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Keywords: State collapse, fragile states, failed states, regime types, synchronic analysis, diachronic analysis, csQCA

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Contact details:
Universität Duisburg-Essen
Institut für Politikwissenschaft
Lotharstr. 65
47057 Duisburg
Phone: +49-203-3792021
Email for correspondence: daniel.lambach@uni-due.de

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1. Introduction

What are the causes of state collapse? Recently, Libya, Syria, Mali or the Central African Republic have again drawn attention to a phenomenon that has long been associated with countries like Somalia and the Democratic Republic of the Congo. This has reinvigorated interest in the "collapsed state" paradigm which has attracted considerable political, academic and popular interest. The events of 9/11 had placed it firmly onto the global security agenda and Western policymakers had started to view collapsed states as sources of threats ranging from terrorism and organized crime to nuclear proliferation and refugee flows. This has been paralleled by a burgeoning number of academic publications and research projects (Bueger/Bethke 2014).

Despite widespread interest, we still know surprisingly little about the causes of this phenomenon. The majority of scholarly contributions focuses either on conceptual issues, a critique of the overall discourse or on policy options for Western countries. This is partly due to a lack of reliable and valid data – large-N approaches are forced to rely on proxy measures of dubious quality. To address this lacuna, we took a different methodological approach and employed Qualitative Comparative Analysis (QCA) for an inquiry into the causes of state collapse.

We understand state collapse as an extreme form of the more widespread phenomenon of state fragility. It is a situation where formal state institutions have no meaningful capacities in three core dimensions of statehood: 1) making and implementing binding rules, 2) controlling the means of violence, and 3) collecting taxes, for an uninterrupted period of at least six months. Using these criteria, we investigate 15 cases of state collapse in the period 1960-2007 utilizing an original dataset. The first analysis is a synchronic comparison with other fragile states that did not collapse, the second a diachronic comparison of periods of collapse with other times of crisis in the same countries that did not result in state collapse.

Our findings highlight the impact of several risk factors: the militarization of political actors, an extremely low per-capita income, a lack of societal cohesion based on precolonial identities and factionalist politics, recent political transition as well as a decline in state resources. In contrast, other conditions which previous theories considered to be risky – e.g. informal modes of governance, personalist regimes, government obstruction of the bureaucracy and the military, or regime type – offer less explanatory value.

In the next section, we explain our research design including the cases investigated and our reasons for choosing to use QCA. The third section contains a review of the existing literature,

highlights crucial shortcomings of previous approaches and presents hypotheses on the causal structure of state collapse. The following part then discusses the conditions that we examined as potential risk factors in the QCA. The fifth section details the QCA results. The sixth section presents our interpretation of the results and sketches causal explanations for state collapse. It also discusses the problems we encountered in our attempt to jointly interpret the results from two separate analyses. As these challenges prevented us from arriving at a clear-cut causal model of state collapse as initially intended, we judiciously weigh the implications of our results for the field of state fragility research at the end. Against this backdrop we propose methodological and thematic avenues for future research.

2. Research Design

Albeit conceiving of statehood as a continuum, we focus our research on the extreme end of dysfunctionality which we call "state collapse". We adopt Call's (2008) and Ulfelder's (2012) arguments to use this narrow term instead of the broader, less precise notions of state failure or fragility. The term state collapse characterizes a condition, not a process even though a protracted process usually precedes the condition of "collapse". State collapse, as we understand it, is the binary opposite to a modified Weberian ideal-type of the state. We define the state as an institution that is characterized by monopolies of rule-making, violence and taxationover the population residing within a bounded territory. Employing an essentialist two-valued logic of concept formation (Goertz 2006: 35), we define state collapse as the situation where the state has no significant capacities in all of its three core dimensions: 1) making and implementing binding rules, 2) controlling the means of violence, and 3) collecting taxes, for an uninterrupted period of at least six months. We thus establish a threshold between the two units of our comparison, collapsed and non-collapsed states.[1]

To address the weaknesses of prior attempts at causal explanation, we employ a medium-N research design. Compared to small-N designs, such an approach offers the possibility to include multiple explanatory variables and lowers risks of omitted variable bias. It also allows for more representative results. Compared to large-N designs, our approach is better at dealing with equifinality (Bennett 2004: 38-40), i.e. the assumption that different paths can lead to the same outcome. It is also more feasible to collect original data for a medium number of cases

[1] For a more extensive discussion of our conceptual approach, see Lambach, Johais and Bayer (forthcoming).

than for a larger one. Finally, there is only a limited number of cases to draw from which militates against most quantitative approaches.

To leverage the advantages of this medium-N approach regarding equifinality, we conduct two separate comparisons with different sets of control cases. In both instances, control cases were selected using a pairwise "Most Similar, Different Outcome" (MSDO) approach (de Meur/Berg-Schlosser 1994, Rihoux 2006). The first control group for the synchronic or "horizontal" comparison consists of other countries that are structurally similar to the collapse cases and that also exhibited signs of political instability without fully collapsing. The second control group for the diachronic, "vertical" comparison consists of the same countries as the collapse cases but at different points in time. While the first comparison is supposed to indicate structural differences between collapsed and non-collapsed states, the second was meant to identify more dynamic causes of state collapse by asking why collapse occurred at a particular time.

2.1 Cases

In a previous paper (Lambach, Johais and Bayer forthcoming), we identified 17 cases of state collapse between 1960 and 2007. 15 of these cases are included in the present analysis.[2] Cases are described in country-year format, where the year denotes the onset of state collapse (Outcome = 1). Control cases (Outcome = 0) for the synchronic comparison (see Table 1) were selected to maximize their initial similarity to the collapse cases according to the following criteria: geographic region, time period, level of political instability, size of population and territory, and level of economic development.[3] Case selection for the diachronic comparison focused on periods of significant crisis (e.g. rebellion, coup, economic crisis) that did not result in collapse (Outcome = 0). These instances of crisis took place at least 5 years prior to collapse or at least five years after the state was no longer collapsed.[4]

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2 We excluded Afghanistan 2001 and Iraq 2003 from our analysis. We consider these two cases to be outliers due to the strong impact of foreign military intervention on the stability of the state.

3 We always tried to identify periods of instability in the control cases as close as possible to the beginning of the collapse in our positive case. The maximum deviation is seven years: Congo Kinshasa 1960 – Nigeria 1967; Laos 1960 – Cambodia 1967; Tadjikistan 1992 – Uzbekistan 1999.

4 We found no control case for Bosnia-Herzegovina because it cannot be considered a fully sovereign state since 1995, due to the ongoing *de facto* trusteeship by the international community. Furthermore, we only use only one diachronic control case per country, so there is only one control case (Zaire 1977) for both collapse cases of Congo-Kinshasa 1960 and Zaire 1996.

Table 1: Cases of State Collapse and Control Cases

Collapse Case	Collapse Year	Synchronic Control Case	Year	Diachronic Control Case	Year
Afghanistan	1979	Sri Lanka	1983	Afghanistan	1973
Angola	1992	Mali	1991	Angola	1975
Bosnia-Herzegovina	1992	Croatia	1995	-	-
Chad	1979	Ethiopia	1974	Chad	1965
Congo-Kinshasa	1960	Nigeria	1967	Zaire	1977
Zaire	1996	Sudan	1992	-	-
Georgia	1991	Moldova	1992	Georgia	2003
Guinea-Bissau	1998	Lesotho	1998	Guinea-Bissau	1980
Laos	1960	Cambodia	1967	Laos	1989
Lebanon	1975	Iran	1979	Lebanon	2005
Liberia	1990	Burundi	1993	Liberia	1979
Sierra Leone	1998	Guinea	1996	Sierra Leone	1967
Somalia	1991	Niger	1990	Somalia	1978
Tadjikistan	1992	Uzbekistan	1999	Tajikistan	2010
Uganda	1985	Burkina Faso	1987	Uganda	1971

2.2 Method: Why QCA?

We use Qualitative Comparative Analysis (QCA) as our method of analysis. QCA was developed more than 25 years ago (Ragin 1987) and has slowly but steadily gained recognition as an accepted methodology in the social sciences. Recent years have seen a rapid expansion of QCA use in research designs while the methodology has been continually expanded and refined (Marx/Rihoux/Ragin 2013: 11, Rihoux 2013: 235).[5]

QCA is a tool for the systematic comparison of cases. It contains elements of qualitative and quantitative approaches, but it is grounded in the qualitative tradition of recognizing the importance and uniqueness of each individual case. It assumes that causality is complex, meaning that social phenomena have more than one cause, that these causes interact with each other in complex ways and that different instances of the same phenomenon may have different causes. QCA employs Boolean algebra to derive combinations of sufficient and necessary conditions for a particular outcome (in this case, state collapse).

[5] The burgeoning literature on QCA is too large to be reviewed here. Articles by Berg-Schlosser et al. (2009) and Wagemann and Schneider (2010) are good introductions, while the volumes by Schneider and Wagemann (2012) and Rihoux and Ragin (2009) provide more detailed instructions.

