# The Politics of Structural Reform: 

Why Agencies Are Transformed and Put to Death


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## Abstract

The Norwegian bureaucracy is subjected to structural changes on a regular basis. The frequency at which this occurs begs the question: Why does it happen? In the literature, termination (organizational death) has been devoted more attention than other organizational changes. However, such studies have thus far only been carried out in majoritarian systems, and are not immediately transferable to consensus democracies like Norway. This thesis represents an exploratory attempt at adapting theories of termination to a Norwegian context.

By running a series of discrete survival regressions on 142 Norwegian agencies between 1980 and 2014 (based on a unique and constructed dataset), I find that agencies are at much higher risk of being terminated after a change in government. While this finding suggests that political executives have considerable influence over government structure, another finding indicates that there are limits to their power. For example, large, geographically dispersed and young agencies seem to at lower risk of being terminated. I find no evidence that fiscal pressure or the attributes of the government matters.

Since termination is a disputed concept, I also empirically examine whether terminations are conceptually different from reorganizations. I develop an alternative hypothesis, which argues that they can be merged and referred to collectively as "structural reforms." By running the same regressions with reorganizations as a dependent variable, I find that there should be a clear distinction between terminations and reorganizations. First, very few effects are found. Second, large and geographically dispersed agencies are at higher risk of being reorganized, an empirical pattern that is contrary to what termination theory expects. Thus, the viability of structural reform as a fruitful theoretical concept is debunked.

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## Chapter 1

## Introduction


#### Abstract

In reality, bureaus are among the most important institutions in every part of the world. Not only do they provide employment for a very significant fraction of the world's population; but they also make critical decisions that shape the economic, educational, political, social, moral, and even religious lives of nearly everyone on earth... Yet the role of bureaus in both economic and political theory is hardly commensurate with their true importance.


— Anthony Downs (1967)

In 1987, the Brundtland government released a pamphlet entitled The New State. While policy brochures rarely contain eyebrow-raising elements, the sketch on its cover is worthy of note. It cartoonishly portrays a crowd of angry citizens in pursuit of a terrified lion. The crowd carries a long needle, with the pointy end aimed toward the lion's back. The sketch is clearly meant to serve as an allegory for government renewal. The decadent, giant lion of Norway's national coat of arms - representing inefficient and outdated government - is brought to heel by vigilant taxpayers, who are essentially exclaiming: "Change, or else!"

While the topic of government structure and reform cannot exactly be said to provoke Norwegian taxpayers into a revolutionary mood, it is nevertheless a political issue. In fact, the publication of the pamphlet referenced above roughly coincides with the emergence of administrative policy as a distinguishable, high-profile policy area in Norway (Grønlie \& Flo, 2009, pp. 69-70). In the preceding decades, such matters had been discussed almost exclusively by key players behind closed doors. By the time the pamphlet was released, however, administrative policy was very much a public affair, subject to both public opinion and comprehensive reform
programs. Had government become bloated, and in need of trimming? Was yesterday's government structure adequate to tackle tomorrow's issues? These questions were asked for the first time in this period, and they still are to this very day.

With the 1980s marking a starting point, this thesis will attempt to explain why the organizational structure of government is sometimes subjected to radical change. I will try to determine whether the timing of organizational changes is connected to political events, such as a change in government or minister, and whether it matters that the government is a coalition or not. Furthermore, it will examine the importance of organizational characteristics. For example, are large, remote and old organizations less prone to change? Finally, it will try to answer a question that looms in the background of the literature on organizational termination (Hajnal, 2012; Kuipers, Yesilkagit \& Carroll, 2017): Are terminations conceptually different from other organizational changes, or are they driven by, and explained by, the exact same variables?

Specifically, the study object will be the governmental agencies of Norway's central administration. ${ }^{1}$ I have chosen to study agencies because they are a very important component of the Norwegian bureaucracy, and tasked with regulation and the day-to-day implementation of policy (Verhoest, Roness, Verschuere, Rubecksen \& MacCarthaigh, 2010). They are thus expected to be somewhat insulated from the ebb and flow of politics. If politics can be shown to have an influence on agencies, there is a chance that it might apply to more inherently political units such as ministries. Moreover, agencies have been thoroughly studied in the organizational termination literature. As such, there is a solid theoretical foundation to draw insights from (Adam, Bauer, Knill \& Studinger, 2007).

The main dependent variable of this thesis, structural reform, is not really rooted in theory. It can best be described as a hybrid concept of convenience. On one hand, this thesis recognizes that termination has thus far been established as a theoretical concept which is separate from other organizational changes. For this reason, the theoretical framework of this thesis will build upon the contributions of termination studies, and maintain that termination is a dependent variable that is of high interest.

On the other hand, termination is a fuzzy and challenged concept (Hajnal, 2012; Kuipers et al., 2017; Peters \& Hogwood, 1988). It has not been fully established

[^0](empirically speaking) whether it truly should be seen as separate from other organizational changes, in terms of which variables can explain it. In order to test if termination should remain a separate concept, I run two sets of statistical models with different dependent variables; one with terminations, and another with reorganizations. If terminations and reorganizations are to be merged (into a single concept), it is necessary to relabel the dependent variable as structural reform - a concept that is largely born out of semantic, and not theoretical considerations. ${ }^{2}$

The research question thus becomes: What are the determinants of structural reform and its composites, reorganization and termination?

Before commencing, some disclaimers must be made. This thesis represents the first attempt at explaining terminations and reorganizations of agencies in Norway or any other Scandinavian country by using statistical methods. Moreover, this is the first time agency mortality has been studied in a parliamentary consensus democracy. For this reason, substantial amounts of the following work is highly exploratory. The effect of coalition and minority governments on the likelihood of termination, for example, has never been included in any theory-building on the subject. Most studies within this field have been carried out in majoritarian political systems such as the UK and the United States, where such attributes are either absent or rare (James, Petrovsky, Moseley \& Boyne, 2016; Lewis, 2002).

It should also be noted that the methods and data utilized here do not account for the importance of variables that are external to Norway, such as policy diffusion and international trends like New Public Management. This is an inherent weakness of the chosen research design, but not one that can reasonably be counteracted. In any case, the research topic of this thesis is neither preoccupied nor incompatible with such external influences. The initial origin of change could very well stem from somewhere outside of Norwegian borders. However, this thesis asks a different question: When is the ideal time to enact change, and which organizations are most likely to be subjected to it?

### 1.1 Findings

The empirical results of this thesis suggest that political executives have a large degree of influence over Norwegian agency structure, and that termination is a tool which is often employed for political reasons. For example, a change in government

[^1]increases the risk of termination drastically. However, that is not to say that any agency can be terminated at any time. Agency-specific characteristics seem to be factored into the decision of whether to terminate or not. In particular, large and geographically dispersed agencies have a significantly reduced chance of being terminated. Moreover, young agencies are at lower risk of terminations than their older counterparts.

The results for reorganizations are less clear. In fact, some findings directly contradict the hypotheses, which indicates that termination theory cannot be applied to reorganizations. The underlying mechanisms appear to be dissimilar, invalidating structural reform as a viable theoretical concept. For example, large and geographically dispersed agencies have a higher risk of being reorganized than small and non-dispersed agencies. Whereas large organizations are resistant to terminations, they are more vulnerable to reorganizations.

### 1.2 Outline

This thesis is structured in a quite straightforward manner. The remainder of this chapter lays the foundation for the rest of the thesis. I discuss why studying structural reform is important, before clarifying definitions and providing some background information on Norwegian agencies and the Norwegian reform context. Chapter 2 delves into the theoretical foundation, which is primarily based on insights from the termination literature. Chapter 3 outlines the research design. It begins with a brief explanation of event history analysis and discrete survival models, before moving on to a description of the data structure and the operationalizations. Chapter 4 presents the empirical results. I first introduce descriptive statistics, before discussing the regression results. Chapter 5 contains concluding remarks.

### 1.3 Why study structural reform?

Understanding the drivers of structural reform is important for a number of reasons. First, organizational changes are usually - or at least often - accompanied by policy change (Hult, 1987; Lewis, 2004, p. 137). Structural reforms might thus be a highly valuable proxy that can enable us to uncover deeper insights about the ebb and flow of the policy process, the inherent mechanics of our political system,
and the windows during which enacting change is feasible.
Second, it is by far the most visible and frequent aspect of public sector reform (Van de Walle, 2016, p. 131). Having the advantage of being easily traceable and highly frequent, structural reforms are very suitable for empirical analysis. In addition, the prevalence of organizational changes in recent decades indicate that this is a highly popular measure among political executives. Identifying the circumstances in which such popular tools are used, can give us a deeper understanding of how and why executives make their decisions. In addition, we might perhaps be lead to understand the extent to which decision-makers utilize organizational changes to influence and change policy outcomes.

Third, some researchers argue that organizational structure impacts the performance of government, for better or worse (Egeberg, 2003; Schick, 1996). If this is the case, it is possible that structure has an effect on policy. While this thesis will not be concerned with the effects of structural reform, reorganizations and terminations likely have consequences and implications beyond the agencies themselves. Thus, we need to understand these organizational changes better. Furthermore, the effect of organizational change on performance is a contested notion (Olsen, 1983), and some claim that formal structures amount to little more than myth and ceremony (Meyer \& Rowan, 2012). However, even if this is the case, understanding the roots, causes and timing of such myths can be of great value.

### 1.4 Definition of main concepts

### 1.4.1 Agencies

The study object of this thesis is a very specific type of government organization: the central agency. As this is far from a clear-cut concept, a definition is needed. For the purposes of this thesis, the definition outlined in Verhoest et al. (2010, pp. 17, 78) will be used. They define an agency as an organization that has the following features:

- It is a public law body, taken to mean that they are established by either a statute, law or ministerial/cabinet order.
- It has some autonomy in decision-making - for example in policy or managerial affairs.
- It is structurally separate from politically controlled units, such as ministries and their regional or local counterparts.
- It occupies a position in the central administration, a minister is formally accountable for the organization's actions, and it reports somewhat regularly to this minister.
- It possesses its own resources, for example financial assets and personnel.

The definition above excludes state-owned companies, trusts, foundations, societies and volunteer organizations. In Norway, it is most applicable to the organizations known as "directorates" - governmental bodies with a wide range of tasks. However, the definition above also includes other types of organizations such as a few secretariats and ombudsmen, which are also legally subject to ministerial authority (Verhoest et al., 2010, p. 78). In other words, this is a relatively broad definition, corresponding with what the Norwegian State Administration (NSA) Database labels as "civil service organizations outside of ministries" or "central administrative units" (Rolland \& Roness, 2011).

