

Ministerial turnover in the German Bundesländer (1990-2011)

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Comments very welcome!

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INTRODUCTION

In the last few years we have observed two remarkable trends in the comparative analysis of governments. The first was a shift away from a purely institutional focus, bringing the individual back into analysis both as a dependent and independent variable. The second followed the rise of studies which attempted to gain a broader and deeper understanding of the underlying mechanisms that govern the fate of cabinets. This was done by expanding the originally only Western nation states in the observed samples either to include Central and East European countries or onto the sub-national level. This article incorporates both trends as it tries to explain the determinants of ministerial turnover within the governments of the sixteen German Länder during the period from 1990 to 2011. To achieve this I borrow from the already quite extensive body of government survival literature and test whether the factors found in these works, that explain the durability of governments in general, are also applicable to individual ministers' careers. Moreover, I will investigate if there are even different effects from the ones detected on the level of the whole government. In this regard the paper follows the seminal works of Huber and Martinez-Gallardo.¹ In addition to factors which arise predominantly from classic institutional theory, I incorporate biographic data which has previously been analysed in a purely qualitative and descriptive manner.² However, the descriptive single case studies employed in these works do not allow for the systematic testing of factors that determine ministerial turnover. It is therefore necessary to include political and biographic data as well as the socio-demographic characteristics of the ministers into a large-N research design. The analysis conducted in this paper is based on a newly compiled dataset for the German Länder ministers, combining classical political and institutional variables on the government and parliament level (e.g. type of government or policy-distance) with characteristics of the individual ministers (e.g. sex, age, education, experience in earlier cabinets). The method used is a Cox proportional hazard model which has already proven its suitability in government durability research.³

RESEARCH QUESTION, DEFINITIONS AND DIFFERENCES TO EXISTING RESEARCH

In contrast to government survival literature,⁴ this paper focuses exclusively on the fate of individual ministers. This individual-oriented perspective separates it from other works that approach ministerial turnover from the perspective of the prime minister and ask under which conditions and for what reasons she reshuffles her cabinet, demotes or promotes ministers and induces individual ministers resignations.⁵

Instead, the lead question that is analysed here, is how long is a minister able to remain in cabinet, or as a second variant of this question, how long is she able to remain in a specific ministerial position. Therefore two different models are proposed, one explaining the overall duration in cabinet and the second one the duration within a specific ministry. The rationale which underlies these questions is that we often witness a multitude of factors when a minister's time in cabinet/office comes to an end. I assume many of these factors to be contingent on the minister herself as well as on the political sphere in which she operates. This stands in contrast to present studies which maintain a strong focus on the prime minister's capacities to hire and fire. For example, with their record of coalition governments the prime ministers' autonomy for cabinet reshuffles or demotions is much weaker in the German Länder than it is in Great Britain or Australia – two countries often discussed in ministerial turnover literature.⁷ Thus the context of coalition governments is one of the aspects that must be taken into account when analysing ministerial turnover in the German Länder.

Apart from more sociological works following the seminal book by Dietrich Herzog⁸ which gave questionnaires to a more or less representative sample of top-politicians concerning their paths to power,⁹ existing research on selection and de-selection processes for German political elites has focused predominantly on parliamentarians¹⁰ and federal ministers¹¹ or career patterns connecting both.¹² Yet the subnational level is often only analysed as a recruiting pool for a position on the federal level.¹³ One exception is a book by Lars Vogel¹⁴ describing the recruitment of federal as well as Länder ministers. Contrary to the more comprehensive literature on selection mechanisms, a systematic analysis of ministerial turnover and thus durations in power has nevertheless until now been missing for the German Bundesländer.

The definition of what constitutes a case is crucial for any statistical analysis. Particularly in event history analysis, this definition is not completely self-evident as there is always the question as to which events are considered terminal. In this study according to the two folded research question, two different definitions are used:

1. Duration in cabinet

According to the first variant of the research question a case is defined as a person who has been part of a cabinet without interruption, regardless how many different ministerial positions she has been holding during her time in government.¹⁵ Thus neither elections nor reshuffles automatically serve as terminal events,¹⁶ only when a minister entirely leaves cabinet (for any reason) does her ministerial spell end. When the same person re-enters the

cabinet after a period of time during which she was not part of the government a new case occurs according to this first definition.

2. Duration in a specific ministry

According to the second definition every minister who leaves her specific ministerial position is used as a case. Therefore only if a minister remains in exactly the same portfolio (e.g. after an election) this is not counted as a terminal event, but all instances of shifts in the portfolios, when she takes on a new portfolio, when she gets additional further competences or loses some other are regarded as terminal events.

According to both definitions for every case the starting and ending points of the spell, biographic information on the minister and information about the political-institutional setting of the government(s) of the respective ministerial spell(s) are recorded. The focus on the individual ministers also speaks against a definition often used for reshuffles which counts only simultaneous changes of two or more ministers as a reshuffle.¹⁷ In the present analysis every minister leaving the cabinet/ministry is counted, regardless of whether she has left alone or at the same time together with colleagues.

DATA AND DESCRIPTIVE ANALYSIS

The compiled dataset covers all German Länder ministers that left the cabinet between 01.01.1991 and 31.01.2011. Applying the aforementioned definitions for terminal events, 751 cases of ministers' duration in cabinet can be identified and 1016 cases of ministers' duration in a specific ministry. The following table 1 provides an overview of the types of terminal events and their frequencies within the dataset. The categories for the classification of the terminal events are used in a mutually exclusive manner, although in the reality of research it is often not possible to determine the real, single cause of a ministerial turnover.¹⁸ In contrast, we often face an accumulation of different reasons resulting in the end of a ministerial spell.¹⁹ This phenomenon is well-established in the analysis of government terminations, and addresses the complex issue of precisely naming the type of terminal event.²⁰ The categorization is thus based on the most relevant type of termination, knowing that this decision is subjective and far from being without ambiguity. The categorization of terminal events is first of all necessary for censoring and this dichotomous classification can be done without significant error, as the following paragraph shows in more detail.

Bearing the above mentioned problems in mind, some preliminary descriptive conclusions can be drawn from the table: Approximately one fifth of all ministers had to leave the cabinet because their party was voted out of government, but we see a large variation here: While the CSU has been governing in Bavaria for the whole observation period (from 2008 on together with the FDP) there have been major electoral turnovers for example in Saxony-Anhalt where nearly all types of party cabinet compositions could be observed during the last 20 years (CDU/FDP, SPD/Green, SPD, CDU/SPD).

While only one minister died during her time in cabinet, 27 had to leave government because of health reasons. Particularly in Berlin, Brandenburg and Lower Saxony ministers often left the cabinet for taking another political position whereas we find the most ministers changing into private business in Berlin, Baden-Württemberg and Schleswig-Holstein.²¹

We only find very few instances that a party breaks a governing coalition due to policy differences and entirely leaves the cabinet. One of these instances was in Berlin, when as a result of a SPD-initiated vacation of seized buildings, all three Green ministers resigned from their positions in the SPD/Green government shortly before the first joint elections for the Berlin chamber of deputies in December 1990. Moreover, Berlin witnessed one of the two cases where a vote of no confidence launched against a prime minister resulted in a ministerial turnover (the other was Heide Simonis in Schleswig-Holstein). In 2001, four ministers together with the governing mayor Eberhard Diepgen subjected their fate to a vote of no confidence and as a consequence left the government when the majority of the parliamentarians no longer supported Diepgen.

A lack of support from one's own party can only be made responsible for the turnover in a small number of cases whereas scandals account for more than ten percent of all terminations of ministerial spells.²² In more than one fifth of cases it is simply not possible to determine exactly which of the discretionary types of termination is at work – at least with the informational basis available (*Munzinger Archiv*).

Taking a look at the additional terminating events for the question of the duration in a specific ministry we find changes into a different portfolio to be the major type, followed by promotions and demotions as well as minor portfolio changes. Yet, again there is a large variance between the Bundesländer. In Bavaria and Baden-Württemberg we find a high number of ministers changing their portfolios while staying part of the cabinet, whereas this is clearly an exception in Brandenburg and Saxony-Anhalt.

Table 1: Types and frequencies of terminal events by *Bundesland*

	BE	BR	BW	BY	HB	HE	HH	MV	NI	NRW	RP	SH	SL	SN	ST	TH	sum
no change in portfolio	15	27	57	39	8	18	48	26	45	30	32	20	20	29	18	21	453
voting out of government (at elections)	4	6	4	-	6	20	20	10	13	23	10	2	8	2	22	8	158
death	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	1
ill health / age	-	2	2	-	2	1	-	4	3	3	3	3	1	-	2	1	27
change to other political/state position (e.g. federal government, other state government, central bank)	7	9	5	1	3	4	3	2	7	5	5	3	5	5	3	5	72
change into private business/deliberately exiting politics	8	2	7	4	5	5	5	-	1	3	2	8	-	-	1	3	54
problems within the governing coalition (whole party leaving the government)	3	-	-	-	1	-	3	-	-	-	-	4	-	-	-	-	11
problems within the own party	1	1	2	6	1	-	1	5	-	-	-	4	2	1	1	1	26
scandal	3	7	5	6	3	6	8	2	3	5	1	2	1	6	8	4	70
partial ministerial reshuffle after elections	8	1	7	1	8	1	9	5	-	5	-	3	6	2	2	4	62
other terminal event (politically induced)	9	8	4	9	4	8	6	3	8	2	3	6	4	19	6	13	112
lost vote of no confidence against prime minister	5	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	6
change into different ministry	6	4	14	19	13	7	9	6	5	13	5	6	5	12	3	11	138
promotion (additional portfolio/competences)	4	-	9	7	5	4	5	1	2	7	8	3	4	3	4	2	68
demotion (losing of portfolio/competences)	2	-	1	4	8	-	1	1	1	1	1	2	2	1	-	2	27
minor portfolio changes	2	-	6	-	3	2	-	2	-	3	1	8	1	1	1	2	32
still in office at 31.01.2011	9	9	12	12	7	11	6	9	10	12	8	8	9	10	10	10	152
sum (all events)	86	76	135	108	78	87	124	76	98	112	79	83	68	91	81	87	1469
sum (duration in cabinet)	57	45	48	39	41	56	61	40	45	58	32	44	36	45	55	49	751
sum (duration in ministry)	71	49	78	69	70	69	76	50	53	82	47	63	48	62	63	66	1016

BE: Berlin; BR: Brandenburg; BW: Baden-Württemberg; BY: Bavaria; HB: Bremen; HE: Hesse; HH: Hamburg; MV: Mecklenburg-West Pomerania; NI: Lower Saxony; NRW: North Rhine-Westphalia; RP: Rhineland-Palatinate; SH: Schleswig-Holstein; SL: Saarland; SN: Saxony; ST: Saxony-Anhalt; TH: Thuringia. The first row contains ministers that continued to stay in the same ministry despite elections, changes in the party composition of the government or the change of the prime minister. These instances are not counted as terminal events. The light grey rows indicate terminal events which are censored in the statistical analysis. The dark grey rows indicate events that are only regarded as terminal for the second research question on duration in a specific ministry.

