Government termination in Europe: a sensitivity analysis

Daniel Walther & Johan Hellström

To cite this article: Daniel Walther & Johan Hellström (2022) Government termination in Europe: a sensitivity analysis, West European Politics, 45:3, 591-611, DOI: 10.1080/01402382.2021.1880720

To link to this article: https://doi.org/10.1080/01402382.2021.1880720

© 2021 The Author(s). Published by Informa UK Limited, trading as Taylor & Francis Group.

Published online: 11 Feb 2021.

Submit your article to this journal

Article views: 720

View related articles

View Crossmark data

Citing articles: 2 View citing articles
Government termination in Europe: a sensitivity analysis

Daniel Walther and Johan Hellström

Department of Political Science, Umeå University, Umeå, Sweden

ABSTRACT
The aim of this article is to examine which factors robustly influence cabinet duration in Central and Eastern Europe (CEE). In this respect the article investigates the role political institutions (including vote of no-confidence procedures), parliamentary and cabinet attributes, and various contextual factors have on cabinet stability. By using a type of sensitivity analysis (i.e. Extreme Bounds Analysis) on a panel of about 180 cabinets in CEE, it is possible to examine which factors consistently predict the probability of government survival. It is found that only a few factors are robust to alternative model specifications, namely: government type, fragmentation in parliament, the level of unemployment, and restrictive no-confidence votes procedures which make it more difficult for the opposition to bring down a government. Thus, the results indicate that cabinet duration in CEE is not primarily affected by sui generis factors to the region, but by factors of more general relevance.

KEYWORDS Cabinet duration; Central and Eastern Europe; Extreme Bounds Analysis; government stability; sensitivity analysis

The study of the causes of early cabinet termination has a long history in comparative political science. A common theme in these studies is to explain why so many governments are terminated before the next regularly scheduled election (for early overviews see Grofman and Van Roozendaal 1997; Laver 2003). Nonetheless, most of these studies have focussed on advanced democracies in Western Europe, and only a few studies have investigated governments in Central and Eastern Europe (CEE). We know that party systems are different between the West and the East (e.g. Backlund 2019; Bielasiak 2002). In contrast to Western Europe, the last three decades of democratic consolidation in Central and Eastern Europe have been accompanied by a higher degree of fragmentation, higher electoral volatility, and larger vote losses for parties in
government (e.g. Backlund 2019; Roberts 2008, Tavits 2008). Based on existing theories of cabinet stability, we would expect these differences to result in different determinants of government duration in Western and the Central-Eastern European democracies.¹

In this respect, an important part of previous studies on cabinet duration in CEE has been to understand which factors trigger the unusually high number of early terminations observed in the region (Bergman et al. 2015; Grotz and Weber 2012; Savage 2013). Even though five separate studies have investigated this conundrum, and 25 different variables have been tried and tested, robust findings are still scarce. This paper seeks to address this problem by using a type of sensitivity analysis – Extreme Bounds Analysis (Leamer 1983; 1985) – here applied for the first time to cabinet duration studies. The strengths of the Extreme Bounds Analysis (EBA) method lie in that it provides indications of the sensitivity of the results under different model specifications. More precisely, the general idea of EBA is to test which variables have a robust association with the dependent variable, given that we have too few observations (or too little variation) to establish the statistical relationship. By running a large number of empirical models that differ in the combination of which variables are included (from one to all combinations), we can determine which of our variables have a robust association with the outcome (cabinet duration). The results indicate that two structural attributes, namely government type (minority/majority/surplus) and parliamentary fractionalisation (i.e. effective number of parties), have a consistent and reliable influence on cabinet duration in the region. In addition, one factor related to the economic situation, and one factor related to parliament’s threshold to dismiss an incumbent cabinet – namely the level of unemployment and restrictive no-confidence vote rules – are also strong predictors of government stability.

This paper starts with an overview of cabinet stability in CEE, with a focus on how it differs from the more established democracies in Western Europe. In the following section, we turn to the methodological and theoretical considerations that are relevant in this study. In the final part of the paper, EBA is carried out and the findings and implications for future research are discussed.

**An overview of cabinet duration in Central and Eastern Europe**

When enough time had passed, a sufficient number of governments had come and gone in CEE. This was seen as a great opportunity to test the generalisability of the findings from Western Europe on party government (Conrad and Golder 2010; Druckman and Roberts 2005; Woldendorp
et al. 2000), and in the mid- to late-2000s, the first comprehensive studies of government stability emerged (Somer-Topcu and Williams 2008). The results showed that cabinets in CEE are, on average, less likely to survive until the next election than their Western counterparts. Evidence of this is also presented in Figure 1, which shows the number of cabinet terminations in each country since 1989, and the countries have been colour-coded based on their regional belonging.

At first glance, CEE countries are clearly overrepresented among countries with high government turnover, and we see that Eastern and Western Europe can be meaningfully separated based on their observed survival rates. The country with the most premature terminations is Latvia, which had 14 governments that ended prior to the next regularly scheduled elections. Looking instead at the most stable countries, we see that the eight best performers are all in the West (and primarily in north-western Europe).