### 1.4.2 Structural reform

There is an abundant comparative literature on governmental agencies. However, these contributions are mostly preoccupied with issues that are somewhat distinct from their organizational structure, such as autonomy, control, output or performance (see for example Verhoest et al., 2010, Christensen and Lægreid, 2006, or Lægreid and Verhoest, 2010). ${ }^{3}$ Some studies are concerned with structure, such as Mortensen and Green-Pedersen (2015) and Danielsen and Fleischer (2016), but they study ministries and the bureaucracy as a whole, respectively. The majority of studies that do examine agency structure and change, place a nearly exclusive emphasis on a very specific type of organizational change, namely termination or organizational death - meaning that the organization is dissolved or ceases to exist. Kaufman (1976) for example - in his seminal, though now outdated, work on the lifespan of agencies - was the first to address the survival rate of agencies by posing the question: Are government organizations immortal? While his findings (which were affirmative) have been questioned for methodological reasons, many

[^2]similar studies have followed in his wake. Perhaps most notable is Lewis (2002, 2004), who answered Kaufman's question with a resounding "no" in his groundbreaking study of federal agencies in the United States. ${ }^{4}$ Lewis drew a picture of constant flux and instability, finding that agencies perish quite often - and usually for political reasons.

However, as a concept, termination is more problematic than one might think, and adding some nuance to it is necessary (Rolland \& Roness, 2011). First, an exaggerated focus on terminations seems to preclude the possibility that organizations can change without being terminated, and do so in a way that fundamentally transforms their forms and functions (Peters \& Hogwood, 1988, p. 120). Understanding extensive reorganizations thus becomes important, as they can amount to the same thing as a termination, in the sense that the organization simply no longer exists in its previous form. Researchers should thus not only be concerned with why organizations are conceived or killed, but also why they are transformed.

Second, the term termination is conceptually misleading at best. Taken at face value, a termination is not necessarily a termination. If an organization seemingly disappears, it might be because some or all of its functions, structures and personnel have been transferred, merged or absorbed by another unit. In such cases, the organization essentially lives on, and there is no reason to mourn it. As Peters (1988, p. 82) points out, terminations are sometimes merely successions, which they define as "the act by which an organization is replaced by a 'new' one directed at the same problem and/or clientele."

Taking all this into account, it seems clear that termination as a concept is in need of refinement and relabeling. Currently, the line between termination and reorganization is much too blurred. As Hajnal (2012, p. 834) suggests, distinguishing between termination and nonterminal organizational change seems to be "a matter of pragmatic choice rather than one implied by strict conceptual underpinnings." March (1981) implies that most organizational changes reflect simple responses to the same external forces. In other words, if March is right, reorganizations and terminations are not all that different from each other, and should be explained by the same factors. To the author's knowledge, this assertion has not yet been examined empirically in any large N studies.

[^3]Furthermore, in cases where scholars have included both mergers and splits under the "umbrella" of termination (such as Boin, Kuipers and Steenbergen, 2010), the termination label seems misleading. Kuipers et al. (2017) present a possible solution to the problem. Rather than focusing on a strict dichotomous definition of termination, they encourage researchers to look at 'transitions' - "structural changes to an organization that can be measured consistently and reliably over time." According to Rolland and Roness (2011), organizational changes can be divided into three main phases: birth, transformation and death. If Kuipers et al. are to be followed, we should not only be preoccupied with the death of agencies; their transformation can also be important.

This thesis will take cues from the insights above. I agree with Hajnal's (2012) suggestion that there is a possibility that the distinction between nonterminal and terminal organizational change is built on insufficient empirical foundations. One of the objectives of the thesis will thus be to examine whether to erase this distinction - as March (1981) suggests - or if it should be upheld. Furthermore, following the encouragement of Kuipers et al. (2017), I will expand the dependent variable to go beyond termination, and classify reorganizations as "events" as well.

An expanded dependent variable clearly necessitates relabeling. Only extensive changes will be included - for example, cosmetic changes such as name changes are excluded. A fitting label thus seems to be structural reform. 'Structural' serves the purpose of specifying the type change in interest here, while denoting that it is an overarching concept which is broader than that of termination. 'Reform' is chosen rather than change, reflecting the fact that minor organizational changes are disregarded. ${ }^{5}$ Structural reform is defined as: "A significant change in the structure of an organization, more specifically the extensive reorganization and termination of governmental agencies." Figure 1.1 illustrates the components of structural reform.

The termination literature will not be entirely disregarded, however. First, the theoretical rationale of this thesis will build upon its contributions. Second,

[^4]I will model terminations and reorganizations as separate dependent variables. The purpose of this is twofold. It makes it possible to compare the results for terminations with previous findings, and secondly to infer whether or not they are explained by the same variables.

- Reorganization: Organizational changes that do not result in the death of the organization, such as transformations or extensive reorganizations.
- Termination: Organizational changes that result in the termination of the organization in its current form, such as splits, mergers, secessions or pure terminations.
- Structural reform: A broader term that is made up of both terminal and nonterminal changes (i.e. reorganizations and terminations).

This leaves us with two preliminary, competing hypotheses:

H1a: The determinants of termination and reorganization are the same, confirming that structural reform is a valid concept.

H1b: The determinants of termination and reorganization are different, proving that structural reform is an invalid concept.

## Structural reform



Figure 1.1: Components of structural reform. The dashed line illustrates the lifespan of a hypothetical organization.

### 1.5 Background

Given that the termination literature was developed in the United States, which has a political system that is vastly different from that of Norway, the theoretical rationale will be modified to fit the Norwegian context. This necessitates some background information on what the Norwegian context is. The purpose of this section is to lay the groundwork for the theoretical modifications that are made in Chapter two. First, I outline the history of Norwegian governmental agencies. I then briefly discuss the Norwegian reform context.

### 1.5.1 Agencies: A brief history

In Norway, agencies perform a function similar to agencies in other Western countries. Their primary task is to implement public policy, exercise authority and perform regulatory tasks on behalf of the state. Internationally, the main cause of agencification in the past decades has been a growing pressure to separate day-today operations from the more political work of ministries, also referred to as the "decoupling of steering from rowing" (Van de Walle, 2016; Osborne \& Gaebler, 1992). This growth has been seen as part of New Public Management (NPM) administrative reforms (Lægreid, Roness \& Rolland, 2013, p. 660; Christensen \& Lægreid, 2001b; Christensen \& Lægreid, 2007b). The following section will provide a brief overview of the history of Norwegian agencies as an attempt to identify the broader and fluctuating patterns of agency structure.

## Prior to the 1980s

Norwegian governmental agencies have a long history, that can be traced back to the 1840s (Lægreid et al., 2013, p. 660). The first agencies were established due to pressure from professional groups to create public bodies that were separate from ministries (Verhoest et al., 2010, p. 79), and rooted in demands for a more professionalized, neutral and proactive bureaucracy (Grøndahl, 1997, p. 11). However, the use of agencies remained limited until the 1920s.

The 1950s marked another wave of agencification, coinciding with an expanding Norwegian welfare state and a growing portfolio of technical and routine tasks. These tasks were transferred in order to allow ministers and ministries to focus on more strategic issues (Verhoest et al., 2010, p. 79). The argument was made that ministries were overburdened and that there was a limit to how much they could
grow; keeping up with the expanding welfare state was simply seen as impossible (Grøndahl, 1997, p. 20). In other words, the idea that ministries ought to be secretariats for political leadership gained traction during this period, and delegating certain tasks to agencies was key in bringing about this change. ${ }^{6}$

## After the 1980s

In the late 1980s and early 1990s, certain NPM-style reforms slowly began to be implemented in Norway. While these types of reforms encouraged highly specialized and autonomous agencies - also known as the pattern of disaggregation they also included vertical changes such as privatization of government services in the railway, telecommunication, postal services and road construction sectors. While the reforms ultimately led to a slight decline in the total number of agencies, the role and importance of agencies were not diminished (Verhoest et al., 2010, p. 80). In accordance with NPM slogans such as "letting the manager manage," agencies gained more autonomy in exchange for being subjected to a formalized performance-assessment regime called management by objectives and results (Lægreid, Roness \& Rubecksen, 2006). The decline in number of agencies was also counteracted by the fragmentation and splitting of some agencies, driven by a desire to split the agency monoliths into small, specialized and manageable units.

Around the late 1990s and early 2000s, a new organizational pattern of aggregation emerged, which was antithetical to the dominant doctrine of NPM. This new pattern has been aptly called post-NPM (Christensen \& Lægreid, 2007a; Christensen \& Lægreid, 2011; Christensen, 2012). Whereas the ideal under NPM had been highly specialized and fragmented agencies, the post-NPM doctrine emphasizes a "whole-of-government approach." Disaggregation had created a need for coordination between units, and in many policy areas it had become apparent that increased cooperation across portfolio boundaries was necessary. In other words, the government had to be "stitched back together" (Van de Walle, 2016, p. 136). In Norway, this trend has resulted in the merging and de-specialization of some agencies (Lægreid, Rolland, Roness \& Ågotnes, 2010). The most notable reform informed by post-NPM doctrines is the reform of Norway's welfare administration (Christensen, Fimreite \& Lægreid, 2007).

[^5]
### 1.5.2 The Norwegian reform context

As mentioned in section 1.4.2, with the exception of the agencification literature, the comparative literature on governmental agencies does not have an exclusive focus on structural reforms. Furthermore, comparative studies on reform trends tend to have a scope that goes beyond matters of structure, being at least equally concerned with matters of process. It is clear that a more specific theory is needed to explain structural reform, and this is outlined in the second chapter.

First, however, it should be noted that reform studies have yielded insights that nevertheless should be taken into account. While these studies might be slightly unsuitable to identify the specific mechanics behind structural reform, they all thoroughly emphasize the importance of a country's domestic context. Christensen and Lægreid's transformative perspective, in which reforms are hypothesized to be modified by institutional characteristics and cultural values is one example (Christensen \& Lægreid, 2001b; Christensen \& Lægreid, 2007b; Lægreid et al., 2010). Whether labeled national administrative traditions (Knill, 2001, p. 42) or reform trajectories (Pollitt \& Bouckaert, 2011), the reform literature insists that a country's political-administrative system, history and state tradition matter.

Consequently, I will provide a brief overview of Norway's reform context. This lays the groundwork for the subsequent adaptation of the hypotheses which have been generated in majoritarian and federal systems. Another purpose is to establish how drastic and frequent structural reforms can be expected to be in Norway, given the country's national context and history. I will organize the relevant components similarly to Christensen, Lægreid and Wise (2002), and distinguish between three important dimensions in matters of administrative policy: the political-administrative system, historical-institutional context and environmental factors. While Christensen et al. (2002) examine the broader phenomenon of administrative reform and how the three dimensions restrict the potential for radical change, their characteristics can also be relevant for structural reform.

## Political-administrative system

Political-administrative conditions refer to the formal nature and structure of the political system, and how this implicates the instrumental reorganization of the state (Lægreid et al., 2003, p. 11). A notable feature of Norway's political system is its parliamentarian nature and proportional electoral system, characterized by compromise and consensus (Lijphart, 2012). Since 1980, Norway has had 13 gov-
ernments, of which 11 were minority cabinets, and seven were coalitions. This paints a picture of political flux, and a system in which negotiation between blocs is essential to enact change. On the surface this leads us to expect considerable restraints on the prospect of passing structural reforms.