In classic or "crisp-set" QCA (csQCA), both conditions and outcomes are coded in binary. For instance, for a condition "Population size" a threshold could be defined as "20 million people". Each case would then be assigned a value of 0 (state has fewer than 20 million inhabitants) or 1 (state has at least 20 million inhabitants). These values are then entered into a truth table, from which solution terms are derived using Boolean algebra.

The limitations imposed by the dichotomous coding of conditions and outcomes incurs a loss of information about individual cases. Depending on the distribution of raw values among cases, it can also group together very disparate cases that happen to find themselves on the same side of the threshold. To offer more nuance, two alternative methods have been developed, fuzzy-set QCA (fsQCA, Ragin 2000) and Multi-Value QCA (MVQCA, Cronqvist/Berg-Schlosser 2009). Both methods broadly use the same approach as csQCA, but allow conditions with more than two values.

In QCA, two issues need special attention: contradictions and logical remainders. Contradictions occur when cases with different outcomes have the same set of conditions. There are various strategies for dealing with contradictions, but the general advice is that these should be prevented as much as possible (Rihoux/de Meur 2009: 48) since some or all of the contradictory cases will have to be dropped from the analysis. Logical remainders are combinations of conditions that are not associated with a particular outcome because no empirical case had this particular set of values (the problem of "limited diversity", see Schneider/Wagemann 2012: 151-177). It is permissible to make "simplifying assumptions" about how these combinations would have turned out if there had been an empirical case with these characteristics to arrive at a more parsimonious outcome, but care must be taken not to make unrealistic assumptions just to arrive at a better result.

We chose to use QCA because there are strong indications that the causality of state collapse is complex (see 3.): Previous research had indicated that there are multiple causal paths that lead to collapse (equifinality) and that there is no single necessary or sufficient condition that can explain the occurrence of collapse, but that conditions would work in combination with one another (conjunctural causation) (Wagemann/Schneider 2010: 378). The limited number of cases would have also made statistical methods very unreliable. Since we test hypotheses involving "qualitative" risk factors in particular, a binary distinction between membership and non-membership in a set is sufficient for our purposes. The broader range of values that fsQCA and MVQCA allow would have made coding decisions too complex and arbitrary. We therefore opted for csQCA.

3. Methodological approaches and hypotheses about the causal structure of state collapse

Even though fragile, failed and collapsed states[6] have received a lot of attention in recent years, there is very little systematic empirical research on the causes of these phenomena (exceptions are Bates 2008a, Carment et al. 2008, Englehart 2007, Iqbal/Starr 2007).[7] In contrast, the theoretical and conceptual literature is vast and has put forward a broad range of causal hypotheses (see Bethke/Lambach 2012 for a detailed review). In other words, there is a lot of theory with little empirical grounding. Our paper represents an attempt to improve the empirical foundations of the field.

There are many single-case studies which discuss whether a particular state can be classified as fragile, failed or collapsed.[8] The heterogeneity of these cases suggests that the path to state collapse is a complex and multicausal process. Several studies also suggest that the process is equifinal, i.e. that several different ways can lead to the same outcome. For instance, Englehart (2007) proposes a model of "self-destructive despotism" that shows how governments in Somalia and Afghanistan deliberately destroyed state institutions to remove checks and balances on their exercise of power and prevent rivals from harnessing alternative sources of power. In response, Lambach (2009) argues that Englehart's model cannot explain state collapse in Lebanon and Tajikistan. Instead, Lambach proposes a second causal model of collapse based on these cases that is characterized by the polarization of national politics and the militarization of political actors. This notion of causal complexity is further supported by the results of Grävingholt, Ziaja and Kreibaum (2012, see also Call 2011) who identify disctinct types of fragile states.

There have been a few attempts to analyze the causes of state collapse with large-N approaches. Earlier studies had been mainly concerned with developing early warning systems (e.g. Baker/Ausink 1996, Baker/Weller 1998, Norton/Miskel 1997). In these and other projects, state

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6 Even though these are distinct terms, scholars frequently use them interchangeably. This was especially prevalent during the field's early years. So as not to limit our review on what is, for many, semantic grounds, we include works that use all of these terms in our survey. As we assume state collapse to be a condition with a prior dynamic of decay of state institutions, indicators of state fragility may act as causes of state collapse.

7 The literature focuses on, e.g., conceptual issues (Call 2008, Grävingholt/Ziaja/Kreibaum 2012), the provision of governance in fragile states (Risse 2012, Clements et al. 2007, Meagher 2012), normative critiques of the entire discourse (Bilgin/Morton 2002, Hameiri 2007), the links between fragile states and terrorism (Menkhaus/Shapiro 2010, Simons/Tucker 2007), the implications for development policy (Hout 2010, World Bank 2011) or the efficacy of military interventions and externally-led statebuilding (Crocker 2003, Fukuyama 2004, Krasner/Pascual 2005).

8 These studies are too numerous to mention. Prominent edited collections of such case studies are Rotberg (2003), Schneckener (2006) and Zartman (1995).

failure is frequently conflated with other phenomena like civil war or ethnic conflict so that the indicators used are relatively general signs of political instability. The largest project of this kind is the State Failure Task Force (SFTF, called the Political Instability Task Force, PITF, since 2003). This group, established in 1994, tried to identify correlates of state failure in order to develop a model that could predict state failure two years in advance with sufficient precision (Esty et al. 1995: iii). However, the SFTF was only able to identify 20 cases of state failure between 1954 and 1994 which were insufficient for the methods that it wanted to use. Therefore, the SFTF broadened its concept of state failure by including four different kinds of crisis: revolutionary wars, ethnic wars, adverse regime change as well genocides/politicides (Esty et al. 1995: 1). From phase I to phase V, the Task Force has managed to improve the accuracy of their "global model" from 60% to 80% (Esty et al. 1995, Goldstone et al. 2005). By now, this model has become quite useful for early warning. It is, however, less amenable for causal research due to its overly broad conceptualization of state failure.[9]

The lack of suitable datasets that measure the degree of stateness has long been a critical impediment to quantitative causal research. Various projects have tried to develop instruments to quantify state fragility, like the Failed States Index (FSI) (Baker 2006, Baker/Weller 1998, Fund for Peace 2005), the Index of State Fragility (ISF) (Carment et al. 2006, Carment et al. 2008), the State Fragility Index (SFI) (Marshall/Cole 2008, Marshall/Goldstone 2007) and the Index of State Weakness (ISW (Rice/Patrick 2008). The FSI and the ISF are explicitly designed as early warning mechanisms and also employ a very broad conceptualization of fragile statehood (for a critical appraisal see Margolis 2012). Only the ISF has been used for causal research thus far (Carment et al. 2008).

These indices are usually composed of aggregate data and other indices that cover a wide thematic spectrum from infant mortality and the deforestation rate to GDP/capita. The enormous breadth of component indicators severely limits the content validity of the overall constructs (Bethke 2012). It is not clear what these indices measure – it is definitely not state fragility, but rather a general, but unspecific *mélange* of social, political and/or economic crisis. Causal research becomes *de facto* impossible with these indicators since most potential causal conditions are already part of the definition of the concept that is to be explained. Furthermore, temporal coverage of these indices is limited, with only the SFI offering data for years as far back as 1995.

[9] Howard (2008) nevertheless uses SFTF data to develop a causal model of state failure. For critiques of the SFTF's work see King/Zeng (2001), Lambach/Gamberger (2008) and Milliken/Krause (2002).

Due to the limitations of major indices, quantitative research designs tend to draw on other variables to operationalize state fragility and state collapse. For instance, Iqbal and Starr (2007) use the standardized authority code "-77" from the Polity IV dataset which denotes a period of "Interregnum", a complete breakdown of political authority (Marshall/Gurr/Jaggers 2010). This code identifies 25 cases with a total of 93 country-years as failed states. However, proxies suffer from similar validity problems as indices.

The lack of sound data is a more general weakness of quantitative approaches. Hence, many researchers call for developing new measures of statehood (Bates 2008b: 10, Englehart/Simon 2009: 110) but there has been no convincing approach that addresses this lacuna. Data quality issues also extend to the measurement of possible causes. Data for these measures are not missing at random – instead, the availability of consistent, national-level data often depends on the statistical capacity of the state itself. Therefore, we can expect a higher rate of missing data in fragile states (Bates 2008a). While these gaps can be bridged through various methods of imputation, this is only a "least-worst" solution.

Beyond the methodological issues, current quantitative studies suffer from two key weaknesses. First, quantitative approaches assume causality to be a) "unifinal", i.e. that variables have the same effect for all cases, b) additive, i.e. that the causal effect of independent variables can be isolated from each other (an issue which can be addressed by using interaction terms, but only a small number of these can realistically be included in a model), and c) symmetric, i.e. when A leads to B, not-A will lead to not-B (Wagemann/Schneider 2010: 378). However, the literature suggests that these assumptions, especially the first one, are probably not applicable to state collapse.

Second, the studies surveyed above only test a few hypotheses available from the theoretical literature. Instead of generating their own data, the authors rely on data that had been previously collected for other purposes, what Englehart and Simon call "pre-existing off-the-shelf-data" (Englehart/Simon 2009: 110). This means that many potentially interesting explanations are not being investigated for want of suitable data, favoring structural explanations for which data are much more readily available than for dynamic factors. Yet most authors agree that the political dynamics are especially important in influencing the outome during periods of political crisis (e.g. Bates 2008b, Goldstone et al. 2005: 15-20, Rotberg 2004: 25-26). Lacking dynamic data, this proposition cannot be tested quantitatively, raising the possibility of omitted variable bias (King et al. 1994: 168-181).