METHOD

The study applies event history analysis (EHA). This method is appropriate as we are not only interested in the question *if* a certain minister leaves the cabinet (this kind of question could also be answered using a logit model), but also *when* this event takes place. Therefore we model the **hazard rate λ** – a combination of the survival and the probability density functions.²³ The hazard rate can be

regarded as the conceptual core of any EHA. It is defined as the number of dropped out units at time t divided by the quantity of units alive shortly before t and therefore still at risk of failing. In other words the hazard rate represents the instantaneous risk that an event will occur, in this paper that a minister will leave the cabinet/ministry, during the extremely short interval Δt , under the condition that she has not left until time t . A number of studies on government termination have used fully parametric models that specify a certain time dependency function (baseline hazard).²⁴ The problem with such models is that a misspecification of the functional form of the time dependence can bias the overall estimation.²⁵ Therefore, recent studies on government termination mostly rely on the semi-parametric **Cox-model**.²⁶ The Cox-model enables researchers to estimate the influence of attributes on the hazard rate without knowing the functional form of the baseline hazard and thus without the danger of introducing error into the model through a misspecification of this underlying hazard.²⁷ It is therefore the best choice for the estimation of ministerial turnover hazards. The Cox-model implicitly supposes that the covariates can only cause proportional changes of the hazard rate but cannot alter its basic functional form. This assumption, when unjustified, would result in biased estimates. It is therefore necessary to test the model globally as well as every single covariate for proportional hazards.²⁸ For the estimation of the β -coefficients Cox introduced the partial likelihood method which differs from maximum likelihood estimation insofar as it uses only part of the information contained in the event history data.²⁹ The exact survival times are not used for the estimation but rather the ascending order of these durations. Hence the Cox-model assumes that the absolute differences between the survival times do not contain any further information regarding the dependency between covariates and hazard rate.³⁰

Another important feature is censoring. Censoring in EHA does not imply losing the entire information contained by a case, instead, censored observations enter the model not with their empirically observed duration, but with a somewhat longer duration estimated by the survival function. It is not possible to predict exactly how long these censored ministerial spells would have lasted but the survival function gives the probability that a censored ministerial spell would have had a duration at least as long as observed if not longer. In the present study – as the exact starting points for all analysed ministerial spells are known – only right censoring is relevant. At the end of the observation period – which is the same day (31 January 2011) throughout the whole sample – there are still ministers in every cabinet in power whose spells have not yet ended, a classic case of right censoring. Other observations are treated from a statistical point of view in exactly the same way as such a classic right censored observation, although they terminate within the observation period. The

reasons for this treatment are the different kinds of terminating events. They do not end because of an event of interest – i.e. a minister leaving the cabinet/ministry for some political reason – but they leave because of some other event which cannot be directly attributed to the respective minister. Hence the duration would have been longer, if this (other) event had not happened. A study on government terminations by Damgaard which distinguishes between ‘technical and discretionary terminations’ serves as a blueprint for the classification of censored and non-censored cases. While technical terminations ‘are beyond the control of the players’, discretionary terminations ‘are deliberately brought about by the actors involved, even if these actors may feel that they have no other options’.³¹ The relevant players in this game are first and foremost the minister leaving office, the prime minister and the coalition partners’ parliamentary factions. While it is difficult to determine the exact type of discretionary termination – the numbers in the white rows in table 1 should therefore be interpreted with some caution – the distinction between cases that end with a discretionary event of interest and those that have to be censored is more or less clear cut.

Apart from those ministers still in office at the end of the observation period, three types of events should be considered for censoring: The most obvious one is death, as a minister would have clearly been longer in power if she had not died during her time in office. Nevertheless this happened only one time in the complete dataset. The same can be true for resignations due to illness or old age, although it is hard to definitely decide whether these reasons were not just put forward to divert from other political problems. Perhaps the most controversial censoring event is the voting out of office of a governing party at elections. Yet, as long as one regards such a voting out of office as not exclusively caused by the analyzed minister, it can be considered as no event of interest and therefore be censored. The following analysis censors ministerial spells ending due to death, ill health & old age, voting out of government and the end of the observation period. To check whether the chosen censoring regime biases the overall results three more censoring types are tested: one not censoring elections, one not censoring ill health & old age and one not censoring both of these terminal events.

HYPOTHESES AND OPERATIONALISATION

Following theoretical and empirical works on ministers’ lifetimes and government survival,³² two main blocs of factors can be identified as potentially relevant to the causes of ministerial turnover. First, attributes of the institutional and political setting (aggregate level) determine the arena in

which the ministers act and second, biographic information about respective ministers (individual level) also have an influence. Biographic data includes personal and socio-demographic characteristics (sex, age, education) as well as political characteristics such as her record of earlier ministerial spells. An overview of the factors tested in the following analysis is provided in table 2.

Table 2: Independent variables for the statistical analysis

aggregate level	individual level
type of government (SPG, coalition government with the minister being from the same party as the PM, minority cabinet)	age (time-varying)
majority (percentage of parliamentary seats of the government party/parties)	regional rootedness (birthplace in the same <i>Bundesland</i> as the ministerial job)
ideological policy distance between the coalition partners	sex
important ministry	tertiary education, doctorate - PhD, <i>Habilitation</i>
	same party as prime minister
	length of time of party membership (time-varying)
	career changers (did the minister come from private business) & party affiliation
	prime minister (dummy)
	number of different cabinet positions (portfolios) during the ministerial spell
	number of spells the minister has served before the actual spell
	only tested for East German sub-sample
	member of one of the bloc-parties in the former GDR (dummy)
	<i>import</i> from West-Germany (dummy)

Aggregate level factors

Studies of government survival have shown that single party majority governments (SPG) and minimal winning coalitions (MWC) are the most durable types of cabinets,³³ even though they reveal significant differences in their kinds of terminations: while SPG more frequently exercise the option of dissolution of parliament followed by early elections, MWC show a higher risk for replacements.³⁴ The underlying logic of this phenomenon can also be applied to the question of ministerial turnover. In a SPG the prime minister possesses much greater autonomy in reshuffling her cabinet. Moving ministers from one portfolio to another can help to reduce agency loss,³⁵ but in some instances there is likely no other option than to remove a minister who is either mired in scandal or pursuing policies too removed from the prime minister's own policy position. In these cases it should be easier for the prime minister of a SPG to replace the problematic minister or induce her resignation³⁶ than for a prime minister who is bound by coalition politics.³⁷ For these

coalition governments a distinction must be made: when the minister is a member of the same party as the prime minister, her turnover can most likely be pushed through as easily as in a SPG or even easier, as the coalition partner should normally have no reason to adhere to a politician from another political party. In contrast, the coalition partner will generally try to keep its own minister in power. The following hypothesis can be formulated:

H1: *In SPG and for those ministers in coalition governments that belong to the prime minister's party, the risk for ministers to leave their ministry as well as to leave the whole cabinet should be higher than for ministers in coalition governments who belong to the small coalition partner(s).*

Minority governments are unusual in the German Länder. Examples are the so called *Magdeburg model*, a SPD led government tolerated by the PDS in Saxony Anhalt between 1994 and 2002 or the SPD-Greens coalition in North Rhine-Westphalia under Hannelore Kraft (2010 -) who does not have a majority of its own, counting on changing support from either PDS or FDP. Other minority governments were mostly caretakers. The statistical analysis controls for minority governments. In their study on ministerial tenure in Great Britain, Berlinski and Dowding showed that majority size does not influence ministerial turnover.³⁸ Despite differences in the political system the underlying logic can also be applied to our sample and I assume to find the same pattern in the German Länder.

H2: *We do not expect to find differences between the hazard rates of ministers (for cabinet duration as well as for duration in a ministry) that hold a large majority and those building on only a small parliamentary majority.*

As for government survival,³⁹ ideological partisan differences may play a role in ministerial turnover. For testing this assumption data on the political positioning of the parties on the two dimensions *economy* and *society* as well as data on the salience of these two dimensions for the respective parties were used.⁴⁰ The salience-weighted Euclidean distance of the coalition parties on these two dimensions serves as a proxy for intra-coalitional policy differences.⁴¹ The assumption is that the higher the policy differences in coalition governments, the more often these differences will impact the personal level, leading to personal changes within the cabinet.

H3: *The higher the salience-weighted Euclidean distance between the coalition parties, the higher the hazard for ministerial turnover should be.*

Clearly there are differences between ministries according to their importance. Although this importance is also a function of the parties' ideology (Greens will most likely assign more weight to the ministry of environment, whereas Social Democrats might deem the ministries of labour and social welfare more important), we can, with respect to the specific Länder competencies, nevertheless identify a certain core of ministries which are of specific significance for all governments. These are the ministries of finance, education & cultural affairs, economic affairs and of the interior.⁴² Especially in these important ministries personal continuity is essential and parties can be expected to appoint their best personnel to these positions. Both factors support the view that these ministers should have longer durations in these specific ministries and as a consequence cabinet.

H4: *Ministers holding an important cabinet position should have a lower hazard for turnover.*

Individual factors

Biographic information constitutes the second set of factors which potentially determine a minister's duration in cabinet. The age of the minister must be controlled for, because older ministers may have reached retirement age or may feel – especially when confronted with political pressure – that they 'have reached the highest rung on the ladder and so [are] more willing to leave office to take a look at those outside options'.⁴³ Age is included as a time-varying covariate in the Cox-model and we can hypothesize:

H5: *The older a minister is, the higher her risk for leaving the cabinet should be.*

Women are still underrepresented in political positions. However, the percentage of female ministers is significantly higher than the percentage of female prime ministers, showing that the realization of equal opportunities is a stepwise process starting at lower political levels. A comparison with research on government survival is nevertheless instructive at this point:⁴⁴ while controlling for sex does not result in significant differences in the hazard rates between governments led by a male and those led by a female prime minister, a closer inspection of the latter reveals two types of women that hold this position. First there are women with a strong personality and a sizable backing within their party, like Margaret Thatcher or Gro Harlem Brundtland, who also show government durations considerably above (male) average. The second type of female prime ministers reveals durations that are clearly below average length (e.g. Irena Degutienė in Lithuania or Maria de Lourdes Pintasilgo in

Portugal). These women are often taken as caretaker or compromise candidates. Applied to ministerial turnover a similar pattern could be assumed.