However, this is not necessarily the case. While the Norwegian Parliament has extensive powers to control and oversee the government, it has for the most part played a passive role within administrative policy, and allowed the executive branch substantial leeway within matters of civil service organization (Lægreid, Roness \& Rubecksen, 2007, p. 388; Verhoest et al., 2010, p. 72). In addition, the parliament committee which handles the organization of government administration is viewed as the least prestigious by the MPs themselves (Roness, 2001). Furthermore, a parliamentary tradition of attaining consensus and compromise makes sure that negotiations will likely result in some kind of change, although this tradition also reduces the chances of enacting drastic change.

Another important facet of Norwegian administrative policy is the principle of ministerial responsibility, which means that the minister is ultimately responsible for the actions of his or her administration (Christensen et al., 2002, p. 161). This carries the implication that reforms tend to be sector-based, something that corresponds with the historical notion of Norway as a "segmented state" with welldeveloped corporatist structures (Hernes, 1983; Lægreid, Roness \& Rubecksen, 2005, p. 10). The principle of ministerial responsibility also means that ministers are powerful actors within their respective policy areas. Although Norwegian agencies are relatively autonomous, they are formally subject to ministerial control and the responsible minister has influence over their structural composition.

Moreover, ministries with overarching responsibilities for administrative policy are rather weak. The ministry in charge of administrative policy, currently the Ministry of Local Government and Modernisation, has little coordinating power and few opportunities to instruct other ministries (Christensen \& Lægreid, 2011, p. 139). The Prime Minister also has a relatively weak position. While the Prime Minister can request information from cabinet members, he or she can not issue orders, reshuffle ministerial jurisdictions or even technically dismiss ministers (Strøm, 1994, p. 42). All in all, the verdict of Christensen et al. (2002) that the political-administrative system of Norway imposes moderate restraints on the potential for structural reform seems reasonable.

## Historical-institutional context

Different political-administrative systems are normally characterized by varying norms and values, and these are thought to have an effect on the state's administrative reform process. As has been briefly discussed already, Norway has a culture of consensus and mutual trust between political and bureaucratic executives, with an emphasis on incremental changes and taking multiple views into account when changes are considered (Christensen et al., 2002, p. 162). Norway has a welldocumented history as a reluctant reformer that conducts revolutions in "slow motion" (Olsen, 1993; Olsen, 1996; Christensen \& Lægreid, 2009). Furthermore, the cabinet has strong collegial features and prefers decision-making by consensus (Eriksen, 1988).

Another element here is the pressure exerted by citizens and media on the legitimacy of government. Generally, Norwegian citizens have positive views on government, and the civil service scores high on measures of legitimacy, trust and confidence (Verhoest et al., 2010, p. 61). 51 per cent of citizens express high degrees of confidence in the civil service, ranking tenth out of a sample of 29 states. There has been a slight decline since the 1990s, however, but the generally high levels of trust and confidence are thought to soften demands for reform. Christensen et al. (2002, p. 165) argue that the historical-institutional context imposes strong restraints on the potential for structural reform.

## Environmental factors

Environmental factors denote the external forces that could be drivers of reform. Ideas spreading across borders (diffusion) is one example. Sometimes myths prevail among reformers, and certain models of public management come to be seen as superior to others - NPM during the 1980s is an example (Christensen \& Lægreid, 2001b). Although Norway is a member of the OECD and certainly has been influenced by international reform trends such as NPM, it has been hesitant to adopt some of its aspects (Christensen \& Lægreid, 2009, p. 308). On the one hand it has accepted management by objectives and results (MBOR), increased managerial autonomy, market-orientation and contracting-out. These reforms have however been packaged in a "Norwegian way," and Norway has generally not embraced the idea of a state built exclusively on market principles (Christensen \& Lægreid, 2009, pp. 307-308).

Economic crisis is another environmental factor of note, since fiscal stress can
increase the pressure for government reform (Christensen et al., 2002, p. 163). In Norway's case, however, fiscal pressure has been low. Since 1980, there have been no crises large enough to legitimize public reform on a massive scale (Christensen \& Lægreid, 2001a). Consequently, environmental factors can be said to impose strong restraints on the potential for structural reform - indicating that such external forces seem to have had little impact on domestic reform processes.

## Chapter 2

## Explaining structural reform

In the previous section, I outlined some important facets of Norway's national context. We can derive from it that Norway's national context seems to impose considerable restraints on the potential for reform, and expect that large-scale changes - structural or otherwise - must bypass a few obstacles. Nevertheless, structural reforms do occur. They can even be said to be quite frequent - 82 out of the 142 agencies that have existed since 1980 have since been terminated. We thus return to the research question. Why do structural reforms happen?

The structure of the following theoretical framework will build on the contributions of Adam et al. (2007). They suggest a distinction between two types of explanations; political incentives and organizational stickiness. The former is an exogenous explanation that emphasizes political motivations, while the latter is an endogenous explanation that underlines the importance of an organization's individual characteristics.

|  |  | Organizational stickiness <br> (endogenous) |  |
| :--- | :--- | :--- | :--- |
| Political incentives <br> (exogenous) | High | 1) Reform | High |

Table 2.1: A typology of organizational termination (from Adam et al. 2007, p. 231).

Table 2.1 can be used to conceptualize the interplay of political incentives on the one hand, and organizational stickiness on the other. The table outlines how individual organizations might be affected by various combinations of these two variables. An organization associated with a high degree of political incentives is expected to be a facilitator for change; meaning that the organization is contested and in the spotlight of actors with a vested interest in its demise. Conversely, a high degree of organizational stickiness is assumed to shield against malicious motives, meaning that the organization is powerful enough to resist most attempts to terminate it.

Adam et al. (2007) theorize that low organizational stickiness combined with high political incentives will result in termination, while a combination of low political incentives and high organizational stickiness is assumed to maintain the status quo. Interestingly, low scores on both dimensions are assumed to involve some level of latent risk. This is due to the volatile nature of political determinants, which can fluctuate at a whim and expose organizations to sudden threats of elimination.

A category of chief interest, however, is the combination of high political incentives and high organizational stickiness. In these cases, Adam et al. hypothesize that the political tug of war between political actors and the organization will result in a compromise, namely reorganization or reform. This means that reorganizations are expected to be the result of a power struggle, and a stalemate between two powerful actors (the executive and the organization). ${ }^{1}$

The following theoretical explanations will thus be organized based on these two dimensions. I will only include explanations that are considered to be compatible with Norway's domestic context.

### 2.1 Political incentives

This section will delve deeper into the type of explanations that have been labeled by Adam et al. (2007, p. 231) as "political incentives," which explain how political processes and motivations can affect the likelihood of structural reform. They are usually rooted in a rational choice approach, and therefore emphasize dynamics

[^6]of power and self-interested actors. In general, rational-choice theorists posit that institutional change can only happen in cases where the relative power of actors change, or if institutions no longer serve the interests of powerful actors (Knight, 1992; North, 1990).

Some actors are, however, more important than others. In Western democratic political systems, political executives (meaning decision-makers) occupy a central role. While they are certainly not omnipotent nor almighty organizational designers, and base their decisions on the input of numerous actors, a closer scrutiny of their role is useful. After all, they are the final decision-makers, and their choice to make a change is the last step in a long and complicated process.

The role of political executives can be seen in many ways. In theory, they are meant to fulfill the "will of the people" and be in active pursuit of meeting policy goals, which in turn are based on the mandate granted to them by voters. This is related to what is called the "logic of consequences," or an "instrumental perspective" (Christensen, Lægreid, Roness \& Røvik, 2007). Olsen (2010) describes it as the democratic-instrumental vision, and its view on change of public organizations is the following: As the policy goals of the political executive change and fluctuate, the organizations charged with implementing them are more likely to be subjected to change, since politicians strive to find the "one best way" of organizing these organizations in order to solve the challenges they are faced with (Van de Walle, 2016, p. 131). Furthermore, politicians are thought to be motivated by the prospect of electoral punishment by voters in the event that policy goals are not reached. In other words, the most important driver of change is thought to be "the (changing) preferences of the political executive" (Danielsen \& Fleischer, 2016, p. 4).

Notably, the preferences of the executive can be, and are, shaped by other actors. Terry Moe's theory of structural choice (1990) is useful to understand the wider power struggle at play here. His theory addresses some of the inherent weaknesses of the democratic-instrumental vision, which represents an idealized and somewhat simplified version of reality. ${ }^{2}$ Moe argues that an exaggerated emphasis on voters as social actors is analytically awkward in this context, since most citizens "do not care about the arcane details of public administration," and simply do not vote based on promises to merge one public body with another (Moe, 1990, p. 129).

Instead, he proposes a framework that includes a different group of actors, and considers the power relations between them. In Moe's opinion, politics is rife with

[^7]conflict and difference of opinions, and compromises happen all the time as a result. This extends to institutional design as well. He posits that, while the general public or the average voter rarely care much about the organizational make-up of public agencies, many interested parties - such as interest groups, politicians and bureaucrats - do hold a vested interest in government structure (Moe, 1990, p. 129). Interest groups, for example, are undoubtedly active players in the making of public policy. Given that structure can shape policy outcomes (Egeberg, 2003), how the public agencies within their policy areas are structured is of great importance to these groups. The following quote summarizes Moe's (1989, p. 267) arguments: "[...] bureaucracy is not designed to be effective. The bureaucracy rises out of politics, and its design reflects the interests, strategies and compromises of those who exercise political power." Institutions reflect the power of the actors who established them, at the time they were established (North, 1990).

In other words, the structural design of institutions is thought to be the result of a messy and inherently political process. Organizational structure is contested among rival interests, and the outcome of conflict depends on the relative strength of the actors involved. The nature and extent of the changes will consequently vary from case to case. But how can we identify the determinants of structural reform, based on Moe's perspective?

### 2.1.1 Government turnover

An important theoretical contribution comes from Lewis (2002, 2004). In his studies, Lewis has adapted Moe's theoretical framework into several testable hypotheses, primarily in order to explain agency termination. ${ }^{3}$

According to Lewis, the termination of agencies is strongly related to changes in who controls the government administration. It is true that agencies are allowed to live if they are deemed to be useful and efficient, Lewis posits. However, he also argues that agencies "never escape the politics that created them" (Lewis, 2002, p. 92). Whether they are perceived as useful and efficient will depend on political predispositions and ideology. One agency might be seen as a success by one actor and as a failure by another (Adam et al., 2007, p. 224; Lewis, 2002, p. 91). ${ }^{4}$

[^8]Therefore, Lewis argues, an election or simply a change of governing party will increase the risk of termination, as newly elected parties will likely attempt to destroy agencies created by their opponents. Furthermore, elections tend to be monumental events that lead to the emergence of new priorities and agendas. Conducting a survival analysis on all administrative agencies created in the United States between 1946 and 1997, Lewis finds that government organizations are not immortal at all, and that risk of termination increases due to political turnover, especially when elections result in a unified government. ${ }^{5}$ The potential for change is similarly increased directly after an election because new presidents have to "hit the ground running," increasing the risk that organizational changes occur soon after an election (Pfiffner, 1996; Lewis, 2002, p. 95).