Based on this review, we conclude that for our analysis we should follow the ontological assumption that the causal structure of state collapse is complex and equifinal. Hence, we formulate two basic configurational hypotheses about the causal structure of state collapse:

> H_1: No individual risk factor, or combination of risk factors, is a necessary condition of state collapse.
>
> H_2: Certain combinations of risk factors are sufficient conditions of state collapse.

H_2 represents a combination of INUS conditions. INUS stands for "*Insufficient* but *Nonredundant* part of an *Unnecessary* but *Sufficient* condition" (Mackie 1965). Mahoney describes INUS conditions as "parts of larger combinations of factors that are jointly sufficient for outcomes. Thus, while an INUS condition is itself neither necessary nor sufficient for an outcome, it is part of a larger combination of factors that is sufficient for an outcome" (Mahoney 2010: 131, Fn. 22). We treat potential explanatory conditions as (combinations of) risk factors that can be "plugged into" these configurational hypotheses. As outlined above (see 2.), these assumptions as well as the limited number of cases, prompted the choice for QCA.[10]

4. Hypotheses on risk factors of state collapse

Several strands of literature suggest factors that potentially increase the danger of state collapse. We gathered data for 27 factors, e.g. dependency on primary commodity exports (Bates 2008a), high population density (Goldstone et al. 2000), openness to trade (Woodward 1999, Goldstone et al. 2005), prior implementation of Structural Adjustment Programs (Ruf 2003) or other forms of economic liberalization (Bussmann/Schneider 2007). However, preliminary analyses show that only nine factors offered sufficient explanatory value to discriminate between collapsed states and those that are merely fragile.[11] The theories about the effects of these factors are presented in more detail in the remainder of this section.The names given in parentheses are the associated conditions from the QCA; section 4 describes their exact operationalization and measurement.

[10] So far, there has only been one attempt to use QCA for causal research of state collapse. Clément (2004) conducted a study of only three cases of collapse (Yugoslavia, Lebanon and Somalia). However, her study is of limited utility because the small N forced her to use very few and very general conditions. In addition, she has a functionalist understanding of statehood that is at odds with our institutionalist approach.

[11] See Table 3 in the Appendix. Results from preliminary analyses are available on request.

Fragile Statehood and Civil War

As a first source for theoretical explanations of state collapse, the literature on fragile statehood and civil war addresses questions of state capacity and threats to the stability of states. With the research field developing against the backdrop of international peacebuilding objectives and security interests, its focus is mainly on the security domain. One of its core findings is that if the formal security apparatus of the state – the military, the police, the justice system – is unable to deter or punish the use or threat of force by non-state actors, the *raison d'être* of the state is in question (Vinci 2006, but see Krause/Milliken 2009 for a broader view). Likewise, Lambach (2009) points to the detrimental effect of the militarization of political actors (MILIT) in the context of a polarized political system.

At times, the capacity of formal security institutions is deliberately sabotaged from the inside. Englehart (2007) argues that weak regimes may weaken security forces to prevent the formation of alternative centers of powers within the state. This point is also made by Frisch (2002) who notes that embattled rulers will set up multiple security institutions that keep each other in check. In some cases, these rulers will create unofficial militias outside the formal state apparatus that operate under their personal control. These "pro-government militias" (Carey/Mitchell/Lowe 2013) directly undermine state control of violence even as they ostensibly support the regime (UNOFF_MILITIA).

Governance and Regime Type

There is a wealth of theories how specific regime types and modes of governance affect the resilience of state institutions. Concerning transitions to democracy, Bates (2008a: 8-9) argues that demands for democratization threaten autocratic incumbents who turn to predatory and repressive tactics to disrupt the opposition, pushing protesters towards violent rebellion. In a similar vein, Collier cautions that democratization "might at best be a two-edged sword, introducing the possibility of accountability but at the price of a greater risk of large-scale political violence" (Collier 2009: 233, see also the review by Zulueta-Fülscher 2014: 32-35). Transitions in fragile states presumably differ from transitions in non-fragile setting: Whereas the failure mode of transition in a consolidated state is the reassertion of autocracy, the failure mode in a fragile state is more likely to be civil war and state collapse (Lambach 2013) (TRANSITION). This literature also suggests repression as a risk factor because it provides people with a motivation to mobilize against the government (Saxton 2005), especially if this

government only represents, or is perceived to represent, an ethnic minority of the population (Bates 2008a: 6-8) (REPRESSION).

Another factor is factionalism which has recently emerged as a promising addition to studies of how regime type affects the risk of collapse. Whereas Allen (1995) and Gros (1996) see autocratic regimes as more prone to state collapse, Carment et al. (2008) consider hybrid regimes as more at risk. Goldstone et al. (2005) broaden this discussion and claim that hybrid regimes with a high degree of factionalism are most likely to fail. According to this point of view, factionalism represents a style of politics that is primarily concerned with parochial interests that erodes shared institutions in society (FACTIONAL).

Another field of research explores how rent-seeking behavior of elites relates to state collapse, using concepts like neopatrimonialism, personalism, clientelism, rentierism or informal politics (e.g. Englehart 2007, Reno 2000, van de Walle 2004). However, these practices can be highly functional and help stabilize a regime, sometimes for long periods of time, even as they erode the institutions on which state authority rests. But this assumption only holds if the country rests on a solid economic basis (INCOME). In addition, rent-seeking practices do not cause state collapse by themselves because they can be found in pretty much all fragile states and even in some more developed ones. Crucially, neopatrimonial and clientelist systems depend on a steady influx of rents. If a sudden decline in government revenues (GOV_REV) dries up the opportunities for personal gain, this motivates actors to break with the ruling coalition (Allen 1999, Bates 2008a). Another factor that can put neopatrimonialregimesunder stress is the reduction of external financial and military aid (AID). Due to the relatively high number of cases of state collapse in the early 1990s some argue that the drop of superpower patronage following the end of the Cold War had led to the collapse of states (e.g. Menzel 2001, see van de Walle 2004 for a contrary position).

State Formation

Finally, the literature on state formation highlights that states do not exist apart from society and are shaped by history. Buzan (1991) argues that society needs an idea or an image of the state as a legitimate political authority. But societies that are little more than a decentralized collection of social units without an overarching system of symbols and values represent an infertile ground for state-building. Migdal characterizes these as “weblike societes” (Migdal 1988: 39) which mainly consist of local organizations with local constituents, usually led by some form of traditional authority (chiefs, landlords, elders etc.). Boone (2003) further shows

how strong institutions in rural society impede state-building efforts in African post-colonial states. However, due to the ubiquity of these social forms in post-colonial countries, we want to focus on those that are the most long-lived and thus, presumably, best institutionalized. Therefore, we restrict this factor to those cases where a localized polity existed in pre-colonial or pre-imperial times that did not cover the entire territory of the post-colonial state (LOCAL_POLITY).

5. Identifying Patterns of Risk Factors: Results of the QCA

Table 2 contains those nine conditions (see 4.) that we used during QCA and their respective operationalization. Whenever valid data were available in other datasets, we used this as a base for our coding. For some conditions, we had to collect our own data, usually from secondary literature about cases (these are marked as "qualitative research" in the column "Source"). This entailed the production of detailed case studies for all 43 cases (15 collapse cases, 13 synchronic control cases, 15 diachronic control cases). To maximize the reliability of coding decisions, a set of detailed coding rules were developed which are briefly summarized in the column "Description and coding rules".[12]

To maximize reliability, the first case studies were conducted independently by two researchers. We checked the intercoder reliability applying a simple percentage agreement method (Lombard et al. 2002: 593). By the second case study, intercoder reliability had reached a satisfactory level of 81.25% so further case studies were conducted by a single coder and then evaluated and discussed by the other researchers.

For both comparisons, the number of conditions (nine) is slightly too high for meaningful results. Marx (2006) suggests a maximum ratio of 0.33 conditions per case (0.25, if there are 6-7 conditions, 0.2 for 8 conditions). For our comparison of 30 and 28 cases, respectively, this leaves a "ceiling" of seven conditions. Marx and Dusa (2011) give even lower numbers if one wants to minimize the risks of random results.

[12] The full coding guidelines are available on the project homepage at http://www.lehrstuhl-ibep.de/39-0-DFG-Projekt-Staatskollaps.html, together with the entire dataset.