H6a: *At the aggregate level no difference between hazard rates of women and men can be expected.*

H6b: *In comparing male and female ministers, the latter should reveal a clearer dichotomy between those ministers with explicit above and those with explicit below average spell duration in the specific ministry as well as in government in total.*

Education is another personal attribute that could influence the turnover rate. Berlinski and Dowding have shown that there seems to be a difference between cabinet members with public and those with a private school education in Britain. Especially ministers that have studied in Oxford or Cambridge reveal a lower turnover hazard than those not having an ‘Oxbridge background’. According to that research, the type of school attended by a minister serves as a proxy for ‘characteristics of the minister such as acquired skills, latent ability or access to social networks’.⁴⁵ While in theory these characteristics can be seen as relevant for job performance as a minister as well as at a possible job later in the private business – and hence could work in both directions – empirical evidence indicates that an elitist education decreases the minister’s hazard for turnover. In Germany nevertheless there is no such strict distinction between elite universities such as Cambridge or Oxford and average ones. Therefore in this study we only distinguish between ministers with or without tertiary education, those holding a Dr/PhD and those having received a *Habilitation*.⁴⁶ The argument thus must be slightly adapted: a university degree and especially a PhD shows, apart from the higher level of education, a certain dedication the minister has put into her career, sometimes even during times when she was already politically active. Therefore having completed a university education or even a PhD can in addition to being a proxy for higher education also be seen to some extent as a proxy for drive and assertiveness which can enhance the chances of staying in power when problems arise. We formulate the following hypothesis:

H7a: *Ministers having completed tertiary education and especially those holding a PhD should have lower hazard rates.*

For ministers having received a *Habilitation* the education argument turns around. The time that has to be invested in the academia for obtaining this postdoctoral degree can in the end be missing for a thorough party and political career and also a return into academics could often be an option for such ministers.

H7b: *Ministers holding a Habilitation should have higher hazard rates.*

Being regionally rooted in the *Bundesland* where the minister holds office could have a positive impact on duration in cabinet. The same should be the case for ministers who can look back on a long party membership and thus *ceteris paribus* have a stronger backing within their own party than new members. No effects on the duration in a specific ministry are assumed.

H8: *Ministers serving in the same Bundesland, where they were born should have a lower hazard for leaving the cabinet than those lacking these regional roots.*

H9: *The longer a minister has been a member of her party the lower the hazard for leaving the government should be.⁴⁷*

Career changers coming from private business, bureaucracy or academia who are appointed as expert-ministers are controlled for as well. Prime ministers sometimes use this option to gain expertise for their cabinets. Especially in the East German *Bundesländer* this phenomenon could be observed quite often. Additionally, these expert-ministers frequently do not hold a party membership which should result in more fragile backing in times of conflict.

H10: *Ministers that were appointed as expert-ministers, coming from private business, bureaucracy or academia should have a higher hazard. The same should be true for non-party ministers.*

At least when it comes to ministerial turnover prime ministers are more than just a *primus inter pares* within government. On the one hand they have the power to dismiss ministers within their cabinets, but on the other hand they cannot be dismissed so easily. The only possibility for a (forced) turnover of a prime minister (apart from voluntary resignations) is to lose a vote of no confidence or a motion of confidence.⁴⁸ In addition, the change of a prime minister is always more severe than the turnover of any other minister as it is synonymous to a government termination. Accordingly the assumption is clear:

H11: *Prime ministers should have a lower hazard rate than the other cabinet members.*

The last biographic factor to be controlled for is the amount of expertise a minister has accumulated during her political career. Two operationalisations will be tested: first, the number of ministerial spells a minister has served before the actual spell and second, the number of different cabinet

positions the minister held during the actual spell (this operationalization is of course only meaningful for the analysis of the duration in cabinet and not for analyzing the duration in a specific ministry, as a change in cabinet positions is here always equivalent to a terminal event. A return into cabinet after some time during which the minister was not part of the government could be interpreted as an indication of her power or quality, both leading to a lower hazard for turnover:⁴⁹

H12: *The higher the number of spells a minister has served in the cabinet before the actual spell, the lower her hazard for leaving the cabinet should be, while the hazard for changing into a different ministry should be higher.*

The consequences of a high number of cabinet positions held during the ministerial spell are unclear. Shuffling from one portfolio to another can have different reasons: Either the minister does not satisfy the expectations of the prime minister and hence must change office. This would be an indication of a lack of support that could ultimately result in a short duration in power. Or someone who is an exceptional crisis manager and generalist could also be employed each time the government faces political trouble. Such a minister would most likely have a lower risk for leaving the cabinet as she is one of the pillars of the government and central to its performance. It is therefore difficult to make a clear prediction about the direction of influence for the number of cabinet positions a minister held during her spell. Both directions of influence are theoretically possible. Yet there is additionally a more basic dependence of survival time on work: a minister who has already served in a number of different portfolios almost certainly also has served a certain length of time.⁵⁰ Taken this time-argument together with the higher experience argument we can hypothesize:

H13: *The more portfolios a minister held during her time in cabinet, the lower her hazard for turnover should be.*

East German specifics

Some particular aspects must be considered for the East German Bundesländer. When the GDR ceased to exist, the bloc parties merged into their western counterparts.⁵¹ These bloc parties that had been centralized in the National Front had been entirely politically dependent on the SED. In the wake of the political events in 1989/90, members of the bloc parties who had previously worked together with the political leadership of the GDR turned coats and became ‘flawless democrats’. A significant portion of the new political establishment in East Germany had thus already been a part of

the old system. Ministers with such a bloc party background should therefore be more often confronted with rumours about collaboration with the *Stasi* or mired in other political scandals concerning their history within the GDR. Thus we assume:

H14: *Ministers that had been members of a bloc party should have a higher hazard for turnover.*

Another specific of the East German political landscape after the reunification was the systematic ‘import’ of politicians from the western part of Germany. Those so called *development helpers* (*Aufbauhelfer*) were nevertheless only needed for the first years when there was a lack of sufficiently qualified and politically untainted personnel:

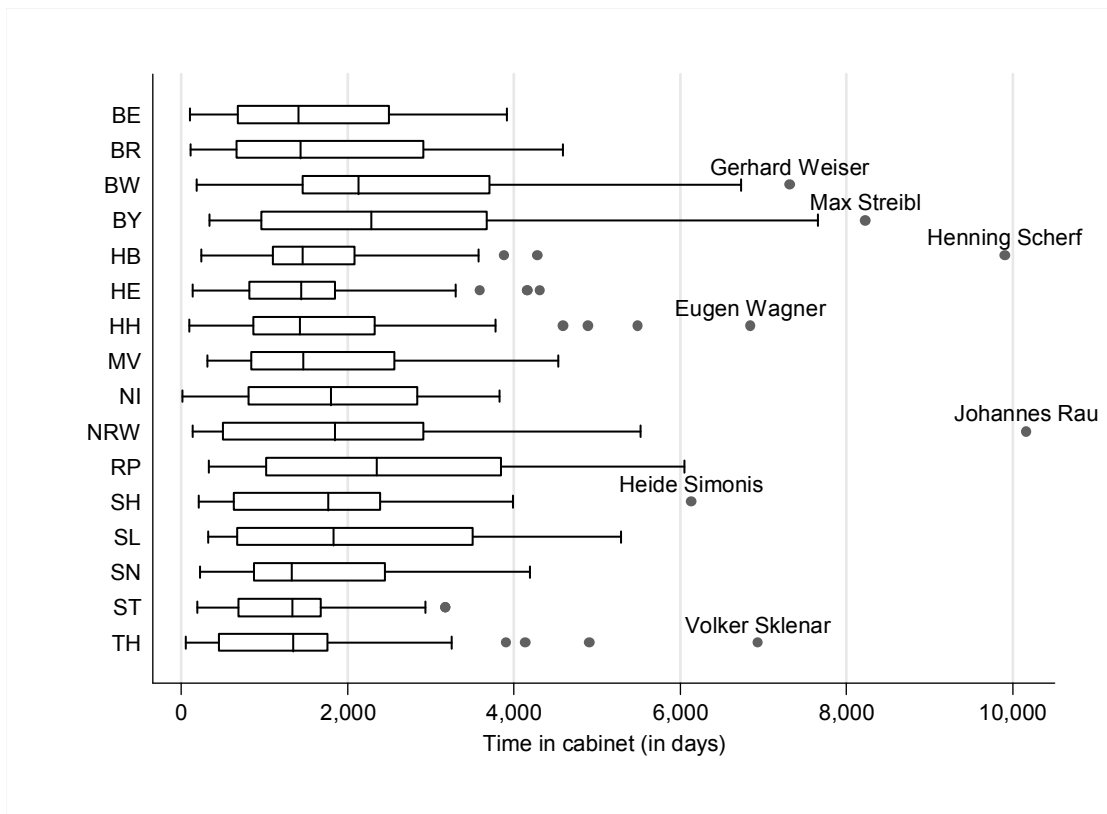
H15: *Ministers who were imported from West Germany as ‘development helpers’ should have a higher hazard for leaving the cabinet.*