Not only can the introduction of structural reforms sate a newly elected government's wish to signal new priorities and a new agenda - the election of a new government also provides a window of opportunity for political entrepreneurs to pry into the political cycle and affect policy, which can also lead to organizational change (Baumgartner \& Jones, 2010; Kingdon, 1984). Kingdon (1984, pp. 165178) does indeed identify termination as a change that could follow after a window of opportunity is opened, changing the view that politicians normally are reluctant to break existing equilibriums (Park, 2013, p. 418). The early period after a cabinet's entry into office thus presents a time when reforms are less costly than normal, allowing determined actors to "ride the wave of opportunity" (Geva-May, 2004, p. 319).

However, Lewis' insights are not necessarily directly transferable to other countries. The political system of the United States is characterized by a separation of powers, and is in many respects an outlier among Western democracies - which tend to have parliamentary systems (James et al., 2016, p. 2). For example, parliamentary systems are different in the sense that the executive branch can make many organizational changes without legislative consent. Thus, it is reasonable to expect the forces that determine the survival of government agencies to be different as well. Adapting Lewis' theoretical rationale to a parliamentary context is

[^9]clearly necessary.
James et al. (2016) attempts to do this in the case of the United Kingdom. Ministers are central to his analysis, as they (in the UK) possess the power to create or abolish agencies without legislative approval (which ultimately fall under the minister's purview). They argue that a change in responsible minister, as well as the entry of a new government, increases the risk of termination. Much like in the US, new governments and ministers in the UK also feel a need to "hit the ground running," making the period immediately following their entry to office more likely to see sweeping reforms and organizational changes (James et al., 2016, p. 5; Lewis, 2002, p. 95).

Just as James et al. adjusts the theory to fit the UK, the theory must also be adapted to fit the Norwegian context. The minister's influence, as indicated in part 1.5.2, is undoubtedly of great importance within Norwegian policy-making and organizational changes. However, larger changes and structural reforms might still require the approval of parliament. ${ }^{6}$ In addition, both newly elected cabinets and ministers likely feel a need to "hit the ground running" and show that they can and will do something. Moreover, elections are likely useful windows of opportunity for a multitude of actors. In accordance with the theory of structural choice, a shift in power is a change in relative strength between actors, and change should be more likely to follow (Moe, 1990).

Other variables are less applicable to the Norwegian context. James et al. also emphasize the influence of the Prime Minister, which makes sense given UK's majoritarian Westminster system. In the case of Norway, however, it seems reasonable to downplay the importance of the Prime Minister within administrative policy, as the Norwegian Prime Minister does not even have the formal right to control other ministers (Verhoest et al., 2010, p. 76). Moreover, the concept of party incongruence (in which it is theorized that parties tend to protect agencies created under their rule, and actively attempt to destroy agencies created by the opposition) seems like a poor fit in a Norwegian context. Due to the consensus and negotiation culture in the Norwegian system, most parties and actors are likely complicit (to some extent) in every agency's conception. This is supported by Pollitt and Bouckaert

[^10](2011, p. 57), who argue that political systems characterized by consensus lead to more stable and long-lasting reforms. On these grounds, the following hypotheses are adapted:

H2a: An agency's risk of being subjected to structural reform is increased after a change in government.

H2b: An agency's risk of being subjected to structural reform is increased after a change in responsible minister.

### 2.1.2 The attributes of the government

In parliamentary systems, not all cabinets are the same. Here I will focus on two important government characteristics: their parliamentary strength and whether it consists of several parties or not. These attributes vary between governments, and are expected to affect the government's ability to enact change. It should be emphasized that this section is highly exploratory, and a first attempt to identify the potential importance of government type.

## Minority governments

Depending on their extent, structural reforms are not always required to be put before parliament. Legislative consent might not be needed for smaller reforms, and in such cases it will be up to the government to institute them at their whim. However, parliament is usually consulted when the government wishes to implement major, wide-scale sector reforms, as they usually require changes to multiple laws. For minority governments such reforms might be harder to pass without negotiating with the opposition, due to the considerable influence opposition parties are expected to have in such cases (Strøm, 1990, p. 207; Bergman, Müller \& Strøm, 2003; Pollitt \& Bouckaert, 2011, p. 56). In other words, the aggregate parliamentary strength of minority governments are considered to be an impediment to frequent structural reform. That is not to say minority governments are unable to institute reforms at all, but rather that they are more likely to be "watered down" and stripped of radical components - such as agency termination. Thus, we can expect that minority governments are less likely to be able to pass structural reforms.

## Coalition governments

Hypothesizing the likelihood of structural reform under coalition governments is somewhat more complicated, and it should be emphasized that these hypotheses are highly speculative. On the one hand, they are made up of several parties, and can be expected to have considerable parliamentary strength. Their ability to pass resolutions in parliament is obviously affected by their dependence on parties outside of the government (i.e. whether they have a majority or not, as outlined in the previous paragraph).

However, coalition governments tend to have an internal dynamic of their own. Due to policy divergence and preference diversity between parties, members of a coalition must make concessions to each other to maintain the integrity of the coalition. It seems reasonable to assume that these concessions sometimes involve structural reforms. However, the greater these concessions are, the more strain is put on the internal cohesion of the coalition parties (Bergman et al., 2003, p. 128). Hence, we can expect parties to refrain from pursuing sweeping and drastic structural reform whilst in a coalition, and to largely follow a principle of "don't rock the boat." This is especially likely to be the case if the coalition consists of many parties, or if the ideological distance between the coalition parties is high. For this reason majority coalitions are expected to be relatively hesitant to embrace structural reforms, and much less inclined to pursue them compared to minority coalitions.

We can outline the theoretical expectations from these arguments in table 2.2, associating majority governments with a high ability to implement structural reform, and coalition governments with a low inclination to pursue them.

## Majority government

(ability)

|  | Yes |  | No |
| :---: | :---: | :--- | :--- |
| $\begin{array}{c}\text { Coalition } \\ \text { government } \\ \text { (inclination) }\end{array}$ | Yes | $\begin{array}{l}\text { (4) Least likely } \\ \text { Majority coalition }\end{array}$ | (3) Third most likely |
| Minority coalition |  |  |  |$]$ (1) Most likely $\quad$| (2) Second most likely |
| :--- |

Table 2.2: The likelihood of passing structural reforms under different governments.

To sum up the contents of the table:

- Single-party majority governments are associated with the highest likelihood of passing structural reforms, due to a wide parliamentary scope of action and no reason to shy away from drastic changes.
- Single-party minority governments are expected to be second most likely to pass structural reforms, given a slightly lower ability to pass resolutions in parliament combined with a high inclination to enact them due to being the sole party in office.
- Minority coalitions are expected to be third most likely to institute structural reforms, since their aggregate parliamentary strength is shaky and they have to tend to the integrity of their coalition. However, they usually consist of fewer parties than their majority counterparts, and the ideological distance between the parties can thus be expected to be smaller.
- Finally, majority coalitions are least expected to pass structural reforms. While they are quite capable of seeking drastic reforms, they will prefer to maintain the (fragile) stability of the coalition rather than adopt radical structural reforms. In particular, high ideological distance and a higher amount of parties sets them apart from minority coalitions.

Given the fact that there have been no single-party majority governments in Norway after 1980, there is no need to include them in the hypotheses. We can derive the following expectations from the above:

H3a: An agency's risk of being subjected to structural reform is least likely under majority coalitions.

H3b: An agency's risk of being subjected to structural reform is less likely under minority coalitions than under minority single-party governments, but still more likely than under majority coalitions.

H3c: An agency's risk of being subjected to structural reform is most likely under minority single-party governments.

### 2.1.3 Fiscal pressure

Arnold (1998) and Lewis (2004, p. 140) have pointed out that historically, budgetary concerns have "been one of the principal motivations for agency termination." In the literature, there are two competing theories on the importance of fiscal pressure.

The first theory can be traced back to Kaufman (1976), who asserted that organizations are engaged in a constant competition for scarce resources. Running a government is a financial balancing act, and consequently there must be a reasonable relationship between income and expense. If expenditure is greater than revenue, some items on the annual budget will naturally have to be cut to make up for the resulting imbalance. In other words, times of high fiscal pressure should have a negative impact on the survival rate of agencies, due to increased demands for cost-cutting and efficiency.

The second theory essentially argues that the exact opposite is the case. Carpenter and Lewis (2004) points out that the termination of an agency is a costly affair, economically as well as politically. Some of these expenses can be severance pay, relocation assistance and other investments - not to mention the costs connected to transferring tasks to other agencies or establishing new ones. In total, these factors might actually run up costs, especially in the short term. Furthermore, terminations are irreversible, and might not even save much money since most of the programs enforced by the agency would have to continue anyway. Thus, it is theorized that periods of high fiscal pressure will be characterized by fewer terminations than normal.

Adapting these hypotheses to a Norwegian context is somewhat difficult. While budgetary concerns do matter in Norway, as they do in other countries, the fact remains that fiscal pressure has generally been low in Norway since 1980. There
have been no financial crises major enough to legitimize public reform on a massive scale (Christensen \& Lægreid, 2001a). In addition, since 1990 Norwegian governments have had ample opportunity to bridge budgetary gaps by allocating additional funds from the Government Pension Fund of Norway (the oil fund), where the surplus of the Norwegian petroleum income is deposited (Finance, 2017).

That being said, the relationship between income and expense remains relevant. If an imbalance emerges, or revenue declines while expenditure remains constant, it might spark symbolic efforts by politicians to pledge to "modernize" and "redesign" government, in the name of making the state leaner and more efficient. These efforts may be costly in the short term, and might not even have much of an impact on expenses. But because the Norwegian government (since 1980) has not been financially hard-pressed, such investments have been possible. For these reasons, I expect that:

H4: An agency's risk of being subjected to structural reform is increased when fiscal pressure is high.

### 2.2 Organizational stickiness

The second important dimension identified by Adam et al. (2007) is "organizational stickiness." This refers to the innate attributes of an organization, more specifically the attributes that affect its resistance to change. In part 2.1 I mentioned the multitude of actors to which government structure matters, such as interest organizations, political parties and bureaucrats. Unsurprisingly, the bureaucrats working in the organizations themselves are quite active participants, engaged in a continuous mission of self-preservation. Kaufman (1976, pp. 9-10) put it aptly:

> [Organizations] are not helpless, passive pawns in the game of politics as it affects their lives; they are active, energetic persistent participants. The motives of their leaders and members to preserve the organizations to which they belong are very strong. The techniques they can use are abundant, and their experience in using them is extensive. [...] If this sounds like warfare, it is - at least a type of warfare, a struggle for organizational existence. Organizations engage in it all the time, but with particular intensity when those who are part of them perceive their organizations' very lives as threatened.

Much like Kaufman's work, the studies that underline these explanations have their origin within sociological approaches such as organization ecology. They are preoccupied with matters of organizational selection and stability, namely identifying the determinants of who lives and dies. An important underlying concept is
that of structural inertia, meaning that organizations are inherently opposed to radical changes in structure, strategy or policy (Geva-May, 2004, p. 313). Organizations need to adapt in order to survive ("the survival of the fittest"); organizations with strong inertial properties are better equipped to maintain stability and defend themselves against external threats, while low-inertia organizations are susceptible to change and termination (Hannan \& Freeman, 1984). In this section, I will outline the organizational characteristics that should be taken into account.