Table 2: Initial list of conditions

Condition	Values	Description and coding rules	Source
AID	0= constant or rising int. milit. or financial aid 1= cut back of financial or military aid is announced or carried out	Trend in ODA and military aid (milit. Hardware, milit. Training, troops) over the last five years prior to collapse	Qualitative research; "ODA" and "AID" by Wejnert, Barbara (2007): Nations, Development, and Democracy, 1800-2005. ICPSR20440-v1.[13]
FACTIONAL	0= no factionalism 1= factionalism	Based on variable PARCOMP from Polity IV dataset. PARCOMP 0,1,2,4,5 = 0 PARCOMP 3 = 1	Polity IV or own coding according the coding rules of Polity IV
GOV_REV	0= rising or constant state revenues 1= decline of state revenues	Total Revenues: In local currency as percentage of the GDP at current prices in local currency Gov_rev: Total Revenue of the year (a) preceding the collapse divided by Total revenues (b) three years before the collapse 0= total revenues (year a)/total revenues (year b) ≥ 100% 1= total revenues (year a)/total revenues (year b) < 100%	Revenue data from Lucas/Richter (2012) GDP data in local currency from the United Nations National Accounts Main Aggregates Database[14]
INCOME	0= Income ≤ 5% of the global average 1= Income > 5% of global average	GDP per Capita/Global Average GDP per Capita (both in US-$)	United Nations - National Accounts Main Aggregates Database
LOCA_POLITY	0= other 1= local precolonial/ preimperial polity or polities	Local Polity has to cover a significant part of the current state territory but is not congruent with current state territory.	Qualitative research
MILIT	0= relevant political actors are unarmed 1= relevant political actors are armed	Armed: systematic armament in form of militias, armed wings etc.	Qualitative research
REPRESSION	0= no or low level of repression 1= intermediate to high level of repression	Average of PTS Data (both State Department and Amnesty International scores) for the three-year period prior to collapse 0 = PTS score 1-2 (no repression) 1= PTS 3-5	Political Terror Scale[15]; Qualitative research
TRANSITION	0= Collapse does not follow a transition period 1= Collapse follows directly after a transition-period.	A transition is coded if the Polity Score of the preceding year is a) coded as -88 b) changes at least 3 points compared to the previous year	Polity IV

[13] http://www.icpsr.umich.edu/icpsrweb/ICPSR/studies/20440
[14] http://unstats.un.org/unsd/snaama/Introduction.asp
[15] http://www.politicalterrorscale.org/

UNOFF_MILITIA	0= no informal militias under governmental control 1= informal militias under governmental control	Informal militias under control of the government but: a. Not financed from official budget b. No official mandate c. No uniform with state insignia d. Control is exercised by the president or associates	Qualitative research; Pro-Government Militias Database (Carey/Mitchell/ Lowe 2013)

Checking for necessity, we found no single condition that was present in all instances of collapse.[16] We began by testing sets of seven conditions by treating two pairs of conditions as substitutes of each other due to their similarity: MILIT and UNOFF_MILITIA, and AID and GOV_REV.[17] Unsurprisingly, these sets produced solutions without contradictions but with highly idiosyncratic terms. To meet the lower number of conditions advised by Marx and Dusa, we tested which conditions could be dropped from the analysis to identify sets of five conditions that still produced solutions without contradictions.[18]

5.1 Results of the synchronic comparison[19]

The synchronic comparison points to the presence of unofficial "pro-government militias" (Carey/Mitchell/Lowe 2013) as a sign of imminent state collapse. The consistency level of UNOFF_MILITIA(1) as a sufficient condition for state collapse amounts to 0.9 with a coverage of 0.6. Only a single control case (Sudan 1992) displays this condition, preventing complete sufficiency.

In the synchronic comparison, the only combination of five conditions that produces a truth table without contradictions is FACTIONAL, GOV_REV, INCOME, MILIT and LOCAL_POLITY. The parsimonious solution and the cases covered by individual terms are given in Table 3.[20]

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[16] There are several conjunctural conditions that could be interpreted as necessary: MILIT(1) + LOCAL_POLITY(1) (consistency 1.00, coverage 0.65), MILIT(1) + INCOME(0) (consistency 1.00, coverage 0.75), and MILIT(1) + GOV_REV(0) (consistency 1.00, coverage 0.65). While these conjunctions pass the 0.9 threshold of consistency and are non-trivial, there is no compelling theoretical justification to combine the individual conditions in these particular ways (Schneider/Wagemann 2012: 278).

[17] We treat the first pair as potential substitutes based on the empirical observation that there is only a single case (Georgia 2003) where unofficial militias are present but there is no general militarization of all relevant political actors (MILIT is almost a necessary condition for UNOFF_MILITIA). With regard to the second pair, the reduction of government revenues and of international aid both constitute a decline of resources available to maintain the established formal and informal institutions of the state. Thus, we assume that these conditions trigger a similar dynamic affecting the resilience of states.

[18] All calculations were conducted using TOSMANA Version 1.3.2 (Cronqvist 2011). Coverage and consistency values were calculated manually.

[19] The Appendix contains truth tables, Venn Diagrams and further information for both comparisons.

[20] The complex solution is made of five terms that only cover a few cases each so this result is too specific for meaningful interpretation. We used all logical remainders to calculate the parsimonious solution. This required

Table 3: Solution for Outcome = 1 and Coverage of Solution Terms (Synchronic Comparison)

Term	**Cases covered**	**RC**	**UC**
MILIT(1) * INCOME (0)	Sierra Leone 1998+Uganda 1985+Somalia 1991,Chad 1979+*Liberia 1990+Laos 1960*	40%	13.3%
MILIT(1) * GOV_REV(1)	Sierra Leone 1998+Somalia 1991,Chad 1979+*Tajikistan 1992,Bosnia-Herzegovina 1992,Georgia 1991+Afghanistan 1979+Angola 1992*	53%	33.3%
INCOME(0) * LOCAL_POLITY(1)	Sierra Leone 1998+Uganda 1985+Somalia 1991,Chad 1979+*Zaire 1996+Guinea-Bissau 1998*	40%	13.3%
FACTIONAL(1) * MILIT (1) * LOCAL_POLITY(1)	Sierra Leone 1998+Uganda 1985+*Congo-Kinshasa 1960,Lebanon 1975*	26.7%	13.3%

RC = Raw coverage, UC = Unique coverage
Cases that are unique to a particular term are highlighted in italics.

This formula can be reformulated as follows:

MILIT(1) * [INCOME(0) + GOV_REV(1) + FACTIONAL(1) * LOCAL_POLITY(1)]
+ INCOME(0) * LOCAL_POLITY(1)

The solution formula shows four alternative paths that explain the outcome of state collapse in the synchronic comparison. The militarization of politics is an INUS condition in three of these paths. It appears in conjunction with a) extreme poverty (less than 5 per cent of the global average per capita income), b) a recent decline of government revenues and c) the existence of local pre-colonial polities combined with factionalized political competition. The fourth path to the outcome includes extreme poverty and the previous existence of local polities that existed in parts of the territory of post-colonial states or those states that emerged from the breakup of multinational empires.

5.2 Results of the diachronic comparison

In the diachronic comparison TRANSITION is a sufficient condition for state collapse amongst our cases but with a fairly limited coverage of 0.4. In other words, seven collapsed states had undergone political transition within the year prior to collapse but this explains the timing of

six simplifying assumptions. There were no contradictory assumptions when compared with the parsimonious solution for Outcome = 0. We give a more detailed explanation in the Appendix.

state collapse only in select countries. As in the synchronic comparison, UNOFF_MILITIA(1) is almost sufficient with a consistency of 90% and a coverage of 60%. Again, only a single control case (this time, Georgia 2003) also has unofficial militias.

As in the synchronic comparison, we were able to find a single truth table with five conditions that is entirely free of contradictions: MILIT, TRANSITION, REPRESSION, AID and FACTIONAL. Computing the parsimonious solution by including logical remainders produces the result presented in Table 4.[21]

Table 4: Solution for Outcome = 1 and Coverage of Solution Terms (Diachronic Comparison)

Term	**Cases covered**	**RC**	**UC**
TRANSITION (1)	*Afghanistan 1979,Chad 1979*+Angola 1992+Congo-Kinshasa 1960+Laos 1960+Sierra Leone 1998,Tajikistan 1992)	46.7%	13.3%
FACTIONAL(1) * MILIT(1)	*Bosnia-Herzegovina 1992,Georgia 1991,Lebanon 1975*+Congo-Kinshasa 1960+Laos 1960+Sierra Leone 1998,Tajikistan 1992+Uganda 1985	53.3%	20%
REPRESSION(1) * AID(1)	Angola 1992+*Zaire 1996+Guinea-Bissau 1998+Liberia 1990,Somalia 1991*+Sierra Leone 1998,Tajikistan 1992	46.7%	26.7%

RC = Raw coverage, UC = Unique coverage
Cases that are unique to a particular term are highlighted in italics.

The diachronic solution formula shows three proximate "paths" to state collapse. Political transition in the immediate pre-collapse period is a sufficient condition for state collapse and therefore is one trigger of state collapse. The combination of a factionalized and militarized political competition represents another path – the relevance of these two factors is underscored by the results of the synchronic comparison. A third path consists of the occurrence of an intermediate to high level of repression in combination with a decline of external financial and/or military aid.