STATISTICAL ANALYSIS

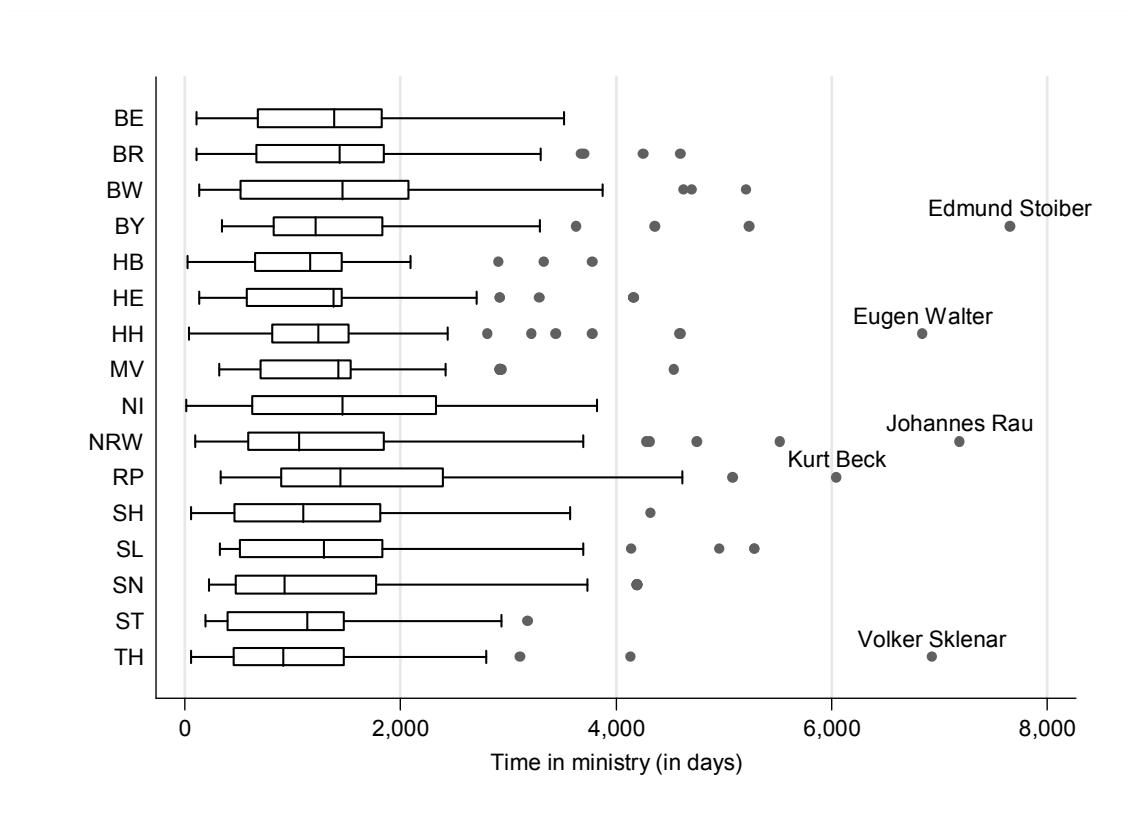
Descriptive analysis

Before starting to test the above proposed hypotheses a short and more descriptive analysis is useful. The boxplots in graph 1 and 2 give a first impression of the durations in cabinet and in specific ministries respectively. The first graph shows that there is a serious variation within and between the 16 Bundesländer. The median duration for a minister staying in government is between 1331 days in Saxony and 2351 days in Rhineland-Palatinate. The skew is for most of the Länder slightly positive. Some ministerial spells have even lasted for more than 10 years. A couple of ministers clearly stand out: among them Johannes Rau, who was nearly 28 years without interruption member of the North Rhine-Westphalian government (more than 19 of them as prime minister), Max Streibl, who served as minister of ecology and later of finance in the Bavarian cabinet before becoming prime minister in 1988, Eugen Wagner nicknamed “*Beton-Eugen*” (*concrete Eugen*) who was senator for construction in Bremen for more than 18 years or Volker Sklenar, who had been the minister of agriculture in Thuringia for more than 19 years, and hence almost for the whole sample period, when he left office in 2009. Particularly prime ministers are among those outliers with the longest durations (Rau, Scherf, Streibl, Stoiber, Simonis, Beck) which can be seen as a strong hint for controlling on the prime minister status.

Graph 1: Durations of the ministers in government

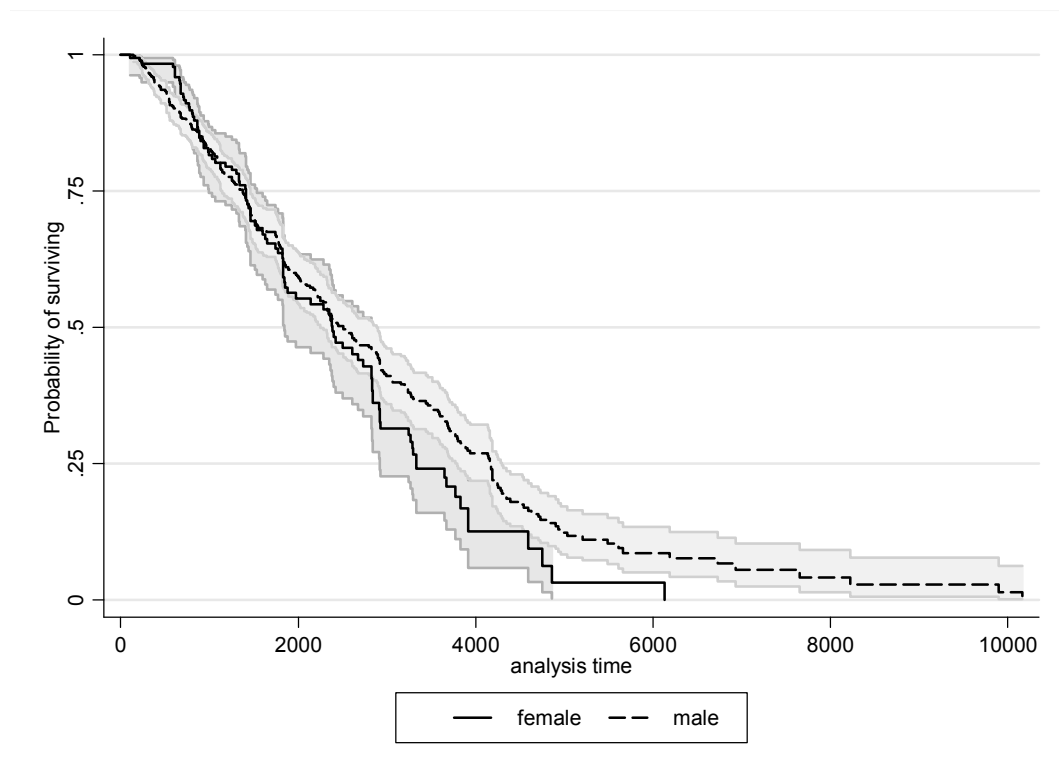


Graph 2: Durations of ministers in specific ministries



For the purpose of a simple comparison other graphical visualizations like the product limit estimator developed by Kaplan and Meier⁵² are convenient especially as they allow for comparison of the empirical survival functions of different sub groups.⁵³ Graph 3 shows the Kaplan-Meier survival functions for the durations in cabinet for male and female ministers: Looking at the two curves and taking into consideration their confidence intervals, we see that the probability of survival for female ministers decreases at approximately the same rate as the one of males until ca. 2000 days. For longer durations we see the female survival function decreasing more rapidly. Therefore particularly male ministers make it real to stay in cabinet for much over average durations. Nevertheless the overlapping confidence intervals indicate that sex does not play a big role in determining a minister's duration in cabinet.

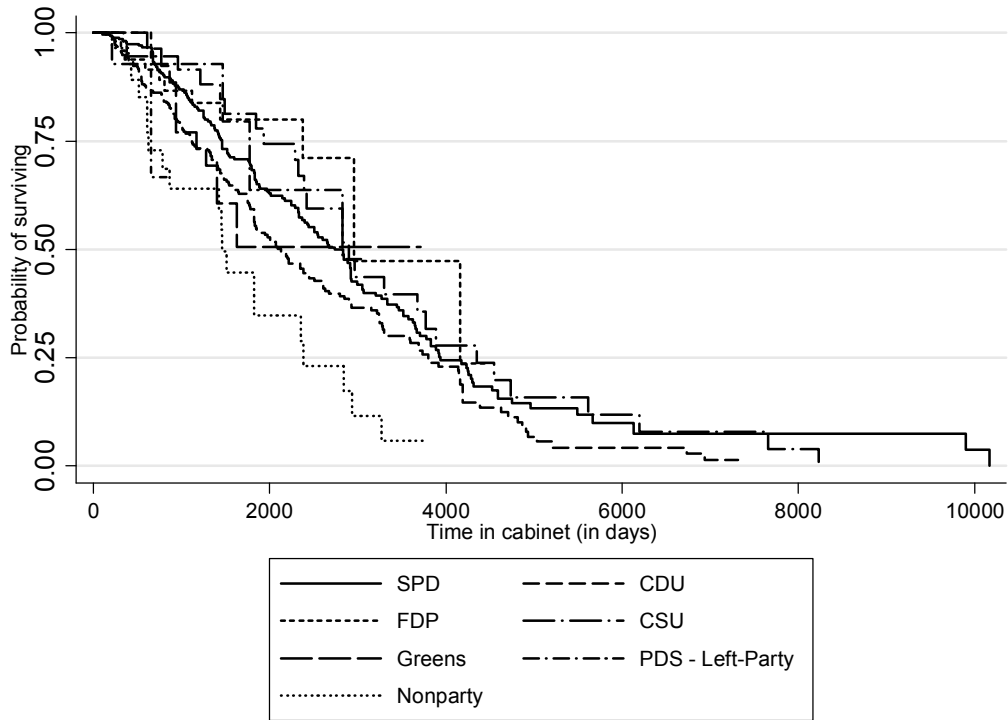
Graph 3: Kaplan-Meier estimates for duration in cabinet by sex (+ 95% confidence intervals)



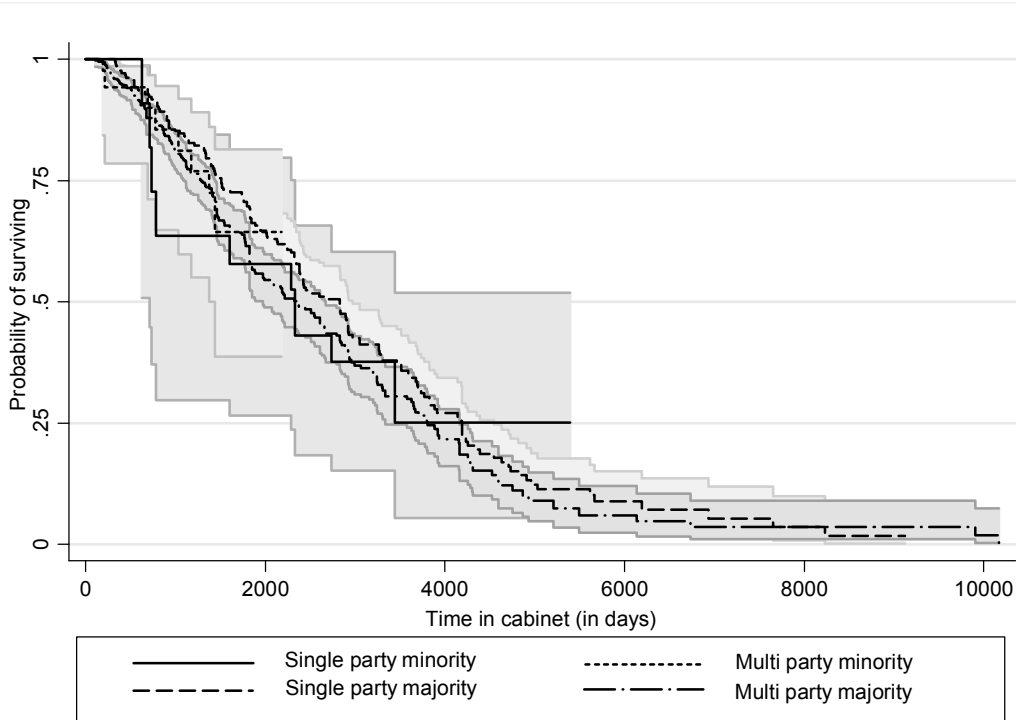
The two following Kaplan-Meier curves present minor differences for party membership (graph 4) with SPD members tending to survive longer than CDU ones and CSU and FDP members to survive longer than Green and PDS ones. The big steps in the functions of the small parties (FDP, Green, PDS/Linke, CSU) indicate nevertheless a large uncertainty for this assertion.⁵⁴ The only significant deviation can be observed for the non-party ministers whose survival function drops much faster than the one for party-members. In graph 5 the empirical survival functions are plotted for the types of

governments. Obviously the type of government does not impact on the duration of ministers in cabinet. In the annex the three Kaplan-Meier curves are additionally presented for the second dependent variable: duration in a specific ministry (graph A1-3).