### 2.2.1 Age

In the organizational survival literature, the age of the institution in question is often said to be an important factor. In the words of Downs (1967, p. 20): "[...]the older a bureau is, the less likely it is to die." Lowi (1979, p. 309) explains why: "Once an agency is established, its resources favor its own survival, and the longer agencies survive, the more likely they are to continue to survive." This line of reasoning is grounded in the assumption that older organizations develop important ties over time, and gradually accumulate resources, support and knowledge that is thought to reduce the organization's likelihood of termination. Furthermore, older organizations do not suffer from what Stinchcombe (1965) calls the liability of newness. New organizations are seen as less able to find their place within their environment, lacking established routines and experiencing growing pains (Kuipers et al., 2017). This is related to the forging of bureaucratic identity and the fact that it takes time before this identity materializes (James et al., 2016, p. 5).

According to Downs, the relationship between age and survival is linear. In other words, the hazard rate will decrease monotonically as the organization grows older. Carpenter and Lewis (2004) disagree with this assumption, and posit that there is a non-monotonic relationship between age and survival (see figure 2.1). As organizations are established, they go through a "honeymoon period" in which they are somewhat shielded and protected from changes. In other terms, the forces that led to the organization's creation in the first place are likely still in place during the first years after conception (Kuipers et al., 2017, p. 9). In addition, political executives know little of the agency's performance before some time has passed. By the end of the early period however, executives have had ample time to learn about the agency's performance. For this reason the period right after the honeymoon is thought to be a time of increased risk (Adam et al., 2007, p. 224), as the organization still has not "taken root" (Carpenter \& Lewis, 2004). After


Figure 2.1: Downsian versus learning-based agency hazards. (Carpenter \& Lewis, 2004, p. 212).
reaching this point, risk is assumed to decrease gradually with age.
Finally, old organizations are not necessarily impervious to termination or reform. Baum (1989) hypothesizes that old organizations tend to become obsolete if they do not adapt. This entails that very old organizations are more likely to be subjected to structural reform in order to accommodate emerging needs. In other words, the hazard rate is thought to follow the learning-based termination hazard outlined in figure 2.1, with an additional "bump" at its right tail. Following the age cut-off points of Kuipers et al. (2017, p. 9), we are thus left with the following expectations:

H5a: An agency's risk of being subjected to structural reform is decreased during the first five years after creation.

H5b: An agency's risk of being subjected to structural reform is increased in its adolescent years (older than 5 years and younger than 10 years).

H5c: An agency's risk of being subjected to structural reform is decreased in its early mature years (older than 10 years and younger than 30 years).

H5d: An agency's risk of being subjected to structural reform is increased in its mature years (older than 30 years).

### 2.2.2 Size

Similarly to age, the size of an organization has also been argued affect its survival rate. The notion originates from Herbert Simon (1950, pp. 117-118), who argued that large organizations have a higher likelihood of survival. This was later repeated by Downs (1967, p. 17), who hypothesized that larger organizations tended to live longer than small organizations for two reasons. First, large organizations have the advantage of extensive specialization and economies of scale. Second, large agencies tend to serve large groups of clients, and thus have many constituents which are likely to mobilize when the agency is faced with the threat of termination (Corbett \& Howard, 2016, p. 3). In the words of James et al. (2016, p. 6), having a larger size is connected to the agency's capacity to defend itself, which insulates it from termination and political intervention "because they have larger constituencies with which to protect themselves." Furthermore, the sunk cost in personnel and equipment increases with size, and the transaction costs involved with the reshuffling of large structures are therefore quite high (Hannan \& Freeman, 1984, p. 158). ${ }^{7}$

These arguments seem to suggest a continuous relationship between size and risk of structural reform, and this might very well be the case. However, Corbett and Howard (2016) suggest that there is indeed a threshold in which an organization runs a risk of being perceived as too large. In their case study of the Australian Agency for International Development, which underwent numerous structural changes before it was terminated in 2013, ${ }^{8}$ they find that perceptions of size matter greatly. While their study concentrates on size as a social construct, they hypothesize that perceptions of agencies as too large or bureaucratic are heavily impacted by increases in actual size. In other words, there seems to be a tipping point at which the organization becomes too large to justify continued existence in

[^11]its current form.
The theoretical arguments outlined above are obviously very unspecific. This makes it hard to derive specific empirical expectations. As a consequence, the hypotheses are slightly "fuzzy." I expect the following:

H6a: An agency's risk of being subjected to structural reform decreases with size, meaning that larger organizations have a lower likelihood of being reformed than smaller organizations.

H6b: An agency's risk of being subjected to structural reform is increased for organizations that are larger than a certain size, which leads to perceptions of it being too large and thereby pressure for its reform.

### 2.2.3 Geographic dispersion

The two preceding sections have referred to the constituencies of an organization. An organization's constituency is not precisely defined in the scholarly literature, but it seems fair to describe it as a group of actors and stakeholders with a vested interest in the organization's continued existence. The section concerning the importance of age theorized that this constituency can grow more substantial and deep-rooted with time. However, the spatial organization and locus of these constituencies can also matter.

Seeing geography as important seems to be very compatible with the Norwegian context, and is supported by findings in the agency relocation literature. The relocation of agencies based in Oslo, for example, is usually justified by assertions that it will increase the agency's autonomy, although it remains unclear whether this is true (Egeberg \& Trondal, 2011, p. 99). Meyer and Stensaker (2009) points out that municipalities played a decisive role in the successful adoption of a wider administrative reform in 2004, which included the relocation of seven agencies. The Norwegian Post and Telecommunication Authority (now known as the Norwegian Communications Authority) was one of these agencies, and in a case study of the process, Kiland and Trondal (2010) find that the relocation plans were met with fierce resistance by local stakeholders. Moreover, the Minister of Labor and Administration at the time, Victor Norman, was forced to abandon his plans to move the seven agencies into regional "clusters." Instead, he had to accept the dispersion of agencies all over the country, in order to secure sufficient support (Kiland \& Trondal, 2010, p. 347). This illustrates the fact that forces located outside of the central
government hold considerable political clout vis-à-vis the central government, and is a force to be reckoned with in these matters.

The argument can be extended to structural reform as well. The termination of an agency can entail the loss of jobs, prestige and power for a local community, and is likely something that will be highly resisted by affected constituents and stakeholders. I argue that this is especially applicable for agencies that are geographically dispersed, meaning that it has offices in more than one location. In such cases, the agency will likely have a larger and more diverse set of stakeholders and thereby be highly resistant to change. For this reason, I expect that:

H7: An agency's risk of being subjected to structural reform is decreased when the agency is geographically dispersed.

### 2.3 Hypothesis overview

Expected empirical pattern<br>Expected effect

## Terminations vs. Reorganizations

H1a: Terminations and reorganizations have the same determinants. No difference in effects.
H1b: Terminations and reorganizations have different determinants. Difference in effects

## Government turnover

H2a : Increased risk after a change in government. Increased risk
H2b: Increased risk after a change in responsible minister. Increased risk

## Government type

$\begin{array}{lc}\text { H3a: Risk is lowest under majority coalitions. } & \text { Lowest risk } \\ \text { H3b: Risk is medium under minority coalitions. } & \text { Medium risk } \\ \text { H3c: Risk is highest under single-party governments. } & \text { Highest risk }\end{array}$

## Fiscal pressure

H4: Increased risk when fiscal pressure is high. Increased risk

## Age

H5a: Decreased risk when younger than 5 years. Decreased risk
H5b: Increased risk between 5 and 10 years.
H5c: Decreased risk between 10 and 30 years.
Increased risk

H5d: Increased risk when older than 30 years.
Decreased risk
Increased risk

Size
H6a: Decreased risk for large organizations. Decreased risk
H6b: Increased risk for very large organizations. Increased risk

## Geogaphic dispersion

H7: Decreased risk when geographically dispersed.
Decreased risk

Table 2.3: Table summary of hypotheses.

Chapter 2. Explaining structural reform

## Chapter 3

## Research Design

The previous chapter discussed the various explanations behind structural reform. In this chapter I will outline my quantitative research design, which is intended to confirm or disprove these explanations. First, event history models in general, and the discrete survival model in particular, are explained in short terms, along with a justification of why such models are appropriate for the purposes of this thesis. Second, I will discuss the structure of the dataset and the nuances of the dependent variable - structural reform. Third, I will discuss how my independent variables are operationalized, and outline their inherent strengths and weaknesses. This should lay the groundwork for an understanding of the empirical results which are presented in the next chapter.

### 3.1 Event history analysis

Event history models are fundamentally concerned with risk, namely the risk associated with an event occurring. Such methods, often referred to as survival analysis, originate from medicine and biology. Their application in these fields is quite literal. For example, what affects the survival rate of patients that are exposed to a certain disease? What determines the lifespan of different mechanical components? These methods have applications within social science as well. Why do some wars end quickly, while others last (Cunningham, Skrede Gleditsch \& Salehyan, 2009)? Why are some ministers fired, while others finish their terms (Søyland, 2015)? Event history models are thus well-suited for examining agency survival.

There are several types of survival models, and they all have their pros and cons. Picking one model over another is a decision that must depend on the nature
of the data, along with theoretical concerns. I choose to utilize the discrete-time logit model, in which the dependent variable is dichotomous ( $0 / 1$ ) and data is organized into agency-years, each row constituting one year (Mills, 2011, p. 16).

The reason for this is twofold. First, parametric or semi-parametric event history models assume that the event history process is continuous, meaning that an event could happen at any point in time (Box-Steffensmeier, 2004, p. 69). While that is often the case in reality, data collection is rarely carried out with the same level of precision. Most of the time-varying covariate data utilized in this thesis, for example, have been gathered on an annual basis, meaning that their values can only change once a year. This would result in heavily tied data if parametric or semi-parametric survival models (such as the Cox model) are chosen (Broström, 2015, p. 22). Moreover, the dependent variable is measured quite imprecisely, and the supplied start and end dates are unreliable (see section 3.3.3 below for more details). Secondly, having a continuous measure of time is likely not of great importance here. Structural reform is not something that occurs overnight; even if the data were continuous, changes from one day to another would likely be miniscule and untraceable. Dealing with time units of years, not days, seems more appropriate.

Discrete-time models differ slightly from continuous-time models. For example, the dependent variable in continuous-time models is the hazard rate, meaning the rate at which units experience "failure." In discrete logit models, the dependent variable is the odds of a certain event occurring (Mills, 2011, p. 181). The dependent variable is not duration time, but whether or not a given event has occurred at a certain point in time. In the words of Mills (2011, p. 182), the dependent variable "models the risk or probability that an event occurs conditional on survival and covariates to some time $t$." This method yields the same information as duration time, and accounts for right-censored observations (Box-Steffensmeier, 2004, p. 70). ${ }^{1}$

For most intents and purposes, the discrete-time model used here performs exactly like a logit model, and the coefficients can be interpreted similarly. This is an advantage over the Cox model, in which results are harder to interpret. Using the discrete-time model also means that temporal dependency within the data must be accounted for, given the panel structure of the data. This can be done either through the use of time dummies, splines or polynomials (Box-Steffensmeier, 2004,

[^12]p. 75; Beck, Katz \& Tucker, 1998). I have opted for cubic polynomials, which adds $t$, $t^{2}$ and $t^{3}$ as regressors - $t$ denoting the time unit, which in this case are years. Polynomials are chosen because they in many cases perform better than time dummies, and are usually just as effective as splines in accounting for temporal dependency (Carter \& Signorino, 2010).