Previous studies on cabinet stability in Eastern Europe

There are many studies on cabinet duration that include both Western, Central and Eastern-European countries. That is, studies that include CEE governments in a pooled sample with Western European governments (see e.g. Chiru 2015; Krauss 2018; Saalfeld 2013; Schleiter and Morgan-Jones 2009a; Walther et al. 2019). But so far, only five previous studies
## Table 1. Overview of findings in previous studies.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>HR 95% CI</td>
<td>HR 95% CI</td>
<td>HR 95% CI</td>
<td>HR 95% CI</td>
<td>HR 95% CI</td>
</tr>
<tr>
<td>1. Number of cabinet parties</td>
<td>2.67*** [1.32, 5.36]</td>
<td>1.39*** [1.17, 1.66]</td>
<td>0.09*** [0.03, 0.24]</td>
<td>0.83 [0.61, 1.13]</td>
<td>0.86 [0.44, 1.67]</td>
</tr>
<tr>
<td>2. Minority</td>
<td>4.04*** [1.80, 9.02]</td>
<td>2.80*** [2.09, 3.76]</td>
<td>5.22*** [2.03, 13.3]</td>
<td>3.13 [0.53, 18.4]</td>
<td>2.78** [0.88, 8.71]</td>
</tr>
<tr>
<td>3. Surplus Coalition</td>
<td>0.35** [0.14, 0.85]</td>
<td></td>
<td>0.49</td>
<td>1.00</td>
<td>1.00</td>
</tr>
<tr>
<td>4. Caretaker</td>
<td>107.3*** [29.66, 379]</td>
<td></td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
</tr>
<tr>
<td>5. Unemployment</td>
<td>1.06 [0.98, 1.15]</td>
<td>0.97 [0.92, 1.03]</td>
<td>0.09 [0.78, 1.53]</td>
<td>1.00</td>
<td>1.00</td>
</tr>
<tr>
<td>6. Inflation</td>
<td>1.59*** [1.21, 2.07]</td>
<td>1.04*** [1.02, 1.06]</td>
<td>0.006*** [0.05]</td>
<td>1.43</td>
<td>0.43, 2.5</td>
</tr>
<tr>
<td>7. GDP per capita</td>
<td>0.83 [0.61, 1.13]</td>
<td>1.03 [0.90, 1.18]</td>
<td>1.09</td>
<td>0.89</td>
<td>0.22, 3.56</td>
</tr>
<tr>
<td>8. Effective number of parties</td>
<td>0.36 [0.09, 1.48]</td>
<td>0.007*** [0.02]</td>
<td>1.57** [1.08, 2.27]</td>
<td>1.00</td>
<td>0.98, 1.02</td>
</tr>
<tr>
<td>9. Single party cabinet</td>
<td>1.01 [0.99, 1.03]</td>
<td></td>
<td></td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>10. Ideological distance in cabinet</td>
<td>0.96 [0.62, 1.52]</td>
<td></td>
<td></td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>11. EU accession</td>
<td>1.21 [0.64, 2.27]</td>
<td>1.23 [0.70, 2.18]</td>
<td></td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>12. Semi-presidentialism</td>
<td>0.40*** [0.21, 0.78]</td>
<td>0.25** [0.07, 0.91]</td>
<td>0.47** [0.23, 0.95]</td>
<td>1.01</td>
<td>1.01</td>
</tr>
<tr>
<td>13. Communist successor party in cabinet</td>
<td>0.06*** [0.08]</td>
<td></td>
<td></td>
<td>1.01</td>
<td></td>
</tr>
<tr>
<td>14. CSP in opposition</td>
<td>2.11*** [1.16, 3.78]</td>
<td>3.01*** [1.45, 6.2]</td>
<td>5.47** [1.05, 28.4]</td>
<td>1.01**</td>
<td></td>
</tr>
<tr>
<td>15. Inter-election period</td>
<td></td>
<td></td>
<td></td>
<td>1.01</td>
<td></td>
</tr>
<tr>
<td>16. Extremists in coalition</td>
<td></td>
<td></td>
<td></td>
<td>1.01</td>
<td></td>
</tr>
<tr>
<td>17. Government experience</td>
<td></td>
<td></td>
<td></td>
<td>1.01</td>
<td></td>
</tr>
<tr>
<td>18. Number of majority providers</td>
<td></td>
<td></td>
<td></td>
<td>1.01</td>
<td></td>
</tr>
<tr>
<td>19. 1990s</td>
<td></td>
<td></td>
<td></td>
<td>1.01</td>
<td></td>
</tr>
<tr>
<td>20. Polarization</td>
<td></td>
<td></td>
<td></td>
<td>1.01</td>
<td></td>
</tr>
<tr>
<td>21. Conservative cabinet</td>
<td></td>
<td></td>
<td></td>
<td>1.01</td>
<td></td>
</tr>
<tr>
<td>22. Change in party composition</td>
<td></td>
<td></td>
<td></td>
<td>1.01</td>
<td></td>
</tr>
<tr>
<td>23. Length of bargaining process</td>
<td></td>
<td></td>
<td></td>
<td>1.01</td>
<td></td>
</tr>
<tr>
<td>Interaction effects</td>
<td></td>
<td></td>
<td></td>
<td>1.01</td>
<td></td>
</tr>
<tr>
<td>24. Cab. parties*ideological distance</td>
<td>14.01*** [4.32, 45.4]</td>
<td></td>
<td></td>
<td>1.03</td>
<td></td>
</tr>
<tr>
<td>25. Minority*CSP in opposition</td>
<td>119.6*** [13.7, 1029]</td>
<td></td>
<td></td>
<td>3.44**</td>
<td></td>
</tr>
<tr>
<td>26. Minority*extremists in opposition</td>
<td>17.35* [0.99, 302.4]</td>
<td></td>
<td></td>
<td>0.97**</td>
<td></td>
</tr>
<tr>
<td>Number of parties*experience</td>
<td>0.89*** [0.82, 0.96]</td>
<td></td>
<td></td>
<td>0.99</td>
<td></td>
</tr>
<tr>
<td>Observations</td>
<td>About 85 (not reported)</td>
<td>76</td>
<td>138</td>
<td>36</td>
<td>126</td>
</tr>
</tbody>
</table>

***\(p<0.01\), **\(p<0.05\), *\(p<0.1\).
have focussed explicitly on trying to explain their relatively short government duration in CEE. An overview of these studies is shown in Table 1.