Our synchronic and diachronic comparisons produce somewhat different results. Two factors – the militarization of political actors and factionalist politics – were prominent in both solutions. Both explanations also featured some form of declining access to resources, either through a decline of state revenues (synchronic) or through the reduction of international aid (diachronic). The results diverge with respect to the additional factors: the remaining two conditions from

[21] The complex solution is made of six rather idiosyncratic terms which are very specific to small clusters of cases. We used all logical remainders to calculate the parsimonious solution. This step required 13 simplifying assumptions (see Appendix).

the synchronic solution are an extremely low level of per capita income and the existence of local, precolonial polities, both highly structural factors. In contrast, the diachronic comparison's solution formula includes two more dynamic factors, namely a recent political transition and a high level of repression. This is in line with our methodological reasoning that the synchronic comparison highlights structural differences between collapsed and non-collapsed states while the diachronic comparison identifies dynamic differences between situations of collapse and non-collapse within the same country.

However, results from both comparisons do not provide us with neat groups of cases that share similar structural characteristics and follow similar trajectories. Instead, cases are covered by individual sets of solution terms (for case coverage of solution terms, see Tables 6 and 8 in the Appendix), preventing us from constructing a clear and meaningful taxonomy of cases.

6. Discussion

The data yield interesting results with regard to the initial assumptions about the causal relevance of single risk factors or combinations thereof. First of all, the data supports our conjunctural hypotheses. There are no single necessary conditions for state collapse but there are combinations of factors that are jointly sufficient for the outcome. (For some cases, a single condition – transition – was a sufficient cause in the diachronic comparison.) None of these combinations covered all cases of collapse, though, neither in the synchronic nor in the diachronic comparison.

It is theoretically interesting to note that a number of conditions do not show the explanatory power that we – in line with the literature – had expected. The collection of new data and preliminary analyses led us to omit conditions representing prominent theories from the QCA. For instance, none of the conditions associated with the erosion of state institutions due to either the destruction of formal institutions, namely the bureaucracy and the security forces, or the construction of informal networks needs to be integrated in a causal theory of state collapse. Likewise, the type of regime did not seem to make the difference between collapsed and non-collapsed, but fragile states. Also, the majority of socio-economic and international factors have limited value for the explanation of the outcome.

As we anticipated, our synchronic and diachronic comparisons produce somewhat different results. We expected the synchronic comparison to highlight structural differences between collapsed and non-collapsed states while the diachronic comparison was supposed to identify

dynamic differences between situations of collapse and non-collapse within the same country. Two factors – the militarization of political actors and factionalist politics – were prominent in both solutions. Both explanations also featured some form of declining access to resources, either through a decline of state revenues (synchronic) or through the reduction of international aid (diachronic). Appropriately, the remaining two conditions from the synchronic comparison's solution are an extremely low level of per capita income and the existence of local, precolonial polities, both highly structural factors. In contrast, the diachronic comparison's solution formula included two more dynamic factors, namely a recent political transition and a high level of repression.

One of the most interesting observations concerns the history of states. Clapham (2004) and Buzan (1991) posit that a society's common experience or idea of independent statehood are crucial for the resilience of states. Hence we expected the complete absence of a polity before the period of the integration into a colonial or other kind of empire (POLITY(0)) to be a risk factor for collapse. What we found was that the existence of precolonial/preimperial polities that included only parts of the territory and the population of the postcolonial/postimperial state (POLITY(1), later recoded as LOCAL_POLITY(1)) seemed a much riskier condition. This finding highlights a facet of the argument by Clapham and Buzan, underscoring the importance of a *collectively* shared history and idea of statehood. In other words, the resilience of states is promoted by a society's *common identity*, whereas the question whether societies have any historical experience with state institutions is much less relevant for a state's trajectory.

Furthermore, a political transition partly explains the timing of state collapse. This is intuitively compelling – periods of political change are characterized by windows of opportunity and uncertainty about the future distribution of power and resources, thus creating incentives for political actors to escalate latent conflicts and increasing risks of state collapse. However, transitions do not inevitably result in instability and harm the viability of institutions. It is a task for future research to find out under which circumstances political change leads to state collapse.

The militarization of relevant political actors features prominently in both solution formulas. This result is even more significant when the condition is compared with its closest substitute: When UNOFF_MILITIA replaces MILIT, solution coverage decreases in both comparisons. This is all the more striking since the existence of unofficial pro-government militias is close to a sufficient condition in both comparisons. Instead, it is the systematic armament of all relevant interest groups that has greater explanatory power as a risk factor for the collapse of a

state. The importance of this deviation should not be overstated, however, as MILIT is almost a necessary condition for UNOFF_MILITIA – there is only a single case in the entire dataset (Georgia 2003) that has UNOFF_MILITIA(1) without MILIT(1).

Making sense of the results from the two (diachronic and synchronic) QCA comparisons is challenging. As much as the decision for two control groups is justified by the purpose of uncovering both structural and dynamic causes, it leads to practical problems. Unfortunately, cases do not fall into clearly delineated "types" of collapse. For the most part, there was no pattern where those cases that were covered by a given solution term in the synchronic comparison also shared a solution term in the diachronic comparison (see Appendix). For instance, both Bosnia-Herzegovina 1992 and Afghanistan 1979 were covered by the term MILIT(1) * GOV_REV(1) in the synchronic comparison. But whereas Bosnia-Herzegovina 1992 was assigned to the term FACTIONAL(1) * MILIT(1) in the diachronic comparison, Afghanistan 1979's solution term there was TRANSITION(1).

There are some cases where the QCA indicates similar trajectories because they are grouped together in the results of both comparisons: Afghanistan 1979, Chad 1979, and Angola 1992 show up in the same solution terms in both comparisons. This is also true for Lebanon 1975, Congo-Kinshasa 1960 and Uganda 1985. Given similar historical contexts it may be less surprising that Bosnia-Herzegovina 1992, Georgia 1991 and Tajikistan 1992 likewise are grouped together twice.[22]

However, since many cases are covered by multiple solution terms in at least one of the comparisons, the results can be read in different ways. QCA does not provide us with suitable information on which of these multiple solutions should be preferred. Hence, we are unable to develop a causal model of state collapse by referring to the membership of cases in solution terms alone. Therefore, the goal of developing a causal theory of state collapse that seeks to identify ideal-type paths to collapse covering specific groups of cases cannot be achieved by QCA alone. Instead, we propose to distinguish between several causal dynamics linking risk factors in different ways. Then, to explain the collapse of a particular state these dynamics can

[22] These examples are not comprehensive of all cases that occur in the same solution terms in both cases because most cases are covered by several terms. This list focuses on cases that are uniquely covered by one solution term in at least one the comparisons: Afghanistan is uniquely covered by the term it shares with Chad and Angola in both comparisons, Chad is uniquely covered by the shared term in the diachronic and Angola in the synchronic comparison. Bosnia-Herzegovina and Georgia show up in one and the same term in both results. Tajikistan also appears in both terms, but is part of a second term in the diachronic comparison. Finally, Lebanon is twice uniquely explained by the solution that also features Uganda and Congo-Kinshasa 1960. The latter case is solely covered by one term in the synchronic comparison and the former belongs to several in both analyses.

be combined. In other words, we should not only be looking for *equifinal causal conjunctions*, but for *equifinal mechanisms*. To this end, QCA needs to be complemented with other methods like process-tracing.

7. Conclusion

The paper represents a comprehensive test of claims and hypotheses from the academic literature about the causes of state collapse. Our results are sobering for the field. None of the theoretical models that had been developed, even the most elaborate ones by authors like Englehart, Reno or Lambach, found much support in our analysis. Instead, results point to different combinations of factors that enhance or impede the viability of state institutions. The militarization of politics is obviously crucial, but its relation to state collapse needs to be explored further. The results also highlight the precarious nature of political transitions and suggest the importance of a shared common identity in society.

Using QCA was a novel approach for the field that addressed widespread shortcomings of previous research. The method accounts for the equifinal and conjunctural causality of the phenomenon. Moreover, it made possible the systematic test of qualitative risk factors that lack the scale of measurement required for statistical methods. The collection of these kinds of data and its analysis in a comparative design enriches the field's knowledge because it helps to assess the validity of long-held claims. Thus, it opens avenues for new theories on state collapse and inquiries into its causes.

However, as we found, venturing into new territories likely involves encountering unforeseen obstacles. Combining synchronic and diachronic comparisons made it difficult to formulate a parsimonious explanation. The limitations of QCA also became evident in that we are unable to build a causal model of state collapse based solely on results of the QCA, for two reasons.

The first reason is tied to the understanding of causation underlying QCA. As a comparative design, it can increase or decrease the certainty about a causal relation between X and Y. However, QCA analyses do not provide insights into causal mechanisms as a system of interlocking parts that transmit causal forces from X to Y.[23] It can only account for mechanisms in the sense of "conjunctural conditions", but not as claims on mechanisms linking conditions to the outcome. This is acknowledged by Schneider and Wagemann – who otherwise present

[23] For different views on the roles of mechanisms in causal processes see Glennan (1996, 2002); Bunge (1997, 2004) and Bhaskar (2008).

QCA and other set-theoretic methods as useful for causal analysis (2012: 8) – when they discuss post-QCA within-case studies as a method for "unraveling the causal mechanism that link the condition to the outcome" (2012: 308, also see Schneider/Rohlfing 2013).