### 3.2 Data

The dependent variable of this thesis, structural reform, is based on data from the Norwegian State Administration (NSA) database. The NSA contains data on changes in almost all public organizations within the Norwegian central state administration between 1947 and 2016, central agencies included. In addition, it contains information on when these agencies were established and terminated, as well as the dates at which their organizational structure underwent a structural change (such as name revisions, reorganizations, location changes, foundations, terminations, mergers and splits). In other words, we have sufficient information to map the conception and death of these organizations, as well as any changes occurring throughout their life cycle.

Internationally speaking, this database is quite unique. Compared to most other countries, Norway's formal government structure is well documented through the Norwegian Government Yearbook, which is the main data source of the NSA (Rolland \& Roness, 2010, p. 471). Development of the database as well as coding of the data material has been undertaken by the same persons from beginning to end, leading to a high degree of consistency over time and increased reliability (Rolland \& Roness, 2011, p. 785).

Using the NSA data - which only consists of one observation per organizational change - I have constructed a novel data frame ${ }^{2}$ which follows a panel data structure. It only includes observations occurring between January 1st 1980 and the 31st of December, 2014. 1980 is chosen as a starting year, since the early 80s have been identified as the time when Norwegian administrative policy grew into a fullfledged policy area, characterized by high stakes and political pressure (Lægreid \& Pedersen, 1994, p. 10; Christensen, 1998, p. 30). It thus marks a natural point of departure for the purposes of this thesis. Ending the observation period in 2014 is purely for pragmatic reasons, and determined by the availability of data.

[^13]| Organization <br> ID (NSA) | Year | Founding | Termination | Organization <br> age |
| :---: | :---: | :---: | :---: | :---: |
| 7665 | 1998 | 1 | 0 | 1 |
| 7665 | 1999 | 0 | 0 | 2 |
| 7665 | 2000 | 0 | 0 | 3 |
| 7665 | 2001 | 0 | 1 | 4 |
| 13200 | 1996 | 1 | 0 | 1 |
| 13200 | 1997 | 0 | 1 | 2 |

Table 3.1: Illustration of the panel data structure.

The dataset is divided into agency-years, with one observation or row for each year the organization has existed after 1947. As mentioned in section 3.1, this structure is necessary in order to run a discrete survival model. In any given year, the dependent variable will either be coded as 1 (meaning that an event has occurred) or as 0 (meaning that no event has occurred). Table 3.1 illustrates the structure of the data by showing the lifespans of two small and relatively shortlived agencies, The Justice Sector's Coordination Unit for Information Technology (ID number 13200), and The Agency for Council Secretariats in Social and Health Policy (ID number 7665). ${ }^{3}$ Both agencies enter the data frame on being founded, and exit it if they are terminated.

Furthermore, organizations are only part of the data frame when they are defined as agencies. If their agency status is changed, the organizations are removed from the data frame. Statskonsult, for example, is not present in the data frame in 2004, 2005 and 2006, since it was briefly made into a state company during these years (before its agency status was restored in 2007). ${ }^{4}$

The constructed data frame includes information about the lifespan of each included organization. However, not all organizations can be treated equally in the analysis, and some methodological issues must be discussed. Some agencies have lived and died within the observation period, meaning that we have complete information about their fate. Others were born before the onset of the observation period in 1947, which means that we have no information about any events happening to them prior to that year. This is also known as left-truncation, meaning that the unit has an unknown history (Mills, 2011, pp. 6-7).

Finally, some agencies are still alive and well, and have not been terminated.

[^14]However, that does not preclude the possibility that they could be terminated in the future. This is known as right-censoring, which means that a unit has not yet experienced an event, and remains at risk (Box-Steffensmeier, 2004, p. 16). ${ }^{5}$ In other words, the data is characterized by right-censored as well as left-truncated observations. There are four kinds of organizations, as expressed by table 3.2 and figures 3.1 and 3.2.

|  | Created <br> prior to 1980 | Created <br> after 1980 |
| :---: | :---: | :---: |
| Terminated | Type B: <br> Left-truncated | Type D: <br> Complete <br> observation |
| Not terminated | Type A: <br> Left-truncated and <br> right-censored | Type C: <br> Right-censored |

Table 3.2: Organizational types and their associated truncation/censoring.

Left-truncation and right-censoring can generate systematic biases in the data when using traditional linear regression models like the OLS model. For example, the OLS model does not distinguish between uncensored and right-censored observations, and will treat them equally. This is highly problematic, as the resulting parameter estimates may be misleading and result in an erroneous depiction of the relationship between the covariates and the dependent variable. Similarly, left-truncated observations will be seen by OLS models as having entered the observation period at the same time as non-truncated observations. It simply does not account for the unit's preexisting, unknown history. This might result in parameter estimates that are either understated or overstated, increasing the risk of committing both type I and type II errors (Box-Steffensmeier, 2004, pp. 16-17).

Figure 3.2 indicates that out of the 145 unique agencies that have existed since 1980, 113 are associated with either right-censoring, left-truncation, or both. In other words, there is a high potential for bias, and these characteristics must be taken into account. This speaks in favor of utilizing a survival model.

[^15]

Figure 3.1: Organizational types and their associated truncation/censoring.


Figure 3.2: Frequencies of different organization types (1980-2014).

### 3.3 Identifying structural reform

The dependent variable, structural reform, was theoretically defined in section 1.4.2 as a significant change to the structure of an organization. However, a more thorough discussion of what it entails in practice is necessary. Rolland and Roness $(2010,2011)$ describes the NSA as made up of three main types of changes: foundings, maintenance changes and terminations. These types are in other words divided temporally along the three phases of the organizational life cycle - birth, transformation and death.

Not all these changes should be included under the structural reform umbrella, however. The phenomenon in question consists of significant and structural changes, and some of the organizational changes recorded in the NSA are neither. An overview of the changes defined in this thesis as structural reform can be found in table 3.3. Changes listed under the category called "other changes" are excluded from the structural reform umbrella. For example, name changes and location changes are disregarded. While they are probably often enacted due to political and symbolic concerns, these changes are not related to the structure of the agency per se. Such changes also seem to mean little for the modus operandi of the organization, and thus hardly qualify as "significant" changes (see Egeberg and Trondal, 2011 or Kiland and Trondal, 2010 for a discussion of the effect of relocations in Norway). For these reasons, name and location changes are not considered to be relevant components of structural reform. Furthermore, changes to the agency's superior unit or location within a group of units (horizontal changes) are also omitted. In addition to not being inherently structural, they are often connected to structural changes outside of the agency, and frequently coincide with other changes such as mergers, absorptions and so on.

Foundings are also disregarded. A case could be made that such changes are significant, and it seems fair to consider birth and deaths to be of equal importance. Foundings will nevertheless be excluded from this thesis, being primarily concerned with the lifespan of living agencies as well as why they perish. In any case, an analysis of foundings would preclude the inclusion of variables connected to organizational stickiness. A low age would obviously be perfectly correlated with foundings, which is not a very insightful observation at all.

Vertical movements and changes in form of affiliation are a slightly different story, and during the construction of the data frame a particular coding rule was followed. Form of affiliation denotes the status of the organization, i.e. whether
or not the organization is an agency, state company or ministerial unit. Some organizations start out as ministerial units, and are later seceded from the ministry and turned into agencies. In such cases, the organization is only entered into the data frame upon becoming an agency, and this event is coded as a "foundation by secession." Similarly, agencies that are absorbed into ministries or turned into state companies are removed from the data frame from that point moving forward, and this event is classified as "terminations by absorption" in cases of ministerial absorption, and "terminations by reorganization" in cases of privatization.

The Norwegian Agency for Development Cooperation is a good example. The agency was absorbed into a newly created Ministry of Development in 1984, only to be seceded from it again in 1990. In other words, the agency is coded as terminated in 1984 and re-founded in 1990, while the observation years of $1985,1986,1987$, 1988 and 1989 are removed from the data frame. This means that the number of changes called "new superior organization/level" and "new form of affiliation and level" listed in table 3.3 are much lower than in the original NSA data, as such changes have been recoded into either foundings or terminations.

Since some of the changes listed under "maintenance" are excluded, the category is relabeled as "reorganizations." We are now left with a three-fold dependent variable (which corresponds with figure 1.1 on page 9 ):

- Structural reform, a dichotomous variable which is coded as 1 if an agency is either reorganized or terminated in a given year.
- Reorganization, coded as 1 if an agency is reorganized in a given year.
- Termination, coded as 1 if an agency is terminated in a given year. ${ }^{6}$

[^16]
## Structural reforms ( $\mathrm{N}=162$ )

| Structural reforms ( $\mathbf{N}=162$ ) |  |  |
| :---: | :---: | :---: |
| Reorganizations ( $\mathbf{N = 8 0}$ ) | Terminations ( $\mathrm{N}=82$ ) |  |
| Maintenance by secession ( $\mathrm{n}=11$ ) | Pure terminations ( $\mathrm{n}=8$ ) |  |
| Maintenance by absorption ( $\mathrm{n}=15$ ) | Terminations by absorption ( $\mathrm{n}=9$ ) |  |
| Maintenance by reorganization ( $\mathrm{n}=54$ ) | Terminations by reorganization ( $\mathrm{n}=17$ ) |  |
|  | Terminations by merger ( $\mathrm{n}=48$ ) |  |
| Other changes ( $\mathrm{N}=275$ ) |  |  |
| Miscellaneous ( $\mathbf{N}=163$ ) | Moving ( $\mathrm{N}=33$ ) | Foundings ( $\mathrm{N}=79$ ) |
| Change of superior unit ( $\mathrm{n}=108$ ) | Movement into/out of organization ( $\mathrm{n}=9$ ) | Regular foundings ( $\mathrm{n}=27$ ) |
| Location change ( $\mathrm{n}=10$ ) | New superior organization/level ( $\mathrm{n}=1$ ) | Foundings by secession ( $\mathrm{n}=14$ ) |
| Name change ( $\mathrm{n}=45$ ) | New superior organization ( $\mathrm{n}=23$ ) | Foundings by splitting ( $\mathrm{n}=1$ ) |
|  | New form of affiliation and level ( $\mathrm{n}=0$ ) | Foundings by merger ( $\mathrm{n}=19$ ) |
|  |  | Foundings by reorganization ( $\mathrm{n}=18$ ) |

Table 3.3: An overview of organizational changes counted as structural reforms - "Other changes" are excluded. Labels have been slightly adapted from the categorizations of Rolland and Roness (2011), and only changes that have occurred after 1980 are listed. The N for "New superior organization/level" and "New form of affiliation and level" is artificially low; they have for the most part been recoded into additional foundings and terminations.