Graph 4: Kaplan-Meier estimates by the minister's party



Graph 5: Kaplan-Meier estimates by type of government (+ 95% confidence intervals)



Multivariate Analysis

In table 3 the results of the Cox-models according to the first research topic, the total duration of a minister in cabinet are presented in form of hazard ratios. These antilogs of the partial likelihood coefficients are easier to interpret than the raw coefficients. A ratio of 1 indicates no influence of the independent variable on the hazard. Values greater than one show an increase in hazard, those lower than one indicate a decrease. For example, a hazard ratio of 1.5 means that an increase of the independent variable of one point raises the hazard for turnover under *ceteris paribus* conditions by 50 percent.⁵⁵ The first model tests the aggregate factors described in hypotheses H1-H4. All variables except the one indicating important ministries show a significant influence on the duration of ministerial spells. Ministers in *single party governments* have a lower hazard, while ministers in *minority governments* have to leave the cabinet faster than their colleagues in majority governments. This result is as expected whereas the positive effect of the *parliamentary strength* of the governing parties comes at first as a surprise. Taking a closer look to this effect, it can largely be attributed to grand coalitions which have a record of shorter ministerial durations in cabinet. The effect of the *ideological distance* variable is also unexpected: The bigger the policy distance between the two most distant governing parties, the lower is the hazard for leaving the cabinet.

The second model tests the hypotheses regarding the individual attributes. We see that *sex*⁵⁶, *having studied*, *PhD*, *Habilitation*, *party membership*, *career changer*, *the number of ministerial spells before* do not show significant effects. Since log-log-plots as well as the Grambsch-Therneau-test indicate non-proportional hazards for the variable *portfolios within spell*,⁵⁷ an interaction with survival time was included in the model to explicitly account for this fact.⁵⁸ In general a high number of portfolios decreases the hazard for turnover and this effect becomes stronger with time. This is what we expected in H13. The other variables do not show signs of non-proportionality. Significant effects can be detected for *prime ministers* and for the number of *portfolios* a minister holds during the spell. In line with the expectations prime ministers show a hazard rate that is about 40 percent lower than the rest of the cabinet.

The third model includes both the aggregate and individual factors, testing whether their combination reveals effects that were not visible when tested alone. The only relevant changes concern the aggregate variable *SPG*. Controlling for the individual factors it then displays the expected positive hazard ratio, which is in line with H1. The same at least tends to be true for ministers in coalition governments that come from the same party as the pm.

Table 3: Cox-models – dependent variable: duration in cabinet

	(1)	(2)	model (3)	(4)	(5)
sex		1.056 (0.126)	1.024 (0.146)		
regional rootedness		0.835* (0.0892)	0.914 (0.115)		0.807** (0.0833)
studied		0.994 (0.182)	1.067 (0.228)		
PhD		1.202 (0.139)	1.079 (0.145)		1.189 (0.131)
<i>Habilitation</i>		0.710 (0.149)	0.816 (0.208)		0.763 (0.159)
age (in years, time varying)		1.015* (0.00803)	1.016 (0.00999)	1.014 (0.00867)	
party membership (in years, time varying)		0.997 (0.00492)	1.000 (0.00584)		
career changer		0.907 (0.158)	0.779 (0.163)		
spells before		0.771 (0.198)	0.875 (0.283)		
portfolios within spell		0.131*** (0.0224)	0.107*** (0.0224)	0.106*** (0.0220)	0.122*** (0.0211)
portfolios x survival time		1.000*** (5.22e-05)	1.000*** (6.19e-05)	1.000*** (6.09e-05)	1.000*** (5.25e-05)
prime minister		0.677* (0.147)	0.584* (0.164)	0.570** (0.150)	0.667* (0.143)
coalition & same party as pm		1.208* (0.126)	1.346 (0.261)	1.321 (0.247)	1.638*** (0.240)
single party government	0.585** (0.146)		1.614 (0.524)	1.730*** (0.326)	1.621*** (0.245)
minority government	1.658 (0.519)		1.177 (0.381)		
parliamentary strength of governing parties	1.019*** (0.00727)		1.017** (0.00720)	1.016** (0.00690)	
ideological distance between coalition parties	0.969** (0.0137)		0.996 (0.0161)		
important ministry	0.988 (0.114)		1.019 (0.129)		
Observations	1,038,204	1,396,867	1,038,204	1,038,204	1,396,867
N_sub	535	751	535	535	751
N_fail	308	411	308	308	411
ll	-1540	-1957	-1358	-1360	-1954
chi2	14.74	465.2	379.0	375.4	471.7

Cox proportional hazard model with censoring (termination because of death, ill health & old age, elections and end of observation period). Hazard ratios with standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. Models 4 and 5 stepwise backward selection removing p >= 0.20.

The next step is to reduce the model to only those factors that show a significant influence on the hazard rates (model 4).⁵⁹ Seen as a whole, model 4 confirms the results from model 3 as well as amplifying some previously not so significant effects. The last model 5 checks whether the reduction of the dataset because of missing values for the ideological distance variable biases the results.

Compared to model 4 we find three differences: *parliamentary strength* is no more significant while *regional rootedness* and *coalition & same party as prime minister* become relevant.

For testing the goodness of fit of this model the estimated survival times should correspond with the real ones. Plotting Cox-Snell residuals against the empirical cumulative hazard derived from a Kaplan-Meier estimation should produce a line that comes close to a straight line with slope 1 if the model fits.⁶⁰ Problems with stata and time constraints prevented me from estimating this and further test statistics.

With the ideological distance variable being not available for all observations, it makes sense to check whether the other results are robust without including ideological distance and thus using the complete sample. Model 5

The results for the second research question regarding the duration of a minister within a specific ministerial position can be seen in table A1 in the annex. In general the results are quite similar to the duration in cabinet models and generally show a better level of significance.

Excursus East Germany

There are strong theoretical arguments for analyzing the east German Länder separately: a comparable socio-economic surrounding, a specific political culture, the common heritage of ‘bloc parties’, a large influence of the PDS – the former Socialist Unity Party of Germany (SED) – and the import of West German politicians as so called *development helpers*. Such an analysis (not presented here) reveals that ministers who had been members of a bloc party exhibit a hazard rate more than three times higher than of those who were not politically pre-burdened. However, this effect is not constant through time. The significant interaction less than one indicates that the effect of bloc party heritage decreases with survival time. This is due to the fact that those ministers that had to step down because of a political scandal connected with their GDR past in general had to leave office not very long after taking over official duties. Having survived the first year, the differences in the hazard ratios between ministers that were bloc party members and those without such a history vanish.

CONCLUSION

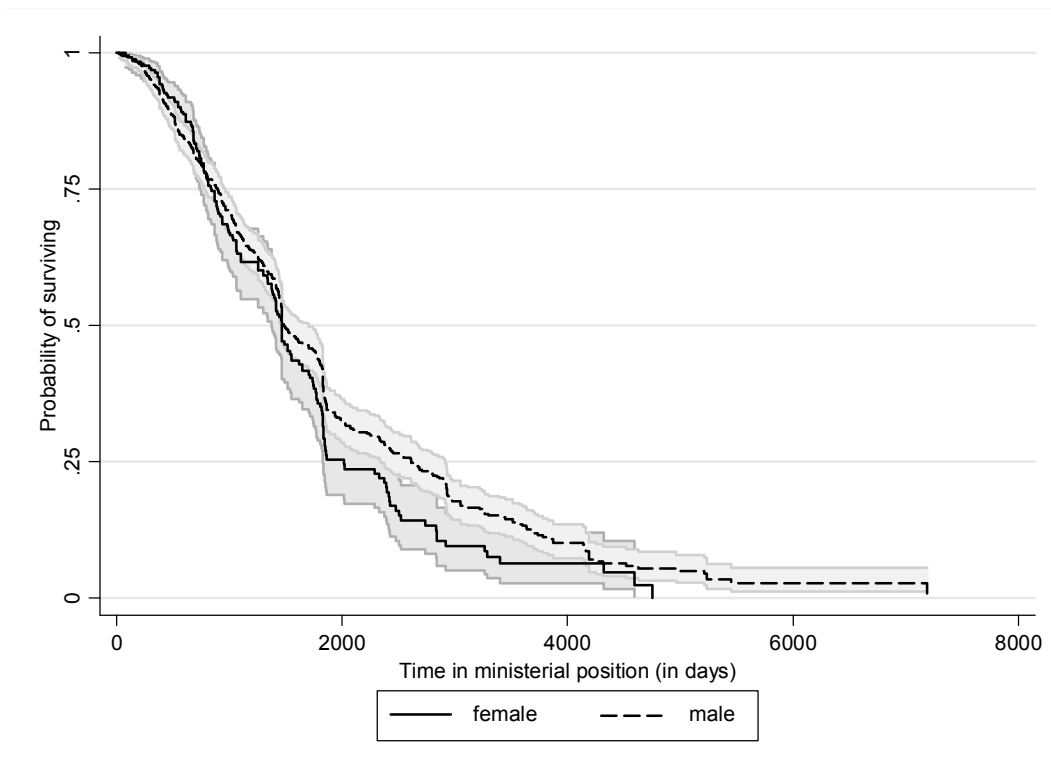
The paper has analysed factors which determine the duration of German Länder ministers in cabinet and in specific ministerial positions respectively. One of the main results is that aggregate parameters describing the political and institutional landscape do play a role as well as individual biographic factors. We find ministers serving in coalition governments to have higher hazards for turnover if

they are from the same party as the prime minister and the same is true for ministers in single party governments. The other aggregate variables tested – importance of the ministry, parliamentary strength and ideological distance of the government parties – also show effects, yet not the ones expected. A more thorough analysis seems to be necessary in this respect. For the individual factors we found surprisingly no effects for age in the models estimating duration in cabinet, but this could also be an artefact of the inclusion of the portfolio interaction with time. There are also no differences between male and female ministers and ones holding a PhD and those without. On the contrary, prime ministers *ceteris paribus* can be expected to have longer spells than ordinary ministers. Political and institutional experience is another factor in determining the probability for turnover. Those ministers that had been members of the government in an earlier spell and are therefore well versed in the *ministerial business* tend to have lower hazards. Furthermore the number of portfolios held during the respective tenure significantly increases a minister's time in cabinet. This effect grows with survival time. The specific East German political landscape is reflected in the results as well. Ministers that had been members of one of the bloc parties before reunification exhibit a higher hazard for turnover. This effect is time-dependent which means that it is particularly strong for short ministerial spells. West German politicians that were appointed as some kind of development helpers on the other hand show no significantly different hazard rates.