Thus, QCA – taken only as the analysis of a truth table (Schneider/Wagemann 2012: 305) – has limited value to explain a certain empirical case of state collapse; it cannot be used to confirm or falsify the effect of a certain factor in a specific country at a specific time. Nevertheless, the QCA results raise doubts about the explanatory power of many accepted causal theories in the field, especially since our findings rest on a broader empirical base than previous contributions as well as deeper case knowledge from gathering data on the specific cases.

The second reason is that we could not fully overcome the bias towards structural conditions. On a general level, generating new data through case studies brought in new information beyond the available stock of quantitative datasets, allowing us to test certain hypotheses for the first time. Yet we tended to operationalize risk factors in static rather than dynamic ways. For instance, the condition MILIT only indicates the level of militarization, i.e. whether all politically relevant groups are systematically armed at the time of collapse. When militarization started and how it then contributed to collapse *at a particular point in time* remains in the dark.

Traditional QCA approaches only offer limited scope in dealing with dynamic factors (Wagemann/Schneider 2010: 385). Change can best be represented by incorporating observations at multiple points in time which has inspired the development of "temporal" or "time-series" QCA (TQCA, see Caren/Panofsky 2005, Hino 2009). However, adding multiple observations per case generally makes solution formulas much more complex and idiosyncratic (Ragin/Strand 2008). It also makes the data collection process even more demanding: Whereas we based the coding decision on the presence or absence of a condition in a pre-determined period of time, the integration of dynamics would mean a specific and potentially much broader time perspective for each condition in each case. Such an approach is very ambitious for a comparative project, especially if one sets off to test all causal hypotheses from the literature as we did. A second-best solution is to use the relative change of a given condition as the basis for coding. For instance, for our coding GOV_REV we combined state revenues during the year of collapse with state revenues three years before. However, we did not use this approach consistently.

As a next step, we propose to triangulate the QCA with other methods to test whether the conditions highlighted in the solution terms had a meaningful causal effect on the outcome of cases, either individually or in conjunction with each other. In addition, we intend to learn more

about how the risk factors work. This is very much in line with traditional approaches that exhort researchers to shift from comparative analysis to within-case analysis and back again as the research progresses (Ragin 2000: 283, Rihoux/de Meur 2009: 65-66, Schneider/Wagemann 2012: 305-312). We will use comparative process-tracing studies to investigate causal mechanisms and tackle the problem of two solutions that prevents an easy interpretation and theory-building on causes of state collapse. The case-specific process-tracing can use the QCA solutions terms which suggest an empirical relevance of particular combinations of conditions for each particular case as a point of departure. Process-tracing allows us to analyze whether the conditions and their combinations exert a discernible causal effect and if so, by which mechanisms (Beach/Pedersen 2013).

There are also additional avenues for further research. The first would to be to think more systematically about the relationship between formality and informality in constituting political order. Previous accounts viewed informal arrangements as substitutes for, or parasitic of formal state institutions but we should be open for alternative forms of interaction, such as contestation or complementarity (Helmke/Levitsky 2004: 728). A recent example of such an approach is the notion of "political settlements" which Putzel and DiJohn define as "the distribution of power between contending social groups and social classes" (Putzel/DiJohn 2012: 1) that focuses on contention and bargaining among elites, between elites and non-elites, and between social groups. Until now, there has been little theory-building about the impact of actors and their behaviors, with most contributions focusing on structural explanations instead.

Another issue would be to connect our findings with results from peace and conflict research. The significance of militarization as risk factor underscores the need to further investigate the connection between large-scale violence and state collapse. On a conceptual level, we should revisit the question how far, and at which level of intensity, violence should be part of the definition or operationalization of state collapse. This should include literature on civil wars and state formation which stress that violence can also create and sustain political order as much as destroy it (Taylor/Botea 2008). Such a broader way of theorizing would go some way towards undermining the fallacy that functioning formal state institutions inevitably guarantee stability, peace and development.

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Appendix

Table 5: Rejected risk factors

Condition	Values	Description and coding rules	Source
BUR_OBSTR	0= no obstruction of the bureaucracy by ruling regime 1= slight obstruction 2= massive obstruction	0= no obstruction; no observable conflicts between government and bureaucracy 1= cuts in salaries, sacking of employees, non-merit appointments occur and have negative impact on the bureaucratic efficiency 2= cuts in salaries, sacking of employees, non-merit appointments occur systematically; Little or no efficiency of the bureaucracy; little or no trust in the bureaucracy	Qualitative research
ETH_MIN_RULE	0= No "absolute Power" of an ethnic Minority 1= "Absolute Power" (monopoly or dominant) of an Ethnic Minority	"Absolute power" of an ethnic group which a) Has a proportion of less than 50% of the total population AND is not the "biggest" ethnic group or b) Has a proportion of less than 25 % of the total population	Ethnic Power Relations Dataset24; Qualitative research
EX_THREAT	0=high or rising ext. threat 1= no or low external threat 2=fading of an external threat	COSIMO "manifest" conflict; UN Resolutions; bilateral relations with neighbouring countries or regional/int. powers etc.	Qualitative research
INFORMAL	0= informal government structures do not substitute for formal state institutions 1= Informal structures are more important to the government than formal ones in many policy fields 2= Government decision-making and policy implementation takes place almost exclusively via informal structures	0= decision-making follows formal procedures; independent "watch dogs" (courts etc.) 1= little transparency in the decision-making process; sporadic assembly of the parliament; deficient "watch dogs"; regime decisions partly enacted via private networks 2= no transparency in the decision-making-process; no or totally dependent "watch dogs"; enactment of regime decisions via private networks	Qualitative research
LIBERAL	0= no economic liberalization program conducted within 5 years before state collapse 1= economic liberalization program conducted within 5 years before state collapse	WTO membership, free trade agreements; reduction of tariffs, subventions, devaluation of the national currency etc.	Qualitative research
N_CIV_WAR	0= no civil war in neighboring country	Civil war in neighbouring country began max. five years before the collapse or ended max. three years before the collapse	Onset of Intrastate Armed Conflict, 1946-2011

[24] http://www.epr.ucla.edu/

	1= civil war in neighboring country		(Themnér/Wallensteen 2012)
N_COLLAPSE	0= no collapsed neighbouring country 1= collapse of a neighbouring country	collapse in neighbouring country; or collapse began max. five year before the collapse or ended max. three years before the collapse	Based on this dataset
NIC	0= Country gained independence at least six years before the collapse 1= Country gained independence within five years before the collapse		
PERSONAL_RULE	0= no personalist regime 1= partially personalist regime 2=personalist regime	0= Head of Government has no direct access to the budget; career and economic success do not depend on a personal relationship to the head of government; 1= Head of Government partially controls budget; personal relationship to the head of government is a benefit; accumulation of offices by regime insiders 2= direct control of the budget, accumulation of offices of key persons; career and economic success depend on a personal relationship; personality cult; quasi-dynastic succession	Qualitative research
POLAR	0= rival political camps can be distinguished but are unorganized or willing to negotiate 1= The political System is polarized with clearly identifiable rival actors who are unwilling to negotiate	0= Powerful challengers exist but are willing to engage in dialogue or are badly organized 1= Powerful challengers exist, are well-organized and refuse dialogue	Qualitative research
POLITY	0= no precolonial/-imperial polity 1= local precolonial/-imperial polity/polities 2= precolonial/-imperial polity largely congruent with state territory 3= no period of colonial/imperial domination	Local Polity has to cover a significant part of the current state territory. Precolonial Kingdoms, empires or states largely congruent with the actual state territory are marked by a hierarchical order, a certain degree of institutionalization and a persistence beyond the personal reign of a ruler.	Qualitative research
POP_DENSITY	0= Pop_Density < 15% of global average 1= 15% ≤ Pop_Density ≤ 75 % of global average 2= Pop_Density > 75% of the global average	Population density as percentage of the global average of population densities of the year in question	United States Census Bureau International Database[25]

[25] http://www.census.gov/ipc/www/idb/

POWER_PROP	0= opposition does not see any chance for a regime change/Secession 1= Opposition is doubtful of the chance for a regime change/Secession 2= opposition is convinced of a good chance for a regime change/secession	Coded depending on the strategies exhibited by oppositional groups: cooperation/confrontation; political rhetoric; distribution of power resources	Qualitative research
PRIM_COMM_EXP	0= prim_com_exp < 5% 1= 5% ≤ prim_com_exp ≤ 20% 2= prim_com_exp > 20%	Value of primary commodity exports/Total GDP (both in US-$)	UNCTAD Commodity Yearbooks 1989, 1991, 1995, 2003
REGIME	0= Democracy 1= Hybrid Regime 2= Autocracy	0= Polity > +5 1= -5 ≤ Polity ≤ +5 2= Polity < -5	Polity IV or own coding following the criteria of Polity IV[26]
SAP	0= no SAP 1= SAP	0= no implementation of IMF/WB Structural Adjustment Program within the five years before the collapse 1= no implementation of IMF/WB Structural Adjustment Program within the five years before the collapse	Qualitative research
SEC_OBSTR	0= no obstruction of the security forces by ruling regime 1= slight obstruction 2= massive obstruction	0= no obstruction; no observable conflicts between government and security forces 1= cuts in salaries, sacking of employees, non-merit appointments occur and have negative impact on the efficiency of the security forces 2= systematic cuts in salaries, sacking of employees, non-merit appointments occur; noteworthy numbers of desertions; nearly incapable security forces	Qualitative research
TRADE_OPEN	0= 0-25% 1= 25-70% 2= 70% and more	(Imports + Exports) / GDP 0= 0-25% 1= 25-70% 2= more than 70%	United Nations – National Accounts Main Aggregates Database
YOUTH	0= Youth proportion ≤ 90 % of the global average 1= 90% < Youth proportion < 120 % 2= youth proportion ≥ 120% of global average	Proportion of male and female population between 15 and 24 years as percentage of the total population and measured as proportion of the global average: Youth (Land; year)/Youth (global average)	United Nations Department of Economic and Social Affairs: World Population Prospects[27]