### 3.3.1 The nuances of structural reform

Some elaboration on the meaning of certain concepts in table 3.3 is useful. For example, what is the difference between an absorption and a merger? Figures 3.3 and 3.4 illustrate the nuances between them. Absorptions mean that a large organization is maintained, while smaller units are incorporated into its existing structure. On the other hand, a merger is characterized by joining together several equal units, resulting in an expanded organization (Rolland \& Roness, 2011, p. 406). Secessions mean that the root organization will continue to exist, but one or more sub-units become independent. Splitting entails that an existing organization is terminated in its current form, being replaced by several smaller units. The highest potential for complexity, however, can be attributed to reorganizations (figure 3.3). In the wake of such events it can be hard to identify any resemblance between new and old units, which essentially means that one reorganization may manifest itself in the data as both multiple terminations and foundations.


Units A, B, C: Terminated by complex reorganization
Units D, E, F: Founded by complex reorganization
Figure 3.3: How complex reorganizations affect organizations. Adapted from Rolland and Roness (2011, pp. 405-406).


Figure 3.4: How absorptions, mergers, secessions and splitting affect organizations. Adapted from Rolland and Roness (2011, pp. 405-406).

### 3.3.2 The problem of concurrence

Apart from shedding light on the nuances of organizational change within the government, figures 3.3 and 3.4 also introduce a somewhat tacit problem; organizational changes are rarely isolated occurrences. This clearly represents a methodological challenge for a discrete event history model. What is in reality one event will be interpreted by the model as several completely isolated, separate events. Mergers and absorptions, for example, involve multiple organizations concurrently, and events will in these cases be separately recorded for each one. When changes involve multiple organizations, there is a risk that the event count for that given year will be artificially inflated. This means that certain observation years could exercise an undue influence on the model, biasing the coefficients in unpredictable directions. For example, in 2001 eight agencies were absorbed into the newly established Directorate of Health. This wider reform boosted the total number of terminations in 2001 to 12, a record year. As a result, the value of independent variables in 2001 have a high influence on the regression coefficients.

Unfortunately, there are few remedies to this problem. Identifying changes that are connected and making sure that only one of the events are counted, is not a viable fix for a number of reasons. First, mapping such changes would be a massive and time-consuming, qualitative research endeavor, which clearly goes beyond the scope of this thesis. Second, deciding which event to count would no doubt be an arbitrary choice, which runs the risk of introducing bias to the data regardless of how the choices are made. Third, removing events from certain rows would not make much sense in this context. Survival models are primarily interested in the fate of individual units, be it persons, wars or organizations. The removal of events would be an unjustifiable manipulation of reality. The best solution is to be aware of this problem, and perform rigorous robustness tests. Specifically, it should be checked whether certain observation years are particularly influential, and if coefficients change upon omitting them from the analysis.

### 3.3.3 The problem of precision

The NSA data provides an overview of all organizational changes throughout Norway's recent history. As referenced in the previous section, it contains the date at which these changes enter into force. However, the time at which the actual decision was made remains unknown, and this would be a preferable measure. This
thesis is, after all, primarily interested in the inputs and determinants of change, and these inputs may very well change in the time that passes between decisionmaking and implementation. In other words, the measurement of structural reform is slightly imprecise.

How is it possible to be sure that there is a time discrepancy between implementation and decision-making? Figure 3.5 illustrates the existence of a somewhat peculiar tradition within Norwegian administrative policy, which makes structural reforms "clustered" around two months in particular. The overwhelming majority of terminations are set to take effect on the 31st of December, meaning that the organization in question will cease to exist upon entering a new year. Reorganizations and foundings, on the other hand, are normally set to come into force on the 1 st of January. There is little reason to believe that decisions are clustered along a similar pattern, and if decisions were mapped in a similar fashion, the distribution would likely be flatter.

This imprecision complicates the choice of lag lengths on the independent variables. More importantly, it will sometimes mean that events are placed in "wrong" years. Unfortunately, correcting this problem necessitates knowledge of the average time between decision and implementation. To the author's knowledge, no studies have been carried out on this subject. In part, this is likely due to large variation. Some changes probably require further advance notice than others, and the time between decision and implementation is presumably connected to the scope of the changes. In other words, it might be hard to outline a meaningful pattern, which again makes it complicated to find a solution.

In any case, in circumstances where agencies are reorganized in January, it seems fair to say that the decision was made in the previous year. For this reason, I will code reorganizations as happening one year earlier than the NSA data suggests (this is also known as leading). Terminations are trickier. Some recent examples could perhaps prove to be an indication. The Agency for Emergency Communication, for example, was terminated on the 1st of March 2017, with an announcement made four and a half months prior. The National Collection Agency was absorbed into the Norwegian Tax Administration on the 1st of January 2014, while the announcement was made nine months earlier. There are probably examples of intervals that are both longer and shorter, but it seems reasonable to say that most decisions to terminate are made in the same year. Consequently, terminations remain unchanged.


Figure 3.5: Number of changes by month.

### 3.4 Building a data frame

The data frame utilized by this thesis was constructed from scratch. The organizational data provided by the NSA consisted of one observation per organizational change since 1947, which made up total of 623 observations (organizational changes) on 182 unique agencies. Since the data frame contained the beginning and end date of each organization, it was possible to use the eha package in R (Broström, 2015) to construct a data frame consisting of one row per year in each organization's life span (after 1947), which resulted in a total of 4540 observations. Separate dichotomous variables were then created for each type of organizational change, and the NSA data were merged with the main dataset. In 40 cases, organizations were subjected to more than one change in a given year, resulting in duplicate rows. They were manually combined into one row, making sure that
each organization only appeared once per year. Finally, observations recorded before January 1st 1980 and after the 31st of December 2014 were removed from the data frame, resulting in a final dataset that consisted of 2515 observations and 142 unique agencies.

As is natural for any large and complex database, the NSA data contained some inaccuracies (albeit very few). After a manual review of the data, during which I cross-checked the supplied list of organizational changes with the detailed event history that is listed for each unit on the NSA's web site, some inconsistencies in the data were discovered and corrected. ${ }^{7}$ In a few cases, the foundation and termination dates were listed as having occurred one year later or earlier than was actually the case.

The majority of inconsistencies, however, concerned changes of superior unit. Most inconsistencies seem to have been caused by the fact that, if a unit momentarily loses its agency status or starts out as a ministerial unit, organizational changes would not be listed in the NSA data frame until it attains agency status again. If the organization's superior unit changed while it was not an agency, the constructed data frame "loses track" of the organization's superior unit. Since this information was vital in order to code the ministerial variable (see the section 3.5.2 for more details), a comprehensive and time-consuming review of each agency's superior unit history was performed, making sure that the superior unit of each agency corresponded with the correct ministry in a given year.

### 3.5 Operationalization of independent variables

In section 3.3, I discussed the dependent variable, the elusive concept called structural reform, and outlined how it is measured. The independent variables are of equal importance, however, and in order to test the hypotheses generated in the previous chapter it is necessary to operationalize the theoretical concepts contained within them. Finding a reasonable empirical measure of theoretical constructs is an essential part of any research process, and decisions to choose one operationalization over another can have a substantial impact on the empirical results (Adcock \& Collier, 2001). I will therefore attempt to be as thorough as possible in outlining my reasons behind choosing these operationalizations.

[^17]| Variable name | $\mathbf{N}$ | Type | Mean | St. dev | Min | Median | Max |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Structural reform | 2515 | Dichotomous | 0.062 | 0.241 | 0 | 0 | 1 |
| Reorganization | 2515 | Dichotomous | 0.029 | 0.170 | 0 | 0 | 1 |
| Termination | 2515 | Dichotomous | 0.032 | 0.177 | 0 | 0 | 1 |
| Government turnover (L1+2) | 2515 | Dichotomous | 0.559 | 0.496 | 0 | 1 | 1 |
| New minister (L1+2) | 2231 | Dichotomous | 0.721 | 0.448 | 0 | 1 | 1 |
| Income/expenditure balance (L1) | 2446 | Continuous | 9.497 | 7.465 | -2.369 | 7.602 | 26.450 |
| Minority coalition | 2515 | Dichotomous | 0.222 | 0.416 | 0 | 0 | 1 |
| Majority coalition | 2515 | Dichotomous | 0.293 | 0.455 | 0 | 0 | 1 |
| Minority single-party | 2515 | Dichotomous | 0.483 | 0.499 | 0 | 0 | 1 |
| Geographic dispersion | 2515 | Dichotomous | 0.317 | 0.465 | 0 | 0 | 1 |
| Age | 2515 | Count | 31.530 | 33.69 | 0 | 19 | 168 |
| Size (FTEs) | 2007 | Numeric | 135.575 | 189.8 | 1 | 75 | 1993 |

Table 3.4: Summary statistics of all variables. Variables with (L1) have been lagged one year, while (L1+2) indicates a lag of one and two years. Distributions for all variables can be found in the appendix, in figure A. 1 and forward.

### 3.5.1 Government turnover

Political turnover is a variable that has been included in numerous studies on organizational termination (Boin et al., 2010; Carpenter \& Lewis, 2004; James et al., 2016; Lewis, 2002; Lewis, 2004; O’Leary, 2015; Park, 2013). For example, James et al. (2016) measure it as a change in governing party, which is natural in the case of the UK where power (and policy) has shifted between the Labour Party and the Conservative Party quite regularly in recent decades. In the case of the US, Lewis (2002) measures turnover as either a change in the party controlling Congress or the White House, while Park (2013) sees political turnover in South Korea as occurring when the a new president enters into office.

In other words, it is evident that the operationalization will depend on the country's political system, and the nature of the executive government. In Norway, it seems reasonable to code government turnover as 1 in years when a cabinet headed by a new Prime Minister assumes power, and 0 when nothing has happened. This is not because the Prime Minister's influence is seen as particularly important (as explained in section 1.5.2 the role of the Prime Minister is in fact quite weak, formally speaking). However, a new cabinet entering into office usually involves the appointment of new ministers and the formulation of fresh policies and priorities. And perhaps more importantly, new governments likely feel a need to demonstrate their capability to act, and move swiftly to secure a legacy.

This means that even when the party in power did not change and there was no election, such as when Thorbjørn Jagland succeeded Gro Harlem Brundtland as Prime Minister after she stepped down in 1996, the government turnover variable is coded as 1 . In addition, the expansion of the Willoch I government in 1983, which resulted in a coalition between the Conservatives and two other parties, is also coded as government turnover occurring although there was no change of Prime Minister. This case is treated as an exception, since it is the only government that turned into a coalition while in power, and this more than likely had an influence on the government's priorities. In any case, it could have introduced a new dynamic to the way cabinet decisions are made. Outside of these two cases, the coding is relatively straightforward. If a government is re-elected, the variable is not coded as 1 .

The data was collected from the web site of the Norwegian Centre for Research Data (NSD, 2017a), where all governments throughout Norway's history and their entry/exit dates are listed. The information was entered into a separate spreadsheet that contained one row per year ( 35 in total). This was later merged with the main dataset by year. In total, government changes were recorded in 1981, 1983, 1986, 1989, 1990, 1996, 1997, 2000, 2001, 2005 and 2013.