The studies in Table 1 contain a wide range of variables that have been confirmed as relevant in the West, such as factors relating to the type of government, political institutions, or economic performance (e.g. Hellström and Walther 2019; Saalfeld 2008). In addition, some studies also added new, specific factors for the Eastern context. For example, Tzelgov (2011) considered whether a communist successor party was in government, since it was hypothesised that such governments would be more stable. The reason for this is that parties that 'bridge the regime divide' and partner up with communist successor parties tend to face a greater punishment by voters and therefore want to stay in office for longer.

Grotz and Weber (2012) also added a range of new variables, such as government experience, as they hypothesised that given the greater volatility and instability of the Eastern-European party system, it should be an advantage to have previously been in power. In addition to these context-specific variables, many of the more traditional variables in government duration studies were found to matter, such as minority status, number of cabinet parties and the state of the economy (i.e. inflation and GDP per capita). Still, when analysing the results of these five studies in detail, a puzzling picture emerges. If we compare the findings of the different studies, we can see that only two variables that were used in more than one study had a consistent and statistically significant effect: changes in GDP per capita and the presence of a communist successor party in government. All other variables were found to matter in one study but not at least one other. The direction and size of the effects also change noticeably between different studies. For example, the number of cabinet parties increases the risk in Somer-Topcu and Williams’ (2008), as well as in Tzelgov’s (2011) studies, but indicates a lower risk in the other studies. Similarly, greater ideological distance in the cabinet lowers the risk in the study by Grotz and Weber (2012), but increases the risk in the one by Savage (2013), and is statistically significant in both studies. Such conflicting results make it difficult to know with certainty which factors affect cabinet stability in the region.

Why the results vary: model design and statistical power

There are several reasons why there should be natural variation in the results produced by the five models covered in Table 1. One reason is that the datasets employed cover slightly different countries and time periods. These differences alone suggest that the results could vary.
Moreover, many of the variables were operationalised in different ways. For economic data, Tzelgov (2011) uses data from the International Labour Organisation (ILO) and International Monetary Fund (IMF), Savage relies on the World Bank, Bergman et al. (2015) mainly use IMF data. Anyone who has worked with economic data knows that the estimates can vary significantly depending on the source.

These differences, coupled with the fact the models employed vary in what variables are included, can help us explain why there are few consistent results. Another, more statistical, reason is that many of the models seem to suffer from a lack of statistical power. Most of the studies have a large set of explanatory variables, and since the sample of countries available to us is rather limited, this could lead to difficulties in finding robust effects (Finlay and Agresti 2009: 168).

This problem is particularly poignant in the case of CEE since for unavoidable reasons, the sample is limited. However, we still have a wide range of explanatory variables that we want to include in our empirical models for theoretical reasons. The sample of cabinets in CEE can be seen as adequate for many purposes, but if too-complex techniques are employed, or the effect sizes are not large, and too many variables included, the results become very fragile (Finlay and Agresti 2009: 169). Power drops, and the likelihood of finding statistically significant effects is reduced. This has the corollary that small changes in the specification of the model or in the cabinets included in the sample can have a large impact on the tests of significance and even on the direction of the effects. Thus, if some cases are added or new variables included, this can lead to substantial differences in our estimation. Such sensitivity makes it difficult for new studies to replicate what has previously been done. For this reason, it could be a good idea to use other, more robust, statistical techniques to test our expectations of cabinet stability in CEE.

**Research design, data and measurements**

A large number of robustness or ‘sensitivity tests’ exist, which have in common that they analyse the uncertainty of models and test whether estimated effects of interest are sensitive to changes in model specifications or sample selection (for an overview see Neumayer and Plümper 2017). Thus, EBA is not the only tool to deal with model uncertainty, and there exist several alternative approaches, such as Bayesian Model Averaging (e.g. Montgomery and Nyhan 2010), Bayesian Averaging of Classical Estimates (e.g. Sala-i-Martin et al. 2004), and Random Forests (e.g. McAlexander and Mentch 2020). Although these have the same goal, compared to Bayesian model averaging techniques or Random Forests,
EBA has the advantage that it is relatively simple to estimate and produces easily interpretable results.\(^3\)

The EBA method was originally proposed by Leamer (1983; 1985) and Levine and Renelt (1992), and later modified by Sala-i-Martin (1997). EBA has been applied in a wide range of substantive areas, with conflicting results in different studies and thus uncertainty about the state of our knowledge. For example, Serra (2006) examined determinants of corruption; Gassebner et al. (2016) investigated the determinants of coups d’état, and Miller et al. (2018) studied coup contagion around the world. The principle of EBA is fairly simple, as it involves estimation of numerous models with different specifications to examine whether the estimated results for any variable are sufficiently stable across all or most specifications. By running a wide range of regressions where each regression entails a slightly different set-up of covariates, we can estimate how likely it is that an observed effect remains robust. A variable of interest is said to be ‘robust’ if the estimated coefficient exhibits a small range of variation (in terms of parameter estimates and precision) in the presence or absence of other explanatory variables. The methodology applied in this paper is Sala-i-Martin’s (1997) Extreme Bounds Analysis or Sensitivity Analysis.