[26] http://www.systemicpeace.org/polity/polity4.htm
[27] http://esa.un.org/wpp/

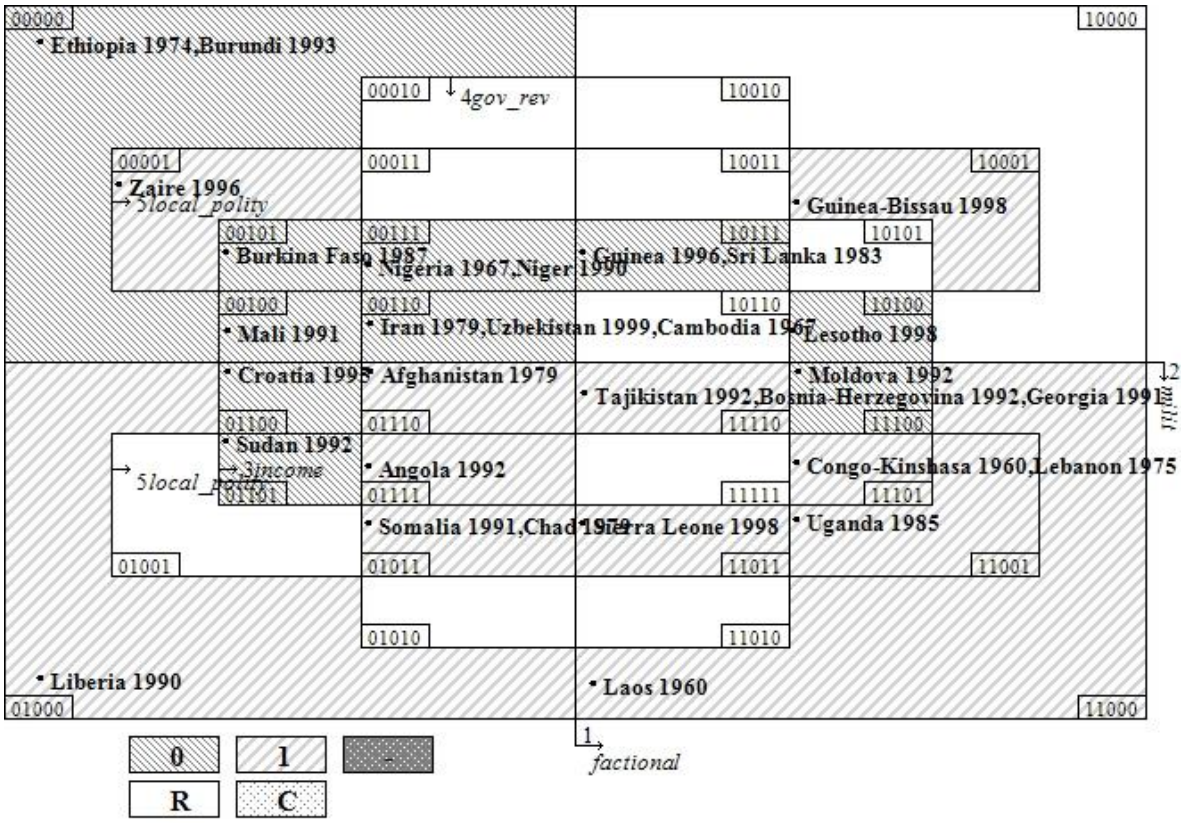
Synchronic comparison

Table 6: Truth Table for synchronic comparison[28]

case_ID	factional	milit	income	gov_rev	local_polity	outcome
Croatia 1995	0	1	1	0	0	0
Guinea 1996, Sri Lanka 1983	1	0	1	1	1	0
Ethiopia 1974, Burundi 1993	0	0	0	0	0	0
Iran 1979, Uzbekistan 1999, Cambodia 1967	0	0	1	1	0	0
Nigeria 1967, Niger 1990	0	0	1	1	1	0
Moldova 1992	1	1	1	0	0	0
Lesotho 1998	1	0	1	0	0	0
Mali 1991	0	0	1	0	0	0
Burkina Faso 1987	0	0	1	0	1	0
Sudan 1992	0	1	1	0	1	0
Sierra Leone 1998	1	1	0	1	1	1
Uganda 1985	1	1	0	0	1	1
Somalia 1991, Chad 1979	0	1	0	1	1	1
Tajikistan 1992, Bosnia-Herzegovina 1992, Georgia 1991	1	1	1	1	0	1
Afghanistan 1979	0	1	1	1	0	1
Liberia 1990	0	1	0	0	0	1
Angola 1992	0	1	1	1	1	1
Congo-Kinshasa 1960, Lebanon 1975	1	1	1	0	1	1
Zaire 1996	0	0	0	0	1	1
Laos 1960	1	1	0	0	0	1
Guinea-Bissau 1998	1	0	0	0	1	1

[28] Remainders are omitted from the table.

Fig. 1: Venn Diagram for synchronic comparison



The complex solution

When minimizing for Outcome = 1, we get the following complex solution formula:

MILIT(1) * INCOME(0) * GOV_REV(1) * LOCAL_POLITY(1) +
FACTIONAL(1) * MILIT(1) * GOV_REV(0) * LOCAL_POLITY(1) +
FACTIONAL(0) * MILIT(1) * GOV_REV(1) * LOCAL_POLITY(1) +
MILIT(1) * INCOME(1) * GOV_REV(1) * LOCAL_POLITY(0) +
MILIT(1) * INCOME(0) * GOV_REV(0) * LOCAL_POLITY(0) +
MILIT(0) * INCOME(0) * GOV_REV(0) * LOCAL_POLITY(1)

To check the robustness of our results, we conducted an analysis for Outcome = 0, including all logical remainders for reduction. This produced the following solution formula:

MILIT(0) * INCOME(1) +
MILIT(0) * LOCAL_POLITY(0) +
FACTIONAL(0) * INCOME(1) * GOV_REV(0) +
INCOME(1) * GOV_REV(0) * LOCAL_POLITY(0)

While this does not precisely mirror the solution for Outcome = 1, all conditions have the expected values: a per-capita income above 5 per cent of the global average, constant or increasing state revenues and an absence of militarization, factionalism and localized pre-colonial polities. This can be further reduced to:

MILIT(0) * [INCOME(1) + LOCAL_POLITY(0)] +
INCOME(1) * GOV_REV(0) * [FACTIONAL(0) + LOCAL_POLITY(0)]

In other words, there are two major sets of conditions that predict the non-occurrence of state collapse in the synchronic comparison. The first one consists of an absence of militarization and either a lack of extreme poverty or a lack of local, precolonial or preimperial polities. The second one describes states that are not excessively poor and that do not suffer from declining state revenues with either non-factional politics or an absence of pre-colonial polities.

There were no contradictory simplifying assumptions for the parsimonious solutions for Outcome = 1 and Outcome = 0. The simplifying assumptions for Outcome = 1 were:

FACTIONAL(0) * MILIT(0) * INCOME(0) * GOV_REV(1) * LOCAL_POLITY(1) +
FACTIONAL(0) * MILIT(1) * INCOME(0) * GOV_REV(0) * LOCAL_POLITY(1) +
FACTIONAL(0) * MILIT(1) * INCOME(0) * GOV_REV(1) * LOCAL_POLITY(0) +
FACTIONAL(1) * MILIT(0) * INCOME(0) * GOV_REV(1) * LOCAL_POLITY(1) +
FACTIONAL(1) * MILIT(1) * INCOME(0) * GOV_REV(1) * LOCAL_POLITY(0) +
FACTIONAL(1) * MILIT(1) * INCOME(1) * GOV_REV(1) * LOCAL_POLITY(1)

For Outcome = 0 they were:

FACTIONAL(0) * MILIT(0) * INCOME(0) * GOV_REV(1) * LOCAL_POLITY(0) +
FACTIONAL(1) * MILIT(0) * INCOME(0) * GOV_REV(0) * LOCAL_POLITY(0) +
FACTIONAL(1) * MILIT(0) * INCOME(0) * GOV_REV(1) * LOCAL_POLITY(0) +
FACTIONAL(1) * MILIT(0) * INCOME(1) * GOV_REV(0) * LOCAL_POLITY(1) +
FACTIONAL(1) * MILIT(0) * INCOME(1) * GOV_REV(1) * LOCAL_POLITY(0)

