onset, and Primary Commodities," *Journal of Peace Research*, Vol. 47, No. 3 (May 2010), pp. 321-332.

106 Stephen Kinzer, *A Thousand Hills: Rwanda's Rebirth and the Man who Weaved it*, trans. Yan Fei et al. Beijing, China: World Knowledge Publishing House, 2014, pp.204, 247 ([美] 斯蒂芬 · 金泽:《千丘之国：卢旺达浴火重生及其织梦人》，延飞等译，北京：世界知识出版社 2014 年版，第 204、247 页).

107 Milton Friedman and Rose Friedman, *Free to Choose: A Personal Statement*, trans. Hu Qi et al, Beijing, China: Mechanical Industry Press, 2008, pp. 112-117 ([美] 米尔顿 · 弗里德曼、[美] 罗莎 · 弗里德曼:《自由选择》，胡骑等译，北京：机械工业出版社 2008 年版，第 112-127 页).

Second, extractive capacity is closely interconnected with the second order capacities, such as military/coercive capacity, bureaucratic/administrative capacity and institutional capacity. Despite this, they are not completely substitutable. This is also the limitation of my theory and empirical findings. To put it differently, my theory and empirical findings may not apply to state capacity of other forms. For example, in the five models in Table 3, whether extractive capacity is significant or not, it is in favor of peace. However, if the main variable is military capacity measured as military personnel as a percentage of population, the finding is that state capacity consistently increases the risk of conflict recurrence. Obviously, state capacity has a variety of connotations which differ in terms of measure and operationalization. Consequently, an equation which controls for the same set of variables leads to the same findings. It is worthwhile to explore the theoretical implications of such different findings. However complicated the connotation of state capacity is, its main content is limited. A comprehensive understanding of the impacts of state capacity upon recurring civil violence will be impossible until we figure out the connections between other forms of state capacity and conflict returns.

Third, the structure and characteristics of the data weakens the depth of my exploration and limits the reach of my empirical findings. One of my fundamental assumptions is that civil violence is incurred by rebels. In contemporary history, however, it is not usual that rebels start the conflict. For instance, on August 8, 2008, the Georgian government with the support of USA and Britain, attacked South Ossetia, which had developed a strong inclination for independence. The governmental army soon defeated the South Ossetia troops and occupied the capital city Tskhinvali. With regard to conflict recurrence, it is worthwhile to explore the extent to which the three mechanisms that this paper has clarified work on this type of conflict. However, popular datasets, including ACD, UCDP and civil war dataset compiled by Nicholas Sambanis, [108] all fail to set the variable of conflict initiator. Likewise, this paper, which proposes the three mechanisms, does not empirically account for the specific impacts due to lack of microscopic/organizational level data. This mission can only be accomplished by in-depth case studies.

Another significant finding is that a decisive victory in the previous episode of conflict makes peace more durable. Due to the goal of this research, I do not classify the decisive victory of a conflict. In fact, the victor can be the government or the rebels. How do they influence peace durable differently? Additionally, this paper finds that neither natural resources nor the interaction term of natural resources and state capacity affect the outcome variable significantly. This finding may result from the fact that

108 Refer to Nicholas Sambanis, "What Is Civil War? Conceptual and Empirical Complexities of an Operational Definition," *Journal of Conflict Resolution*, Vol. 48, No. 6 (December 2004), pp. 814-858. This dataset finds a lot of application in the empirical research on civil war resurgence, such as Michael Quinn, David Mason, and Mehmet Gurses, "Sustaining the Peace: Determinants of Civil War Recurrence," *International Interactions*, Vol. 33, No. 2 (April 2007), pp.167-193; T. David Mason, Mehmet Gurses, PatricBrandt and Jason Quinn, "When Civil Wars Recur: Conditions for Durable Peace after Civil Wars," *International Studies Perspectives*, Vol. 12, No. 2 (May 2011), pp.171-189.

this paper does not figure out who controls the natural resources. Empirically, in order to secure the income, rebels tend to risk everything in order to control the location of natural resources.[109] Whether natural resources are controlled by the government or rebels shapes the impact of extractive capacity of the government and the relative capacity of the two sides in the opposite manners.