To conduct an EBA, we define:

\[
y_j = \delta_j + M_j\alpha + F_j\beta + \gamma_jZ_j + \epsilon
\]  

where \(j\) indexes regression models, \(\delta_j\) is a vector of constants, \(M_j\) is a vector of explanatory variables that will always be included in the models. In our case, we always include a measurement for maximum possible duration of a government, as this varies between countries as defined by country-specific rules on elections. Similarly, to account for changes over time, we always include time fixed effects in the models (although these are not of direct interest). In addition, we always include the type of cabinet (i.e. minority cabinet, majority cabinet, oversized cabinet), as this is undoubtedly important for cabinet duration and does not make any sense to leave out in any of the regressions. Moving on, \(F_j\) is a vector containing the variables of interest or focus variables, and \(Z_j\) is an additional vector containing additional explanatory variables or control variables which, according to the literature, are related to the outcome variable (in our case, early termination). Finally, \(\epsilon\) denotes the error term. In addition to the variables included in all regressions (\(M\)), we chose to include from zero up to four additional variables in each of the estimated models, thus testing different combinations of the \(F\) and \(Z\) variables, resulting in a total of 1940 regressions.\(^4\)

The statistical model used in the EBA is a type of survival technique known as discrete time analysis. This logit-based model produces results
that are asymptotically equivalent and almost identical to the more common Cox proportional hazards model (Box-Steppensmeier and Jones 2004; Cox 1972; Kleinbaum and Klein 2005).

The variables used in the analysis come from a dataset that contains data on cabinets that were in power between 1990 and 2014 in the ten CEE countries that joined the EU in 2004 and 2007 (Bergman et al. 2019). We measure cabinet duration in the same way as in the earlier studies focusing on CEE. Thus, we estimate the general risk of discretionary early terminations (i.e. cabinet terminations that are both political and discretionary). Governments that terminate because of technical reasons such as the death of the PM or a constitutionally mandated election were right-censored, i.e. the information from their life-span is included, but the actual termination is treated as unobserved (Kleinbaum and Klein 2005).

When it comes to the variable of interest, or our focus variables, the choice was guided by the previous studies on cabinet stability in CEE and studies on Western Europe (e.g. King et al. 1990; Laver 2003; Laver and Schofield 1990; Warwick 1994). A total of 17 variables are included; they cover cabinet and parliamentary attributes, the economic context (or ‘critical events’), political institutions and, given the unique historical environment in CEE, context-specific factors. In order, we measure whether the government controls a minority, majority, or surplus majority of seats in parliament. A surplus majority is a government where at least one party could leave the government, and the remaining cabinet members would still control a majority of the parliamentary seats. Previous research in a Western context has shown that single-party minority governments are more durable than minority coalitions, and surplus majority coalitions are far less durable than smaller or single-party majority cabinets (e.g. King et al. 1990; Saalfeld 2008; Walther 2017; Warwick 1994).

Somewhat related, we also include a measurement of the number of cabinet parties, which has also been included in all studies summarised in Table 1. As the number of parties in the cabinet increases, bargaining over policy and compromises to reach agreement among coalition partners becomes more difficult and enhances the risk of a government breakdown (e.g. Somer-Topcu and Williams 2008; Warwick 1994). Size and number of cabinet parties thus seem to matter. In addition, as argued by Grotz and Weber (2012), given the greater electoral volatility and changes in the party system in many CEE countries, previous cabinet experience should be beneficial. Here, we follow Grotz and Weber and measure this by taking the average number of years the parties in the cabinet were in power previously.

The structure of the party system has also been shown to affect cabinet longevity, as it is a part of the bargaining environment in which cabinets
operate. Further, several studies have used the effective number of parties (Laakso and Taagepera 1979), as a proxy of bargaining complexity, and the availability of coalition alternatives. In Western Europe, at least, it is evident that the more fractionalised a parliament, the lower the durability of the cabinets (e.g. King et al. 1990; Saalfeld 2008; Warwick 1994). However, according to the previous studies of cabinet duration in CEE (as shown in Table 1), parliamentary fractionalisation does not appear to have any effect on the stability of governments in CEE.

Turning to the economic context, economic recessions may lead to infighting and conflict, which in turn can bring about the dissolution of the cabinet (e.g. Lupia and Strøm 1995; Robertson 1983). Specifically, the state of the economy affects strategic choices regarding the timing of both early elections and cabinet replacements. Incumbents evaluate their future electoral chances and decide whether to call an early election, recruit additional coalition members to secure a future parliamentary majority, or leave a coalition (e.g. Hellström and Walther 2019; Lupia and Strøm 1995). In CEE, we have reasons to suspect that the economy should be particularly important for cabinet longevity. Roberts (2008) even refers to the degree to which Central and East European voters sanction politicians for poor performance as ‘hyperaccountability’. This is a very high degree of electoral accountability where governments’ electoral performance is strongly affected by economic performance. To measure the economic context (with its booms and busts), we include unemployment, inflation, and GDP growth measured on a time varying basis in the analysis. That is, rather than having a static value for each government, the economic data is measured on a quarterly basis to track how the economic situation develops throughout the term of office.