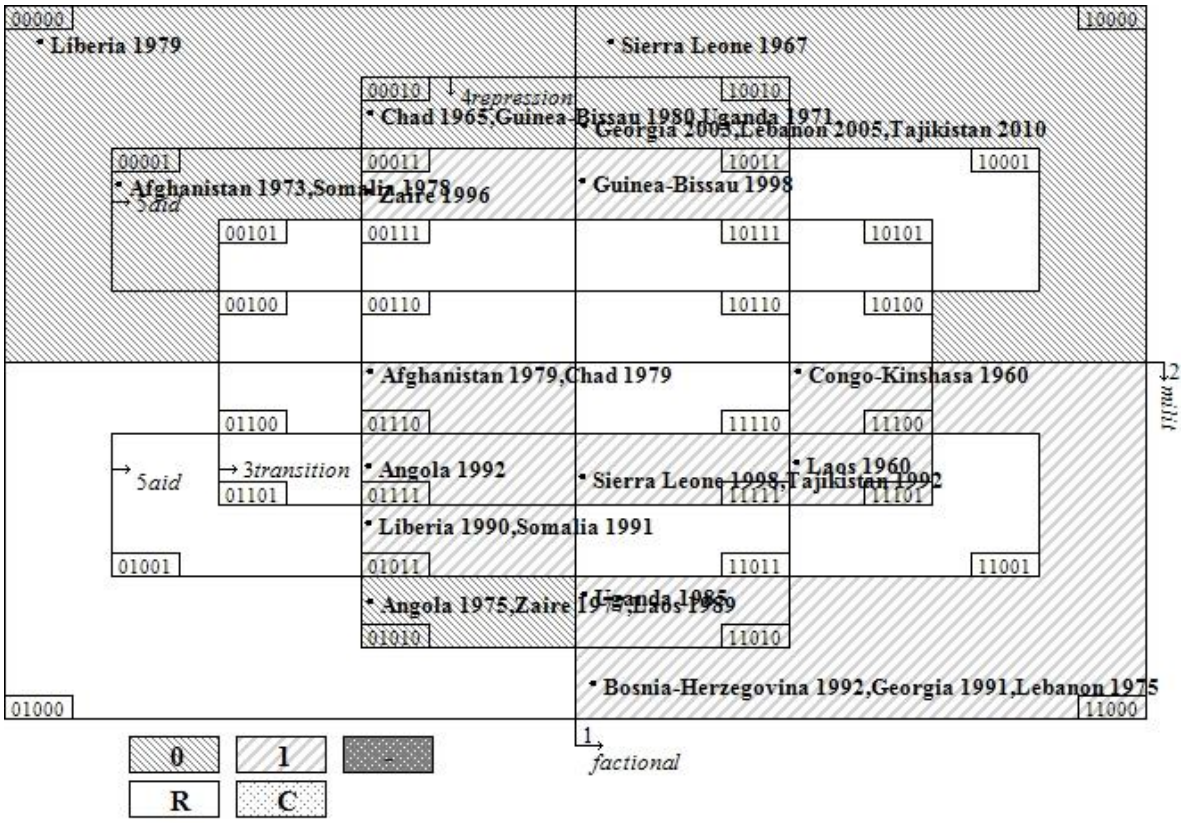
Diachronic comparison

Table 7: Truth Table for diachronic comparison[29]

case_ID	factional	milit	transition	repression	aid	outcome
Afghanistan 1973, Somalia 1978	0	0	0	0	1	0
Angola 1975, Zaire 1977, Laos 1989	0	1	0	1	0	0
Chad 1965, Guinea-Bissau 1980, Uganda 1971	0	0	0	1	0	0
Georgia 2003, Lebanon 2005, Tajikistan 2010	1	0	0	1	0	0
Liberia 1979	0	0	0	0	0	0
Sierra Leone 1967	1	0	0	0	0	0
Afghanistan 1979, Chad 1979	0	1	1	1	0	1
Angola 1992	0	1	1	1	1	1
Bosnia-Herzegovina 1992, Georgia 1991, Lebanon 1975	1	1	0	0	0	1
Congo-Kinshasa 1960	1	1	1	0	0	1
Zaire 1996	0	0	0	1	1	1
Guinea-Bissau 1998	1	0	0	1	1	1
Laos 1960	1	1	1	0	1	1
Liberia 1990, Somalia 1991	0	1	0	1	1	1
Sierra Leone 1998, Tajikistan 1992	1	1	1	1	1	1
Uganda 1985	1	1	0	1	0	1

[29] Remainders are omitted from the table.

Fig. 2: Venn Diagram for diachronic comparison



The complex solution

When minimizing for Outcome = 1, QCA produces the following complex solution formula:

FACTIONAL(1) * MILIT(1) * TRANSITION(1) * REPRESSION(1) +
FACTIONAL(0) * MILIT(1) * REPRESSION(1) * AID(1) +
FACTIONAL(1) * MILIT(1) * TRANSITION(0) * AID(0) +
FACTIONAL(1) * MILIT(1) * TRANSITION(1) * REPRESSION(0) +
MILIT(0) * TRANSITION(0) * REPRESSION(1) * AID(1) +
FACTIONAL(1) * MILIT(1) * TRANSITION(1) * AID(1)

To check the robustness of our results, we also calculated a complex solution for Outcome = 0:

MILIT(0) * TRANSITION(0) * AID(0) +
FACTIONAL(0) * MILIT(0) * TRANSITION(0) * REPRESSION(0) +
FACTIONAL(0) * TRANSITION(0) * REPRESSION(1) * AID(0)

Simplifying this solution is slightly more complex than in the synchronic comparison because the software-led simplification contains several contradictory simplifying assumptions. In

particular, the following sets of conditions were used to reduce *both* the Outcome = 1 and the Outcome = 0 solution:

FACTIONAL(0) * MILIT(0) * TRANSITION(1) * REPRESSION(0) * AID(0) +
FACTIONAL(0) * MILIT(0) * TRANSITION(1) * REPRESSION(0) * AID(1) +
FACTIONAL(0) * MILIT(0) * TRANSITION(1) * REPRESSION(1) * AID(0) +
FACTIONAL(1) * MILIT(0) * TRANSITION(1) * REPRESSION(0) * AID(0) +
FACTIONAL(1) * MILIT(0) * TRANSITION(1) * REPRESSION(0) * AID(1) +
FACTIONAL(1) * MILIT(0) * TRANSITION(1) * REPRESSION(1) * AID(0)

Every solution term contains the condition TRANSITION(1) which we had previously identified as a sufficient condition of collapse. Therefore, we assigned these hypothetical cases an outcome value of 1. This allowed us to simplify the Outcome = 0 solution to:

MILIT(0) * TRANSITION(0) * AID(0) +
FACTIONAL(0) * TRANSITION(0) * REPRESSION(0) +
FACTIONAL(0) * TRANSITION(0) * AID(0)

This can be further reduced to:

TRANSITION(0) * [MILIT(0) * AID(0) + FACTIONAL(0) * [REPRESSION(0) + AID(0)]]

Therefore, cases that have not recently experienced political transition, coupled with either an absence of militarization and stable external aid, or a combination of an absence of factionalism with either a low level of repression or stable external aid, do not suffer state collapse. This does not precisely mirror the solution for Outcome = 0, but the conditions have the expected values and the results are logically consistent with our other findings.

The remaining simplifying assumptions for Outcome = 0 are:

FACTIONAL(0) * MILIT(1) * TRANSITION(0) * REPRESSION(0) * AID(0) +
FACTIONAL(0) * MILIT(1) * TRANSITION(0) * REPRESSION(0) * AID(1)

The simplifying assumptions for Outcome = 1 are:

FACTIONAL(0) * MILIT(0) * TRANSITION(1) * REPRESSION(0) * AID(0) +
FACTIONAL(0) * MILIT(0) * TRANSITION(1) * REPRESSION(0) * AID(1) +
FACTIONAL(0) * MILIT(0) * TRANSITION(1) * REPRESSION(1) * AID(0) +
FACTIONAL(0) * MILIT(0) * TRANSITION(1) * REPRESSION(1) * AID(1) +
FACTIONAL(0) * MILIT(1) * TRANSITION(1) * REPRESSION(0) * AID(0) +

FACTIONAL(0) * MILIT(1) * TRANSITION(1) * REPRESSION(0) * AID(1) +
FACTIONAL(1) * MILIT(0) * TRANSITION(1) * REPRESSION(0) * AID(0) +
FACTIONAL(1) * MILIT(0) * TRANSITION(1) * REPRESSION(0) * AID(1) +
FACTIONAL(1) * MILIT(0) * TRANSITION(1) * REPRESSION(1) * AID(0) +
FACTIONAL(1) * MILIT(0) * TRANSITION(1) * REPRESSION(1) * AID(1) +
FACTIONAL(1) * MILIT(1) * TRANSITION(0) * REPRESSION(0) * AID(1) +
FACTIONAL(1) * MILIT(1) * TRANSITION(0) * REPRESSION(1) * AID(1) +
FACTIONAL(1) * MILIT(1) * TRANSITION(1) * REPRESSION(1) * AID(0)

There are no further contradictory assumptions.