It is also fascinating to find that the efforts of the state to increase extraction jeopardizes peace in the short run but consolidates peace in the long run. This finding runs counter to the traditional wisdom of the Chinese politics. Using the example in which the Chongzhen government in Ming Dynasty (1628-1644) failed due to excessive extraction, WU Si makes an insightful argument that "generally speaking, increased taxation empowers the state machinery of the empire. As a result, the risk of popular rebellion rises as well. ……Nonetheless, whenever taxation goes to the extreme so that tax payers cannot make both ends meet, or would be killed if they decline to do it, the risk is maximized. It is high time that this rule were put out of work. Unless the state machinery is repressive enough, weak in nature, or can be coopted, people would find that rebellion is the chance for survival. The "Chongzhen Dead End" comes to its bottom. At the bottom, it is beneficial to rebel whereas harmful to comply with the law. To a lesser extent, it is risky both to be a rebel or a benign citizen. This is the micro-foundation of the dead end."[110] Both theories sound reasonable and empirically valid, but reach different conclusions. How does this difference come about?

Another essay should be composed to explain this difference. To be brief, the two logics may not contradict each other. In the Chinese history, it is not uncommon that the masses revolt due to the severe oppression of the government. This regularity can be counted as a variant of the central argument of this writing. Since the Cold War, particularly the end of the Cold War, civil violence has mainly occurred in Africa, Asia, and the Middle East. In contrast to low extractive capacity of most African states, the Chinese dynasties were characterized by redundant taxation which stripped taxpayers, especially peasants of the basic livelihood and forced them to take up the arms. In other words, in the large cross-national dataset, the Chinese case is an outlier. Technically speaking, relative political capacity does not account for tax revenue as a percentage of GDP, which also inhibits the effect of such cases upon regression outcome: if the government has maintained a high rate of taxation, the expectation of the future tax rate would be high as well. Therefore, in the statistical sense, the government does not oppress the masses too much. In order to identify such effects, future researchers

109 For example, Collier and Anke Hoeffler, "Greed and Grievance in Civil War," *Oxford Economic Papers*, Vol. 56, No. 4 (August 2004), pp. 563-595; Michael Doyle and Nicholas Sambanis, *Making War and Building Peace: United Nations Peace Operations*, Princeton and Oxford: Princeton University Press, 2006; Virginia Fortna, "Does Peacekeeping Keep Peace? International Intervention and the Duration of Peace after Civil War," *International Studies Quarterly*, Vol. 48, No. 2 (June 2004), pp. 269-292; Sir Rustad and Helga Binngsboe, "A Price Worth Fighting for? Natural Resources and Conflict Recurrence," *Journal of Peace Research*, Vol. 49, No. 4 (July 2012), pp. 531-546.

110 Wu Si, *Invisible Rules: The True Play in Chinese History*, Shanghai, China: Fudan University Press, 2009, pp.175-176 (吴思：《潜规则：中国历史中的真实游戏》，上海：复旦大学出版社 2009 年版，第 175-176 页).

may add the square of RPC in the equation, [111] and proxy the non-linear impacts of tax revenue upon civil rebellions.

Still another worthy research question is how recurring civil violence shapes state capacity building. Scholars tend to find a negative impact of civil violence upon domestic politics, economy and society.[112] However, based upon the state building of modern European states, Charles Tilly argues that international and internal wars would ratch up the citizenry's tolerance of increase in taxation and cultivate nationalism, and eventually lead to the comprehensive expansion of the administration and financial department. This is how wars build the state.[113] To put it differently, wars empower the state. However, Tilly fails to distinguish war onset from war recurrence. Besides, his logic is opposite to the human institution and empirical findings in recent years. How could such differences be explained? This question may be more thought-provoking than how state capacity shapes recurring civil violence.

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111 In regression analysis, a regular practice of modeling the non-linear impact of a variable is to add the square of the variable into the equation.

112 For example, Paul Collier, V. Elliott, Havard Hegre, and Anke Hoeffler, *Breaking the Conflict Trap: Civil War and Development Policy*, New York, NY: World Bank Publication, 2003; Huth Ghobarah and Russett, "The Post-War Public Health Effects of Civil Conflict," *Social Science & Medicine*, Vol. 59, No. 4 (August 2004), pp. 869-884; Quan Li and Ming Wen, "The Immediate and Lingering Effects of Armed Conflicts on Adult Mortality: A Time-Series Cross-National Analysis," *Journal of Peace Research*, Vol. 42, No. 4 (July 2005), pp. 471-492.

113 References are mainly made to Charles Tilly, ed., *The Formation of National States in Western Europe*, Princeton: Princeton University Press, 1975; Charles Tilly, "War Making and State Making as Organized Crime," in Peter Evans, Dietrich Rueschemeyer, and Theda Skocpol, eds., *Bringing the State Back In*, Cambridge: Cambridge University Press, 1985, pp. 169-191; Charles Tilly, *Coercion, Capital, and European States, AD 990-1992*, Hoboken, NJ: Willey-Blackwell, 1992.