In Western Europe, ideological polarisation, both within parliament (e.g. Maoz and Somer-Topcu 2010) and the cabinet (e.g. Saalfeld 2008; Warwick 1994), have been a strong predictor of cabinet durability. Lupia and Strøm (1995) argue that party system polarisation is an important aspect of government parties’ ‘bargaining environment’, which can have a direct effect of cabinet stability. More precisely, the bargaining environment that matters for government stability is the availability of plausible coalition alternatives. That is, in a context where cabinet members have the potential to be part of other governing coalitions, they have less reason to stick to a coalition that does not offer them enough benefit (also see Laver and Schofield 1990). However, in contrast, Warwick (1994) claims that party system polarisation rather has an indirect effect on cabinet duration, as it often determines the ideological range of the cabinet itself. In situations with a high degree of party system polarisation and no majority party, parties must form coalitions consisting of more
ideologically diverse parties that sometimes harbour incompatible policy goals, making it more difficult to agree on policies. In addition, in studies focussing on Western Europe, all but one (i.e. Somer-Topcu and Williams 2008) included the ideological distance or polarisation as determinants of cabinet duration in CEE. Thus, in our models, we include several ideological measures such as cabinet preference range, parliamentary preference range, polarisation, and communist successor party in cabinet. Cabinet and parliamentary preference range rely on party manifesto data to measure the distance between the party furthest to the left and the one furthest to the right on the left–right policy dimension. Polarisation measures the ideological spread in parliament measured as the standard deviation of left–right positions, weighted by party size. Thus, if large parties have clearly divergent ideological positions, the party system is rated as more polarised (Dalton 2008; Warwick 1998). These measures are partly correlated both with each other and with the effective number of parties. In the EBA model, however, the variables are rarely included all at the same time but instead take turns being included in different configurations. This ensures that we mostly avoid the problems associated with multicollinearity and lack of statistical power that would otherwise arise.

Our last variable that relates to ideological divisions and polarisation is specific for the Central and East European context, namely whether a communist successor party (CSP) was in government (Grotz and Weber 2012; Savage 2013; Tzelgov 2011). So, in the analysis, we include an indicator variable for whether the incumbent government includes one of the former communist parties. This explanatory factor is a special case since even though ideology is an important attribute of CSPs, the argument put forward in previous research for why CSPs have an impact on government stability has more to do with historical legacy and the effects on other parties of being in a coalition with CSPs (Grotz and Weber 2012; Tzelgov 2011). In that sense, it is not ideological divisions over how the country should be run that explain why CSPs have been found to affect stability, but rather the unique historical standing of these parties.

Finally, we also include a number of institutional factors that have been shown to be important in previous research (Saalfeld 2008; 2013; Schleiter and Morgan-Jones 2009a; 2009b). These are semi-presidentialism, bicameralism, a measure of the power of the PM, and rules of no-confidence votes. Countries that have a head of state with actual powers (rather than mostly ceremonial ones), and varying ability to influence formation and termination, have been coded as semi-presidential. Bicameralism is a simple measure of whether a second chamber is present, whereas PM power measures, on a seven-point scale, how much discretionary power the PM has, including whether s/he can decide to dissolve the cabinet. In addition,
we consider variations of parliament’s threshold to dismiss an incumbent cabinet. In their study of West European parliamentary democracy, Strøm et al. (2003) argue that the no-confidence vote is a powerful accountability mechanism, but also a blunt one. Its use can be quite restricted. In some countries, it takes an absolute majority of MPs to succeed, and the same majority might have voted to invest the government, to begin with. In such circumstances, removing the PM and the cabinet means that the ‘package deal’ that in policy terms, was the basis of the government might be in jeopardy and perhaps replaced with a less favourable one.

Consequently, a constructive vote of no confidence has been suggested as an important determinant of cabinet duration (Diermeier et al. 2003; Rubabshi-Shitrit and Hasson 2021). In countries with such a constructive rule, it is more difficult to bring down a government since the parliament can only withdraw its confidence from a Prime Minister if there is majority support for a prospective successor. However, the effect might be less clear cut in CEE (Bergman et al. 2019). Nonetheless, in Western Europe and CEE, a no-confidence vote varies in whether it is directed against the PM or the cabinet collectively, and even individual ministers. But there is also variation in who has the right to propose a vote, what time limits apply, in the number of allowed votes, the quorum requirement, and in the voting rules. In the context of cabinet duration, the voting rules are particularly important, as well as those no-confidence votes that terminate the whole cabinet. In this respect, the parliament’s threshold to dismiss an incumbent cabinet is highest under the special case of a constructive vote of no confidence, where a parliament can withdraw its confidence from a head of government only if there is a parliamentary majority for a successor. Excluding these cases, the most common voting rule is still an absolute majority (50%+1) of all MPs, followed by a simple majority of all votes cast, and least common – a simple majority of all valid votes cast with all blank votes excluded. To capture these variations of parliamentary cabinet removal powers, we code a three-level indicator variable, or whether a no-confidence vote requires: an absolute majority for a successor, i.e. constructive vote of no confidence (i.e. Hungary, Poland, and Slovenia), absolute majority; and a simple majority of all votes cast as reference category (i.e. Latvia and Slovakia). But it also varies in who has the right to propose a vote, what time limits apply, in the number of allowed votes, quorum requirement, and in voting rules (see Lento and Hazan 2021).

**Analysis and results**

A summary of the results from the 1940 regressions run in the EBA is reported in Table 2. The mean odds ratio is the average effect of the variable on the risk of early government termination in all the regressions in
which it was included. Thus, for example, a mean odds ratio of 1.05 indicates that a one-unit increase of the variable increases the risk of early termination by 5% on average. Mean Std.Err. is the average standard error from the same regressions.\textsuperscript{11}

The cumulative distribution function (CDF), in turn, is a measure advocated by Sala-i-Martin (1997) for assessing statistical significance. The CDF shows how often the estimated coefficient is different from 1, in particular, whether it is consistently higher or lower. A CDF of 0.95 indicates that the estimated coefficient deviates from 1.00 in the same direction in 95% of the regressions and corresponds to a 95% confidence interval around the estimated coefficient for the variable. Thus, we can then be 95% certain that the variable has a consistent effect and that it significantly helps us predict the likelihood of early termination.