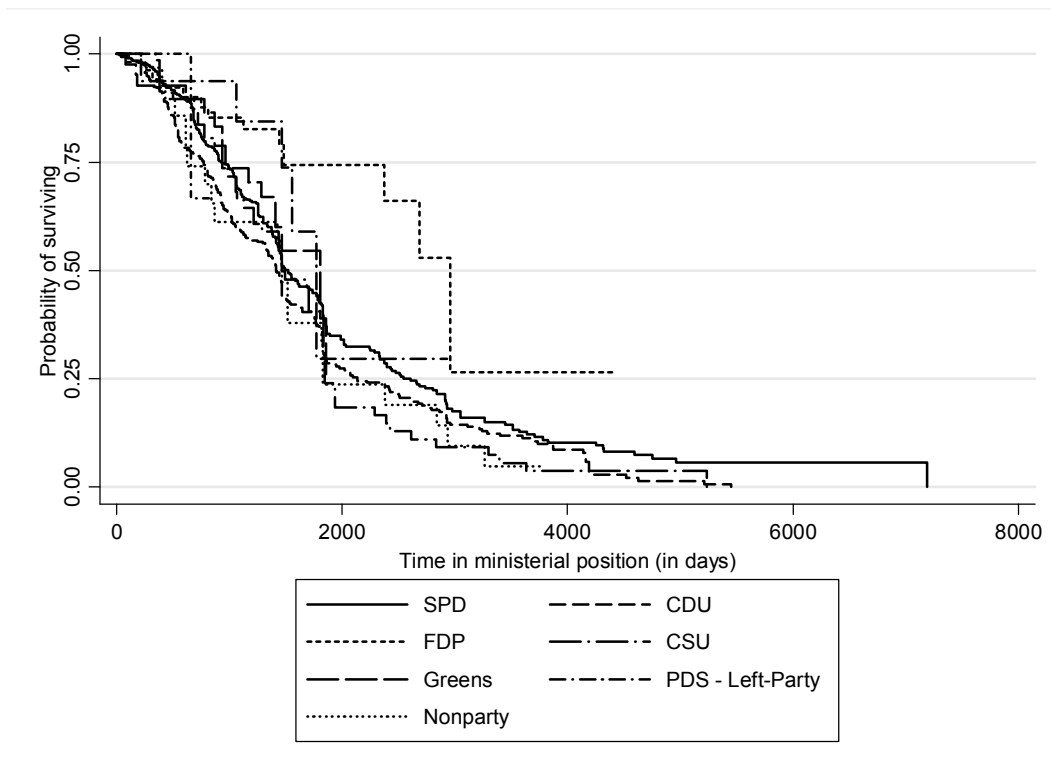
This analysis, using a newly compiled dataset, shed some light onto the patterns of ministerial turnover within the German Bundesländer and showed that particularly individual biographic attributes influence to a large extent the duration of a ministerial stretch. For a more complete picture however, analysing political career paths from a cross-Bundesländer as well as from a multi-level perspective incorporating also parliamentary and party experiences would enhance our understanding of the complex career patterns often exhibited by politicians today. A good example is one of the ministers also included in the analysed dataset: Thomas De Maizière started his political career in 1990 as a secretary of state in the ministry of cultural affairs in Mecklenburg-Vorpommern, moved on through ministerial positions in Saxony to the federal level where he was first chief of the German chancellery and later minister of the interior before being appointed minister of defence in 2011. This article can be seen as one brick in constructing a more thorough model for understanding the dynamics underlying such careers. Certainly further bricks also employing more qualitative research perspectives are necessary in order to strengthen this model, but with this analysis a start has been made.

Annex:

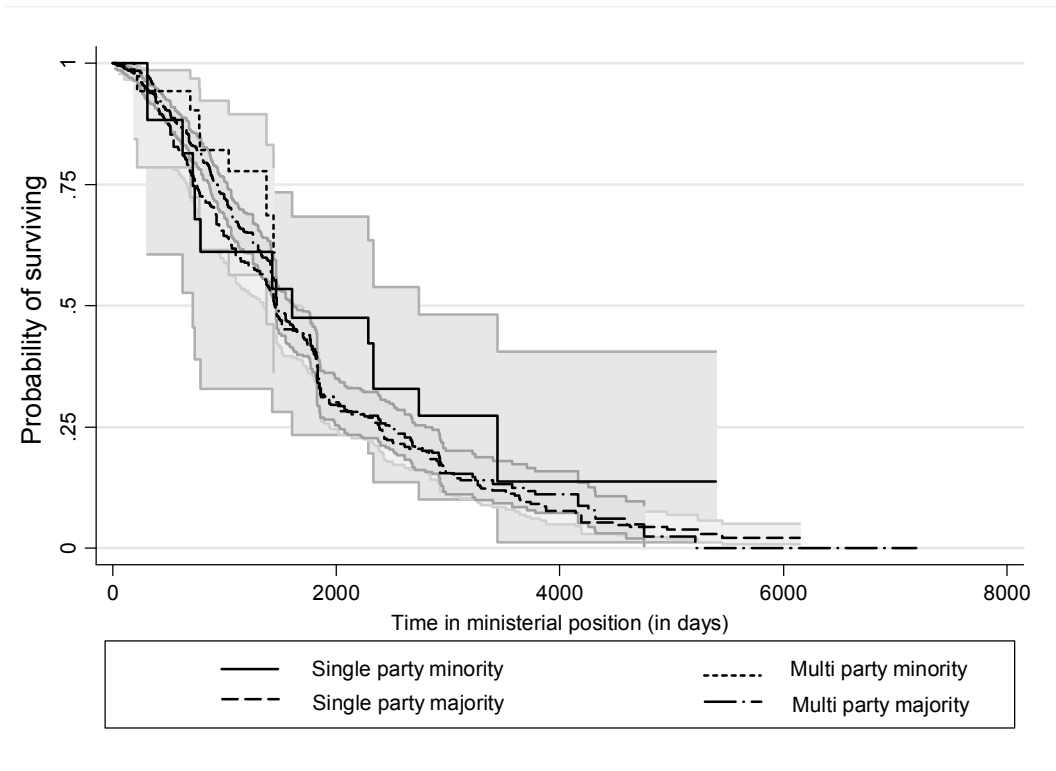
Graph A1: Kaplan-Meier estimates for time in ministerial position by sex (+95% confidence intervals)



Graph A2: Kaplan-Meier estimates for time in ministerial position by the minister's party



Graph A3: Kaplan-Meier estimates for time in ministerial position by type of government (+95% confidence intervals)