As seen in Table 2, using Sala-i-Martin’s technique for interpreting the results, six variables were robustly associated with cabinet duration. Three of these variables are related to attributes of the cabinet or government type. Both minimum winning coalitions and surplus majority governments are significantly more stable than minority governments. So, in the 1940 regressions, regardless of what other variables were included in the model, majority cabinets of any type were significantly less likely to depart prematurely. Holding a majority of seats in parliament cuts the risk of early termination by 56% for surplus governments and by 41% for minority governments.

\begin{table}[h]
\centering
\begin{tabular}{|l|c|c|c|}
\hline
Variables & Mean odds ratio & Mean Std.Err. & CDF \\
\hline
Surplus Majority Coalition & 0.44 & 0.18 & 0.98\textsuperscript{**} \\
Effective no. of parties & 1.20 & 0.13 & 0.95\textsuperscript{**} \\
Demanding no confidence vote & 0.53 & 0.20 & 0.95\textsuperscript{**} \\
Unemployment (quarterly) & 1.06 & 0.03 & 0.95\textsuperscript{**} \\
No. of cabinet parties & 1.27 & 0.18 & 0.95\textsuperscript{**} \\
Majority cabinet & 0.59 & 0.19 & 0.95\textsuperscript{**} \\
Decade 2000s & 0.67 & 0.20 & 0.91 \\
Cabinet preference range & 1.01 & 0.01 & 0.87 \\
CSP in cabinet & 0.68 & 0.28 & 0.83 \\
Parliamentary preference range & 1.01 & 0.01 & 0.82 \\
Constructive vote of no confidence & 0.75 & 0.25 & 0.81 \\
PM powers & 0.89 & 0.12 & 0.80 \\
Previous cabinet experience & 1.00 & 0.00 & 0.76 \\
Polarisation & 1.02 & 0.03 & 0.75 \\
Bicameralism & 1.23 & 0.40 & 0.73 \\
Inflation (quarterly) & 1.00 & 0.00 & 0.67 \\
Maximum duration & 1.00 & 0.00 & 0.61 \\
GDP growth (quarterly) & 0.99 & 0.05 & 0.60 \\
Semi-presidentialism & 1.07 & 0.31 & 0.59 \\
\hline
\end{tabular}
\caption{Results from Extreme Bounds Analysis.}
\end{table}

Note: The reported results are the averages from the 1940 regressions that were run in the EBA. The CDF is the cumulative distribution of coefficients that are different from 0. The odds ratios of Surplus Majority Coalition and Majority Cabinet are in comparison to minority governments. ‘Decade 2000s’ is compared to the 1990s. ‘Maximum duration’ is a standard control for the maximum time in office available to the government (King et al. 1990). **p< 0.05.

\textsuperscript{11}
MWCs. This is an interesting finding since in Western Europe, surplus majority governments do not appear to be particularly stable on average (Damgaard 2008). When examining this in more detail, it turns out that a contributing, but not the only, reason for this finding, is the stable surplus governments in Hungary in the 1990s. In addition, and related to the type of cabinet, there is a robust association between the number of cabinet parties and a cabinet’s durability, where each additional cabinet member increases the risk of early termination by 27%. However, keep in mind that all regressions include the type of cabinet. Thus, these results should be understood as that single-party cabinets are more durable than coalitions, and smaller coalitions are more durable than larger ones, irrespective of whether they have a parliamentary majority or not.

In contrast to other studies of cabinet duration in CEE (as seen in Table 1), we find that party system fractionalisation as measured by the effective number of parties is also robustly associated with cabinet duration. With a CDF of 0.95 and a mean odds ratio of 1.2, each extra active player in parliament increases the risk of early termination by 20% on average. For instance, comparing the country with the lowest average effective number of parties since 1990, Bulgaria at 2.9, and the country with the highest is Slovenia at 5.91; this adds up to a 74% greater risk of early termination in Slovenia, other variables held constant.

Another factor that seems consistently related to cabinet duration is the economic results it can deliver. For each percentage point increase in unemployment, there is a 6% increase risk of premature termination. This means that if the unemployment rate in a country goes up by five percentage points, it leads to a 34% \((1.06^5)\) greater risk of early termination on average.

Finally, a last factor that could robustly affect cabinet stability is the constraints for the opposition to initiate and win a no-confidence vote. In the countries where measures have been taken to provide additional stability to governments, this is also reflected in government stability, as the risk for early cabinet termination is reduced by 47% on average. Nonetheless, these results should be interpreted with some caution, as they are based on between-country variation. However, we can be confident that government attributes and unemployment are factors that are robustly associated with cabinet duration.

Other results may indicate that governments are more stable in the 2000s and the 2010s than in the 1990s, and ideological heterogeneity of cabinets increases the risk of early cabinet termination, but also, having a CSP in the cabinet might lower the risk of termination. Greater scrutiny of the results for CSP in cabinet reveals that these effects primarily happen in the first decade after independence, which confirms Grotz and Weber’s (2012) argument that whether a party was a communist
successor party or not was more important to voters in the 1990s, especially as CSPs have changed a lot over time and in many cases split up or merged with other parties, which makes the definitions less clear cut. In addition, a constructive vote of no confidence also has a strong effect and lowers the risk of termination in 81% of regressions.

The other variables tried and tested here in the various model constellations show insignificant or no robust effects. Neither the other institutional factors nor the variables measuring the ideological spread in parliament seem to have effects that point reliably in either direction. This can be seen both in the CDF and the mean odds ratio, but also by visually inspecting the spread of the estimated coefficients for the different variables. This is shown in Figure 2. The histograms show how the estimated coefficients for the variables are spread out in all the regressions run. The centre of each histogram is also the mean odds ratio reported in Table 2. The variables that have a consistently influential effect generally have coefficients that are clustered in an approximately normal configuration some distance away from the dashed line at 1.00, which indicates no effect. In contrast, the variables that have no consistent effect are generally spread out on both sides of the dashed line and thus have effects pointing in both directions depending on how the model has been

![Figure 2. Spread of coefficients in the Extreme Bounds Analysis. Note: The histograms show the spread of the coefficients from selected variables in the 1940 regressions that were run in the EBA. The dashed line indicates no effect.](image-url)
specified. Semi-presidentialism is a good example of this, with a distribution of estimated coefficients at both sides of the line.

Some of the other variables, such as polarisation, have the vast majority of their coefficients on one side of the line, which seems to suggest that an effect can be discerned. But in those cases, either the standard errors of the individual estimates are too large, or the coefficients are spread out too widely for us to be confident in the mean estimate. When the spread of coefficients is lumped into bi- or even trimodal ‘humps’, this suggests that the variable depends heavily on other mediating variables and is thus sensitive to the model specification.

All of this shows how the EBA can measure the uncertainty both of the results in one individual regression and in the total results from all the estimated models. The robust results consist of the variables that have effects with low variance and strong precision in the individual regressions as well as coefficients that, when aggregated, point in the same direction, irrespective of how the model has been specified. Robust variables need to pass both of these tests, which allows us to be more confident in the reliability of the results than would otherwise be the case.

The four variables that were found to be the most robust – government type, demanding no-confidence vote, effective number of parties, and unemployment – show that the stability of governments in CEE is not primarily affected by sui generis factors to the region, but by factors of more general relevance. What makes the region stand out is instead that ideological and institutional factors are likely to be of less relevance, with the potential exception of restrictive no-confidence vote procedures that make it more difficult to bring down a government. The two ideological variables, parliamentary preference range and ideological polarisation, show both inconsistent and small effects in the EBA results, nor can robust effects be found from bicameralism, PM powers, and semi-presidentialism. Also, contrary to Grotz and Weber (2012), our results indicate no substantial or robust effect of the previous experience of a cabinet.

It is interesting to note that the variable polarisation is in fact quite similar to the effective number of parties. Just like the effective number of parties, it takes the number of actors and their size into consideration but also factors in the left–right ideological position. However, the results show that by adding this information we in fact lose explanatory capacity. In CEE, knowing the ideological diffusion, at least in terms of the left–right policy dimension, seems to do little to help us predict cabinet duration.

**Conclusion**

The main goal of this paper was to identify factors that consistently affect cabinet duration in Central and Eastern Europe. Previous studies give
little guidance of consistent and robust effects. By using Extreme Bounds Analysis to determine which factors used in previous research consistently impact cabinet durability, we find that only a few factors are robust to alternative model specifications (i.e. the inclusion or exclusion of other predictors). In CEE, only four factors have a robust influence, namely: government type, fragmentation in parliament, the level of unemployment, and restrictive no-confidence votes procedures which make it more difficult for the opposition to bring down a government. Other factors showed inconsistent effects in the sense that the estimated results depend too much on which other variables are included in the model. Nonetheless, the factors identified as robust are consistent enough for the conclusion to be drawn that they are likely to matter in future studies as well – irrespective of how the models are specified. Thus, this study shows that the stability of governments in CEE is not primarily affected by factors unique to the region, but those that have been shown to be relevant in Western Europe as well. In addition, recent research shows that there has been a convergence in two regions in the levels of electoral volatility, as Western Europe is approaching Central and Eastern Europe with increasing electoral instability over the last decade (Emanuele et al. 2020). Thus, although we find in our study a lowest-common-denominator of factors that are relevant in CEE, it might not make sense to separate between the two regions when analysing cabinet stability in future studies. At least not after the turn of the millennium, as the robust determinants of cabinet stability appears not to differ between Western Europe and Central and Eastern Europe.

Notes

1. Here, we use the terms cabinet stability, cabinet duration, and cabinet longevity interchangeably. However, to be precise, cabinet stability, the phenomenon of interest here, is usually measured as duration, i.e. the empirical time span (often measured in days) between the formation and the termination of a government.

2. Although Grotz and Weber (2012) included this in a model without their interaction terms, it was found to be non-significant.

3. Extreme Bounds Analysis is a ‘frequentist’ model averaging method, with similarities to Bayesian Model Averaging in the Bayesian framework.

4. However, we also run EBA analyses using only up to three additional F and Z variables to gain adequate statistical power to detect the statistical significance of smaller effect sizes and to ensure that the results were not sensitive to the number of additional variables in the model (not shown here). We also estimated models including only regression that had a VIF factor as low as 3. This yielded analogous results to the ones presented here.

5. The countries included are Estonia, Latvia, Lithuania, Poland, the Czech Republic, Slovakia, Slovenia, Hungary, Romania, and Bulgaria. The full dataset and replication files are available at www.erdda.org.
6. Ideally, discretionary terminations should be divided into early elections and government replacements (Lupia and Strøm 1995). However, the limited sample size here does not allow for such fine-tuning. In the ten CEE countries included here, less than ten percent have been terminated through discretionary early elections, which means we must study the general risk for termination (including both early elections and replacements).

7. As argued by Saalfeld (2008: 346), the measure could be seen as ‘a proxy measure for number of potential opposition parties that that could be candidates for inclusion in the cabinet (leading to a cabinet replacement)’.

8. Tzelgov’s (2011) definition of a communist successor party has been adopted here.

9. This coding follows Schleiter and Morgan-Jones (2009b).

10. These countries are the Czech Republic, Poland, Romania, and Slovenia.

11. The analysis was carried out using Hlavac’s (2016) Extreme Bounds Analysis package for R.

Acknowledgements

We are grateful to the journal editors and the anonymous referees for their extensive feedback and detailed suggestions. We also gratefully acknowledge the support of the Marianne and Marcus Wallenberg Foundation (MMW 2011.0030) that made this research possible.