Graph A4: Histograms for the duration in cabinet by sex

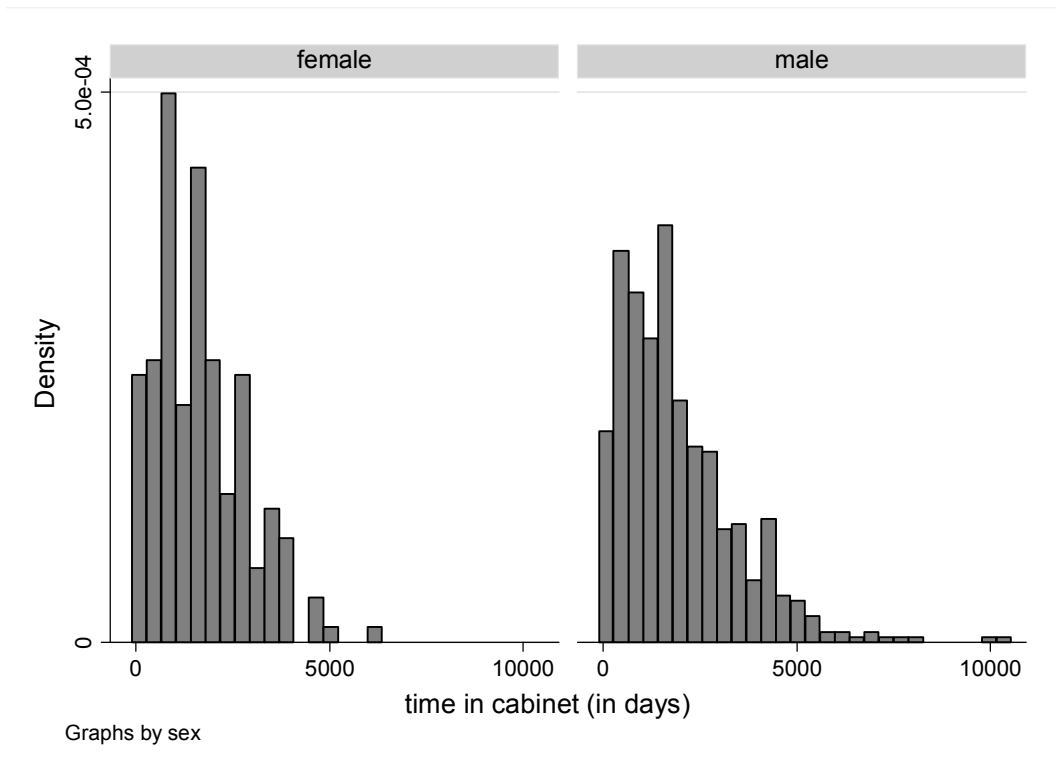


Table A1: Cox-models – dependent variable: duration in ministerial position

	(1)	(2)	model (3)	(4)	(5)
sex		0.938 (0.0878)	0.949 (0.103)		
regional rootedness		0.872* (0.0723)	0.931 (0.0896)		0.817** (0.0641)
studied		1.072 (0.147)	1.074 (0.169)		
PhD		1.163* (0.105)	1.093 (0.113)		
<i>Habilitation</i>		0.743* (0.130)	0.774 (0.165)		
age (in years, time varying)		0.984** (0.00638)	0.982** (0.00762)	0.982*** (0.00656)	0.982*** (0.00564)
party membership (in years, time varying)		1.000 (0.00414)	1.002 (0.00491)		
career changer		1.059 (0.155)	0.999 (0.178)		
spells before		0.859 (0.183)	0.911 (0.233)		
prime minister		0.447*** (0.0813)	0.383*** (0.0825)	0.366*** (0.0773)	0.398*** (0.0739)
coalition & same party as pm		1.153* (0.0928)	1.295 (0.206)	1.391** (0.192)	1.535*** (0.188)
single party government	0.736 (0.150)		0.865 (0.205)		1.530*** (0.195)
minority government	1.049 (0.279)		1.015 (0.273)		
parliamentary strength of governing parties	1.017*** (0.00577)		1.019*** (0.00590)	1.020*** (0.00557)	1.012*** (0.00460)
ideological distance between coalition parties	0.967*** (0.0113)		0.967*** (0.0116)	0.971*** (0.00745)	
important ministry	0.953 (0.0842)		0.846* (0.0789)	0.839* (0.0761)	0.893 (0.0709)
Observations	1,038,204	1,396,867	1,038,204	1,038,204	1,396,867
N_sub	714	1016	714	714	1016
N_fail	520	677	520	520	677
ll	-2708	-3684	-2687	-2689	-3678
chi2	19.86	51.45	62.03	57.93	62.57

Cox proportional hazard model with censoring (termination because of death, ill health & old age, elections and end of observation period). Hazard ratios with standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. Models 4 and 5 stepwise backward selection removing p >= 0.20.

Notes:

¹ J. D. Huber and C. Martinez-Gallardo, 'Cabinet Instability and the Accumulation of Experience. The French Fourth and Fifth Republics in Comparative Perspective', *British Journal of Political Science* 34/1 (2004), pp.27-40; J. D. Huber and C. Martinez-Gallardo, 'Replacing Cabinet Ministers: Patterns of Ministerial Stability in Parliamentary Democracies', *American Political Science Review* 102/2 (2008), pp.169-180.

² Biographic encyclopedias, like the ones published by U. Kempf and H.G. Merz, *Kanzler und Minister 1998-2005* (Wiesbaden: VS Verlag für Sozialwissenschaften, 2008) for the German chancellors and federal ministers or those on prime ministers of the Länder (see F. Baer, *Die Ministerpräsidenten Bayerns* (München: Beck, 1971); S. Gösmann, *Unsere Ministerpräsidenten in Nordrhein-Westfalen* (Düsseldorf: Droste, 2008), provide a vast amount of information on individual career paths but are only ill-suited for conducting systematic large-N comparisons..

³ J. M. Box-Steffensmeier and B. S. Jones, *Event History Modeling* (Cambridge: Cambridge University Press, 2004); J. M. Box-Steffensmeier and A. E. Sokhey, 'Event History Methods' in K. T. Leicht and J. C. Jenkins (eds.), *Handbook of Politics. State and Society in Global Perspective* (New York: Springer, 2009), pp.605-618; D. R. Cox, 'Regression Models and Life-Tables', *Journal of the Royal Statistical Society. Series B (Methodological)* 34/2 (1972), pp.187-220.

⁴ S. Jäckle, 'Determinanten der Regierungsbeständigkeit. Eine Event-History-Analyse von 40 Parlamentarischen Demokratien', *Zeitschrift für Vergleichende Politikwissenschaft* 3/1 (2009), pp.6-32; S. Jäckle, *Determinanten der Regierungsbeständigkeit in parlamentarischen Systemen*. (Berlin u.a.: LIT, 2011); G. King, J. E. Alt, N. E. Burns and M. Laver, 'A Unified Model of Cabinet Dissolution in Parliamentary Democracies', *American Journal of Political Science* 34/3 (1990), pp.846-871; T. Saalfeld, 'Institutions, Chance, and Choices. The Dynamics of Cabinet Survival', in K. Strom, W. C. Müller and T. Bergman (eds.), *Cabinets and Coalition Bargaining. The Democratic Life Cycle in Western Europe* (Oxford: Oxford University Press, 2008), pp.327-368;

P. V. Warwick, *Government Survival in Parliamentary Democracies* (Cambridge: Cambridge University Press, 1994); P. V. Warwick, *Policy Horizons and Parliamentary Government* (Basingstoke: Palgrave Macmillan, 2006).

⁵ T. Dewan and K. Dowding, 'The Corrective Effect of Ministerial Resignations on Government Popularity', *American Journal of Political Science* 49/1 (2005), pp.46-56; I. H. Indridason and C. Kam, 'Cabinet Reshuffles and Ministerial Drift', *British Journal of Political Science* 38/4 (2008), pp.621-656.

⁶ For reasons of simplicity the *Ministerpräsidenten* of the five territorial Länder as well as the governing mayor (*Regierender Bürgermeister*) in Berlin are called prime ministers for the remainder of the paper.

⁷ S. Berlinski, T. Dewan and K. Dowding, 'The Impact of Individual and Collective Performance on Ministerial Tenure', *The Journal of Politics* 72/2 (2010), pp.559-571; P. Weller, 'Distangling Concepts of Ministerial Responsibility', *Australian Journal of Public Administration*, 58/1 (1999), pp.62-64; D. Woodhouse, 'Ministerial responsibility in the 1990s: when do ministers resign?', *Parliamentary Affairs* 46/3 (1993), pp.277-292.

⁸ D. Herzog, *Politische Karrieren - Selektion und Professionalisierung politischer Führungsgruppen* (Opladen: Westdt. Verlag, 1975).

⁹ A. K. Gruber, *Der Weg nach ganz oben - Karriereverläufe deutscher Spitzenpolitiker* (Wiesbaden: VS-Verlag, 2008).

¹⁰ H. Best, S. Jahr and L. Vogel, 'Karrieremuster und Karrierekalküle deutscher Parlamentarier', in M. Etinger and W. J. Patzelt (eds.), *Politik als Beruf* (Wiesbaden: VS-Verlag, 2011), pp.168-212; W. J. Patzelt, 'German MPs and their roles', *Journal of Legislative Studies* 3/1 (1997), pp.55-78.

¹¹ A.S. Ali, *Karrierewege und Rekrutierungsmuster bei Regierungsmitgliedern auf Bundesebene 1949-2002* (Halle-Wittenberg: Martin-Luther-Universität Halle-Wittenberg, 2003); J. Fischer and A. Kaiser, 'Hiring and firing ministers under informal constraints: Germany', in K. Dowding and P. Dumont (eds.), *The selection of ministers in Europe. Hiring and firing* (London: Routledge, 2009), pp.21-40; J. Fischer, A. Kaiser and I. Rohlfing, 'The Push and Pull of Ministerial Resignations in Germany, 1969-2005', *West European Politics* 29/4 (2006).

¹² J. Fischer and A. Kaiser, 'Linkages between parliamentary and ministerial careers in Germany, 1949-2008. The Bundestag as recruitment pool', *German Politics* 18/2 (2009), pp.140-154; J. Fischer and A. Kaiser, 'Der Bundestag: Sprungbrett oder Auffangbecken? Ministerkarrieren zwischen Parlament und Exekutive', *Zeitschrift für Parlamentsfragen* 41/1 (2010), pp.36-41. Works on party careers form another perspective for research on political elites.

¹³ J. Fischer and A. Kaiser, 'Wie gewonnen, so zerronnen? Selektions- und Deselektionsmechanismen in den Karrieren deutscher Bundesminister', in M. Edinger and W. Patzelt (eds.), *Politik als Beruf (Politische Vierteljahresschrift Sonderheft 44* (Wiesbaden: VS-Verlag, 2011), pp.192-212.

¹⁴ L. Vogel, *Der Weg ins Kabinett - Karrieren von Ministern in Deutschland* (Frankfurt: Peter Lang, Vol. 576, 2009).

¹⁵ Only full ministers are counted, state secretaries without a vote in the cabinet are not included in the analysis.

¹⁶ This research focus is different from existing studies like for example a study by Indridason and Kam on the prime ministers ability to cope with ministerial drift: 'Cabinet Reshuffles and Ministerial Drift', p.639f. In that work all reshuffles – transfers (a minister moving from one portfolio to another), redefinitions of a minister's portfolio, promotions of new cabinet members as well as demotions – are defining elements for their cases. In contrast the first research question of this study focuses on ministers completely leaving the cabinet and transfers as well as redefinitions will only be included as independent variables in terms of the number of changes a minister personally had to face during her time in office.

¹⁷ I. Budge, 'Party Factions and Government Reshuffles: a General Hypothesis Tested Against Data From 20 Post-War Democracies', *European Journal of Political Research* 13/3 (1985), pp.327-333.

¹⁸ Fischer, Kaiser and Rohlfing, 'The Push and Pull of Ministerial Resignations in Germany, 1969-2005', p.712.

¹⁹ K. Dowding and W.-T. Kang, 'Ministerial Resignations 1945-97', *Public Administration* 76/3 (1998), pp.411-429.

²⁰ See I. Budge and H. Keman, *Parties and Democracy. Coalition Formation and Government Functioning in Twenty States* (Oxford: Oxford University Press, 1990), p.178; Jäckle, *Determinanten der Regierungsbständigkeit in parlamentarischen Systemen*.

²¹ For example the former senator of finance in Berlin, Thilo Sarrazin, left office in 2009 when he was appointed as member of the executive board of the *Deutsche Bundesbank* – a position he had to give up just the following year in the wake of a scandal regarding his positions on immigration. Burkhard Dreher, minister of economy in Brandenburg from 1994 to 1999 left government to become CEO at the VEW, then a large utility company, and is an example of a minister moving into private business.

²² This category subsumes all types of scandals. The large majority are nevertheless either of financial or political nature. Sex scandals which, according to Dowding and Kang, 'Ministerial Resignations 1945-97', p.419-425, make up a considerable portion of British ministerial resignations particularly for conservative politicians, are apparently not a big issue in the German Länder.

²³ See J. F. Lawless, *Statistical Models and Methods for Lifetime Data* (New York: Wiley, 1982), p.8.

- ²⁴ C. Cioffi-Revilla, 'The Political Reliability of Italian Governments. An Exponential Survival Model', *The American Political Science Review* 78/2 (1984), pp.318-337; King, Alt, Burns and Laver, 'A Unified Model of Cabinet Dissolution in Parliamentary Democracies'.
- ²⁵ H.-P. Blossfeld, K. Golsch and G. Rohwer, *Event History Analysis with Stata* (Mahwah: Lawrence Erlbaum Associates, 2007), p.184; J. K. Vermunt, *Log-Linear Models for Event Histories* (Thousand Oaks: Sage, 1997), p.189.
- ²⁶ Jäckle, *Determinanten der Regierungsbeständigkeit in parlamentarischen Systemen*; Saalfeld, 'Institutions, Chance, and Choices. The Dynamics of Cabinet Survival'; Warwick, *Government Survival in Parliamentary Democracies*.
- ²⁷ K. Yamaguchi, *Event History Analysis* (Newbury Park: Sage Publications, 1991), p.101f.
- ²⁸ H.-P. Blossfeld, K. Golsch and G. Rohwer, *Event History Analysis with Stata*, p.223; P. M. Grambsch and T. M. Therneau, 'Proportional Hazards Tests and Diagnostics Based on Weighted Residuals', *Biometrika* 81/3 (1994), pp.515-526.
- ²⁹ D. R. Cox, 'Partial Likelihood', *Biometrika* 62/2 (1975), pp.269-276.
- ³⁰ For most studies this loss of information, compared to fully parameterized models, does not pose a relevant problem, as the differences between the exact survival times and the ordering of these durations vanish with growing sample size.
- ³¹ E. Damgaard, 'Cabinet Termination', in K. Strom, W. C. Müller and T. Bergman (eds.), *Cabinets and Coalition Bargaining. The Democratic Life Cycle in Western Europe* (Oxford: Oxford University Press, 2008), p.303.
- ³² S. Berlinski, T. Dewan and K. Dowding, 'The Length of Ministerial Tenure in the United Kingdom, 1945-97', *British Journal of Political Science* 37/2 (2007), pp.245-262; Huber and Martinez-Gallardo, 'Replacing Cabinet Ministers: Patterns of Ministerial Stability in Parliamentary Democracies', pp.169-180; Indridason and Kam, 'Cabinet Reshuffles and Ministerial Drift'; M. Laver, 'Government Termination', *Annual Review of Political Science* 6/1 (2003), pp.23-40; Warwick, *Government Survival in Parliamentary Democracies*.
- ³³ L. C. Dodd, 'Party Coalitions in Multiparty Parliaments. A Game-Theoretic Analysis', *The American Political Science Review* 68/3 (1974), pp.1093-1117; Warwick, *Government Survival in Parliamentary Democracies*.
- ³⁴ Jäckle, *Determinanten der Regierungsbeständigkeit in parlamentarischen Systemen*, p.111; M. A. Kayser, 'Who Surfs, Who Manipulates? The Determinants of Opportunistic Election Timing and Electorally Motivated Economic Intervention', *American Political Science Review* 99/1 (2005), p.17; K. Strom and S. Swindle, 'Strategic Parliamentary Dissolution', *American Political Science Review* 96/3 (2002), pp.585-589.
- ³⁵ Indridason and Kam, 'Cabinet Reshuffles and Ministerial Drift'.
- ³⁶ J. Fischer, A. Kaiser and I. Rohlfing, 'The Push and Pull of Ministerial Resignations in Germany, 1969-2005', p.730, have shown that, at least for German federal ministers, the role of the Federal Chancellor is often decisive for the minister's fate when the opposition or the media confront cabinet ministers with demands for resignation.
- ³⁷ See Budge, 'Party Factions and Government Reshuffles: a General Hypothesis Tested against Data from 20 Post-war Democracies'.
- ³⁸ Berlinski, Dewan and Dowding, 'The Length of Ministerial Tenure in the United Kingdom, 1945-97', p.256f.
- ³⁹ See Warwick, *Government Survival in Parliamentary Democracies*; Warwick, *Policy Horizons and Parliamentary Government*.
- ⁴⁰ The data are from M. Debus, 'Parteienwettbewerb und Koalitionsbildung in den deutschen Bundesländern zwischen 1994 und 2006', in U. Jun, O. Niedermayer and M. Haas (eds.), *Parteien und Parteiensysteme in*

den deutschen Bundesländern (Wiesbaden: VS-Verlag, 2008), pp. 57-78. To gain salience-values and policy positions Debus applied the wordscore-technique on electoral programs. His period of investigation covers 1994 to 2006. As a consequence it was only possible to determine the policy distance for about half of the cases in this study.

⁴¹ The empirical values of the ideological distances range from ca. 900 to 3400. To account for ideological differences of factions within single party governments the ideological distance value was set for all SPG to 300.

⁴² The classification of ministries follows F. U. Pappi, R. Schmitt and E. Linhart, 'Die Ministeriumsverteilung in den deutschen Landesregierungen seit dem Zweiten Weltkrieg', *Zeitschrift für Parlamentsfragen* 39/2 (2008), pp.323-342.

⁴³ Berlinski, Dewan and Dowding, 'The Length of Ministerial Tenure in the United Kingdom, 1945-97', p.258.

⁴⁴ See Jäckle, *Determinanten der Regierungsbeständigkeit in parlamentarischen Systemen*, p.253-256.

⁴⁵ Berlinski, Dewan and Dowding, 'The Length of Ministerial Tenure in the United Kingdom, 1945-97', pp.254-256.

⁴⁶ Distinguishing between ministers without tertiary education and those holding a university degree does not produce meaningful variance. Only three ministers in the whole sample did not attend university.

⁴⁷ Party membership, included into the Cox-model as a time-varying covariate is measured in days but standardized on years for better interpretable coefficients.

⁴⁸ According to the constitutions of the Länder, a vote of no confidence is possible in all Bundesländer except Bavaria, where the prime minister has to step back when the political conditions preclude a trustful collaboration with the parliament. Instead a motion of confidence is only anchored in the constitutions of Brandenburg, Hesse, Hamburg, Mecklenburg-Vorpommern, Saarland, Saxony-Anhalt, Schleswig-Holstein and Thuringia.

⁴⁹ This argument resonates with a study which claims that the talent pool of potential ministers is not infinite (See T. Dewan and D. P. Myatt, 'The Declining Talent Pool of Government', *American Journal of Political Science* 54/2 (2010), pp.267-286.) Therefore, from the perspective of a prime minister who wishes to work with the most talented personnel, recourse to ministers that have already proven their qualities in earlier governments is often logically sound.

⁵⁰ It is likely that for this reason the proportionality assumption is not justified for this variable and therefore must certainly be tested.

⁵¹ CDU-East and the Democratic Farmers party of Germany (DBD) became part of the West CDU, while the Liberal Democratic Party of Germany (LDPD) and the National Democratic Party of Germany (NDPD) merged into the FDP. There was no SPD bloc-party, because the social democrats had in 1950 been forced to merge with the communist party (KPD) into the ruling SED. The lack of an organizational structure to build on as provided by the bloc parties for CDU and FDP was one of the most serious difficulties the Social Democrats had to face after 1990 in the new Länder.

⁵² See E. L. Kaplan and P. Meier, 'Nonparametric Estimation from Incomplete Observations', *Journal of the American Statistical Association* 53/282 (1958), pp.457-481.

⁵³ See J. D. Kalbfleisch and R. L. Prentice, *The Statistical Analysis of Failure Time Data* (New York: Wiley, 1980), pp.10-16. The life table method, with roots in demographic research, is another non-parametric event history technique that could be applied here. This approach nevertheless has its problems working with right-censored data (See R. C. Elandt-Johnson and N. L. Johnson, *Survival Models and Data Analysis* (New York: Wiley, 1980), pp.83-93; Lawless, *Statistical Models and Methods for Lifetime Data*, pp.53-68).

⁵⁴ The steps originate from the fact that the Kaplan-Meier estimator for the probability of survival can only be calculated at those points in time when an event has taken place. Therefore with few events, the steps, as well

as the uncertainty of the estimation, grow. The confidence intervals that, for the sake of clarity, were not presented in graph A2 would thus overlap widely especially for the small parties.

⁵⁵ For an overview of the interpretation of Cox-model results see J. M. Box-Steffensmeier and B. S. Jones, 'Time Is of the Essence. Event History Models in Political Science', *American Journal of Political Science* 41/4 (1997), p.1450.

⁵⁶ Our expectation to find two groups of women, one with a comparatively long duration and the other, the majority, with short spells, can at best be partially approved. The differences between the histograms for male and female ministers are not big enough (see graph A4 in the annex).

⁵⁷ See P. M. Grambsch and T. M. Therneau, 'Proportional Hazards Tests and Diagnostics Based on Weighted Residuals'; T. M. Therneau and P. M. Grambsch, *Modeling Survival Data. Extending the Cox Model* (New York: Springer, 2000), p.127.

⁵⁸ See Box-Steffensmeier and Jones, *Event History Modeling*, p.136f. The estimation of stratified models which some textbooks present as a possibility to cope with non-proportional hazards has a number of drawbacks (see Therneau & Grambsch, *Modeling Survival Data. Extending the Cox Model*, p.145) and is therefore not applied in this analysis. For finding the appropriate form of the time dependence plots of scaled Schoenfeld residuals against different functional forms of time (identity, $\log(t)$, t^2) were inspected (see Box-Steffensmeier and Jones, p.120f). Since the identity plots showed the best results and also make the most sense from a conceptual point of view by making the interactions more easily interpretable, the identity interactions were used in the models.

⁵⁹ For means of robustness I used different selection procedures (backward, forward, backward stepwise, forward stepwise). They all led to the same final model.

⁶⁰ See D. R. Cox and D. Oakes, *Analysis of Survival Data* (London: Chapman & Hall, 1984), pp.107-109; D. R. Cox and E. J. Snell, 'A General Definition of Residuals', *Journal of the Royal Statistical Society. Series B (Methodological)*, 30/2 (1968), pp.248-275; J. P. Klein and M. L. Moeschberger, *Survival Analysis. Techniques for Censored and Truncated Data, 2.ed.* (New York: Springer, 2003), p.329. Another goodness of fit measure proposed in F. E. Harrell, Jr, R.M. Califf, D. B. Pryor, K. L. Lee and R. A. Rosati, 'Evaluating the Yield of Medical Tests', *Journal of the American Medical Association* 247/18 (1982), pp.2543-2546, cannot be used here as it is not applicable to Cox-models including time-varying data.