Disclosure statement

No potential conflict of interest was reported by the author(s).

Notes on contributors

Daniel Walther has a PhD in Political Science from Umeå University. His main research interests are cabinet stability, party behaviour, political polling and elections. His work has been published in journals such as Electoral Studies, Government and Opposition, Political Science Research and Methods and West European Politics. [danielbwalther@gmail.com]

Johan Hellström is an Associate Professor in Political Science at Umeå University. His research interests are in the area of political institutions and democratic representation in Europe. His work has been published in journals such as the European Journal of Political Research, Journal of European Public Policy and West European Politics, among others. [johan.hellstrom@umu.se].

ORCID

Daniel Walther http://orcid.org/0000-0001-8805-6161
Johan Hellström http://orcid.org/0000-0002-6613-4242

References


## Appendix

### Overview of variables

#### Table A1. Numeric variables.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Min</th>
<th>Max</th>
<th>Mean</th>
<th>Median</th>
<th>Std.Dev</th>
<th>N (months)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximal duration</td>
<td>61.00</td>
<td>1488.00</td>
<td>1189.71</td>
<td>1409.00</td>
<td>354.72</td>
<td>2376</td>
</tr>
<tr>
<td>Effective nr parties</td>
<td>2.19</td>
<td>10.47</td>
<td>4.33</td>
<td>4.26</td>
<td>1.37</td>
<td>2376</td>
</tr>
<tr>
<td>Previous cabinet experience</td>
<td>0.00</td>
<td>3834.00</td>
<td>795.22</td>
<td>679.67</td>
<td>772.86</td>
<td>2306</td>
</tr>
<tr>
<td>Cabinet pref. range</td>
<td>0.00</td>
<td>76.68</td>
<td>15.65</td>
<td>14.25</td>
<td>15.30</td>
<td>2175</td>
</tr>
<tr>
<td>GDP growth (quarterly)</td>
<td>21.26</td>
<td>13.30</td>
<td>0.40</td>
<td>1.01</td>
<td>3.25</td>
<td>2331</td>
</tr>
<tr>
<td>Inflation (quarterly)</td>
<td>3.80</td>
<td>1721.90</td>
<td>26.70</td>
<td>6.60</td>
<td>105.69</td>
<td>2336</td>
</tr>
<tr>
<td>Nr. cab. parties</td>
<td>1.00</td>
<td>6.00</td>
<td>2.72</td>
<td>3.00</td>
<td>1.13</td>
<td>2341</td>
</tr>
<tr>
<td>Parliamentary pref. range</td>
<td>9.78</td>
<td>97.85</td>
<td>34.19</td>
<td>29.67</td>
<td>16.85</td>
<td>2210</td>
</tr>
<tr>
<td>PM powers</td>
<td>1.00</td>
<td>5.00</td>
<td>3.02</td>
<td>3.00</td>
<td>1.16</td>
<td>2376</td>
</tr>
<tr>
<td>Polarisation</td>
<td>0.01</td>
<td>32.17</td>
<td>10.06</td>
<td>8.77</td>
<td>5.94</td>
<td>2210</td>
</tr>
<tr>
<td>Unemployment (quarterly)</td>
<td>2.80</td>
<td>21.40</td>
<td>10.49</td>
<td>9.67</td>
<td>4.38</td>
<td>2225</td>
</tr>
</tbody>
</table>

#### Table A2. Categorical variables.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Category</th>
<th>Count</th>
<th>Share</th>
<th>N (months)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Government type</td>
<td>Minority</td>
<td>616</td>
<td>0.26</td>
<td>2341</td>
</tr>
<tr>
<td></td>
<td>MWC</td>
<td>1102</td>
<td>0.47</td>
<td>2341</td>
</tr>
<tr>
<td></td>
<td>Surplus Majority</td>
<td>623</td>
<td>0.26</td>
<td>2341</td>
</tr>
<tr>
<td>Semi-presidentialism</td>
<td>No</td>
<td>1154</td>
<td>0.49</td>
<td>2376</td>
</tr>
<tr>
<td></td>
<td>Yes</td>
<td>1222</td>
<td>0.51</td>
<td>2376</td>
</tr>
<tr>
<td>Bicameralism</td>
<td>No</td>
<td>1411</td>
<td>0.59</td>
<td>2376</td>
</tr>
<tr>
<td></td>
<td>Yes</td>
<td>965</td>
<td>0.41</td>
<td>2376</td>
</tr>
<tr>
<td>Vote of no confidence</td>
<td>Constructive</td>
<td>680</td>
<td>0.29</td>
<td>2376</td>
</tr>
<tr>
<td></td>
<td>‘Demanding’ (i.e. absolute majority)</td>
<td>1265</td>
<td>0.53</td>
<td>2376</td>
</tr>
<tr>
<td></td>
<td>Simple majority (ref.)</td>
<td>431</td>
<td>0.18</td>
<td>2376</td>
</tr>
<tr>
<td>Decade</td>
<td>1990s</td>
<td>1105</td>
<td>0.47</td>
<td>2376</td>
</tr>
<tr>
<td></td>
<td>2000/2010s</td>
<td>1271</td>
<td>0.49</td>
<td>2376</td>
</tr>
<tr>
<td>CSP in cabinet</td>
<td>No</td>
<td>2006</td>
<td>0.84</td>
<td>2376</td>
</tr>
<tr>
<td></td>
<td>Yes</td>
<td>370</td>
<td>0.16</td>
<td>2376</td>
</tr>
</tbody>
</table>