## Determining an appropriate lag

Decisions are not made the day after an election, however, and they are rarely (if ever) implemented instantly. As explained in section 1.5.2, Norway is a country where "revolutions are conducted in slow-motion." Usually, major changes are reviewed and debated at length, and emphasis is put on considering their consequences thoroughly before decisions are made. Furthermore, as seen in section 3.3.3, the problem of precision means that we have no accurate measurement of decision-making. Thus, the variable needs to be coded in a fashion that accounts for both the time needed to make the decision, and the time needed to implement it.

One possibility would be to lag the variable either one or two years. However, the circumstances call for a larger time span than one year. While these assumptions are not empirically founded, figure 3.6 illustrates my assumption that any government would most likely require at least three months to reach a decision, and another three months to implement it. Since the majority of Norwegian gov-
ernments since 1980 have entered into office in October, ${ }^{8}$ when elections are normally held, the variable should be lagged 1 year at a minimum. I also assume that many structural reforms will be implemented much slower than that, and that both decision-making and implementation can take up to 12 months each. This means that it could take up to two years before thought is translated into an observable termination. For this reason, I have made two variables that are lagged 1 and 2 years respectively, and combined them into one. The final variable is thus coded as 1 both in the year after a change of government, and in one subsequent year.

199719981999
Enters office Year 1 after election
Year 2 after election
October January April July October January April July


Earliest possible structural reform
3 months 3 months

Slowest possible structural reform
3 months 3 months 3 months 3 months 3 months 3 months 3 months 3 months
= Decision-making
= Implementation
Figure 3.6: A hypothetical trajectory of slow and fast structural reform.

Coding the variable in this manner has several drawbacks. For example, the discrete nature of the data means that the period between July and December in the second year of a government will also be coded as 1 , although politically motivated structural reforms are not expected to happen after 24 months have passed. Another drawback is that the number of 1 s is almost doubled (from 889 to 1407). There is a risk that this could over-determine the model, sometimes leading it to predict structural reform in multiple consecutive years. For example, the variable will be coded as 1 almost continuously between 1982 and 1988, due to three changes of government between 1981 and 1986. On the one hand, it is unclear how insightful this over-saturation really is, and it is admittedly based on some speculative assumptions. On the other hand, it seems reasonable from

[^18]a theoretical standpoint to expect a time period of governmental volatility to be characterized by a higher frequency of structural reforms.

### 3.5.2 Change of responsible minister

Very few studies on termination have been conducted in political systems in which the responsible minister is given much emphasis. James et al. (2016) is an exception, and here ministerial turnover is coded as 1 if a new minister is appointed to a ministry. It seems fairly straightforward and uncontroversial to apply this operationalization to Norway.

In order to code this variable as accurately as possible, I had to obtain a complete overview of all ministerial changes since 1980. Thankfully, Søyland (2015) has already collected an excellent dataset of all Norwegian ministers since 1945, which simplified the data collection substantially. ${ }^{9}$ However, this data only contained the ministers' title and jurisdiction (e.g. Minister of Fisheries). Based on the NSA's overview of Norwegian ministries per year (NSD, 2017b), I therefore constructed a separate data frame, and the 255 ministerial changes supplied by Søyland were manually matched with the organizational ID number of the ministry they were in charge of (on the 1st of January each year). This made it possible to tie ministerial changes to individual agencies through the ID number of the agency's superior unit (which was also manually collected, as discussed in section 3.4).

If at least one new minister was appointed to a ministry in a given year, the variable was coded as 1 . In total 1138 observations were coded as 1 . The variable was also coded as 1 if the individual in question had previously been in charge of that ministry, but temporarily replaced. For example, Thorvald Stoltenberg was appointed as Foreign Minister in 1987, and left office when the Brundtland II cabinet was ousted by the Syse cabinet. When the Syse cabinet stepped down in 1990 due to internal dispute, the Brundtland III government entered office, and Stoltenberg was re-appointed as Foreign Minister. In this case, changes in minister were recorded for the Foreign Ministry in 1987, 1989, and 1990. If the government changed, but the minister remained as head of the ministry, no change was registered.

One issue stems from the fact that several ministries have had more than one

[^19]minister at the same time. For example, both the foreign affairs and trade portfolios were located under the Ministry of Foreign Affairs and Trade from 1987 to 1996, and thus had one minister per portfolio. If only the foreign minister was replaced, a change in minister would be recorded for all agencies under the Ministry of Foreign Affairs and Trade, even agencies operating under the trade portfolio. Strictly speaking, this is not an entirely correct specification. However, manually correcting such errors would be an incredibly time-consuming task. It was considered not worth the trouble since very few ministries in Norway's history have had more than one minister. Moreover, it would only be a problem if just one of them are replaced in a given year, and there are likely few cases where this has happened.

The lag is handled in the same way as the government turnover variable, as the same considerations apply here as well. In other words, the variable is coded as 1 for two consecutive years after there has been a change of minister. The same drawbacks also apply here.

### 3.5.3 Attributes of the government

As has been reiterated upon multiple occasions already, studies of termination have for the most part been carried out in majoritarian political systems. As such, the importance of government characteristics has not yet been examined empirically, apart from Lewis (2002), who investigated the effect of unified government (meaning that one party controls Congress and the White House). In other words, this is a highly exploratory variable. While its theoretical foundations might not be as established as the other variables, it is nevertheless highly interesting to see whether government type matters.

The coding of this variable is fairly straightforward. Governments holding a majority in Parliament as well as consisting of two parties or more, are classified as majority coalitions. Minority governments with one party are coded as a minority single-party governments, while minority governments with more than one party are coded as minority coalitions. They are added to the models as dummy variables, with minority coalitions being the reference category. Minority coalitions are, as explained in section 2.1.2, expected to be more likely to institute structural reform than majority coalitions, but less likely than single-party governments. Having it as the reference category thus makes it easier to test the hypotheses.

One particular coding rule was followed. Several years have seen more than
one government. However, the discrete structure of the data only allows the specification of one government type per year. In other words, if a majority coalition is replaced by a minority coalition, two coding alternatives exist. In order to avoid an arbitrary solution to this problem, government type is based on the government serving the longest in any given year. For example: If a minority single-party government replaces a minority coalition in October 1984, the government type of 1984 is coded to be "minority coalition." This solution also removes the need for lagging the variable, since government type only will be counted if the government is sitting for 6 months or more - which is within the previously mentioned minimum time frame for structural reform.

### 3.5.4 Fiscal pressure

Fiscal pressure can be operationalized in many ways, and this is reflected by the diverging choices made by other authors. James et al. (2016) measure fiscal pressure as the overall amount of government spending, while Carpenter and Lewis (2004) as the real budget surplus (in billions of dollars). Greasley and Hanretty (2014) argue that fiscal pressure is best represented by government debt as a percentage of GDP.

For my analysis, I operationalize fiscal pressure as the relationship or balance between government revenue and government expenditure. Figures for the central government's total revenue and expenditure between 1980 and 2014 were collected from Statistics Norway's web site. ${ }^{10}$ These figures were then divided by the GDP of mainland Norway and multiplied by 100 , in order to express them as a percentage of GDP and thus adjust for inflation. In other words, a value of 0 indicates perfect balance between income and expenses, negative values indicate higher expenses than income, and positive values indicate a revenue surplus. The variable is lagged by one year, in order to allow for some reaction time.

### 3.5.5 Age

Age is measured as the number of years since the agency was established, and divided into four categories based on the hypotheses in section 2.2.1:

- 0-5 years old

[^20]- 6-10 years old
- 11-30 years old
- 31 years or older
"0-5 years" is chosen as the reference category.


### 3.5.6 Size

The size of the organization will be measured in number of employees, more specifically as full-time equivalents (FTEs). The number of FTEs provide an indication of workload rather than the number of people employed at the organization, making it easier to compare organizations. The majority of the data was generously provided by the NSA. Unfortunately, employee statistics has only been reliably collected since 1992, and the provided data frame only included observations from that year going forward. However, for certain agencies employee data can be found all the way back to 1980 on the NSA's web site.

In order to examine the viability of FTE data before 1992, the data was manually collected from the NSA web site. Unfortunately, it was found to have substantial weaknesses. The total number of valid observations was admittedly boosted from 1497 to 2007, but figures 3.7 and 3.8 reveal that the data is quite uneven. Figure 3.7 shows that the majority of agencies have missing observations before 1993. While some variance in the amount of missing observations between years is inevitable, figure 3.8 shows that there likely is a systematic pattern as to which agencies have complete data. The median is very low until 1993, after which it more than doubles. This likely means that larger organizations are underrepresented until 1993 (when the more accurate data collection started).

The 117 missing observations after 1993 are also a problem. These cells are not necessarily problematic if their values are missing completely at random (Allison, 2009), but this might not be the case. Out of the 54 terminations that have occurred between 1993 and 2014, 10 have occurred in agencies for which FTE data was missing. In other words, the number of 1 s in the dependent variable is reduced by $18.5 \%$, when only 117 out of 1520 observations have missing values ( $7.6 \%$ ). This could indicate a systematic bias in favor of durable agencies, which could result in skewed coefficients.


Figure 3.7: Proportion of missing observations by year.


Figure 3.8: Number of median employees by year.

That is not to say that the data is entirely useless, however. Only 13 agencies have absolutely no employee data, while 73 agencies have complete data. Figure 3.9 illustrates that the remaining 56 agencies are relatively evenly distributed between these two outer limits. In any case, $60 \%$ of all agencies have at least 90
\% non-missing values. In other words, the data is more complete than it seems at first glance. This means that we have a rough idea of how large agencies are even in years when values are missing - which provides the opportunity to fill in the data gaps, and even "extend" the data backwards in time. This is also known as imputation. In this case, the imputation will be based on an estimation of the median amount of FTEs per agency (calculated from all valid observations of that agency). Each agency is then put into a group on the basis of this median value. Since agencies can grow over time, the selected categories are relatively large, in order to increase the likelihood of placing them in the "correct" category for a given year. The five, relatively even-sized, categories are:

- Fewer than 20 FTEs
- 20-69 FTEs
- 70-139 FTEs
- 140-249 FTEs
- More than 250 FTEs


Figure 3.9: Percentage of missing observations per agency.

This data imputation has some few drawbacks. The median estimate will, for example, not be representative for agencies that grow a lot in short periods of
time, and such growth could involve a change in risk of termination which will not be picked up by using this method. In other words, it constricts the degree of variation. Furthermore, agencies with very few valid observations will likely be ascribed a median that is inaccurate compared to the real median. Perhaps more troubling, is the fact that there is no foolproof way to tell whether the imputed cells are an accurate representation of reality - since the real value is unknown.

We can use the existing data to get some idea of its accuracy, however. Table 3.5 compares the grouped variable based on the complete data (the old group) with the variable based on the median estimates (the imputed variable). $79 \%$ of the observations are put in the correct group, while $21 \%$ "miss" the true category. 10 $\%$ of the observations are placed one category higher than where it actually belongs, while $9 \%$ are downgraded one category. In other words, it is relatively accurate, but that is not necessarily surprising - given that the table only maps observations for which we know their real value, and the median is based on these data. There is no way to know whether the constructed value corresponds with the missing values. However, it seems fair to assume that it will overestimate the size of the agencies rather than underestimate them, since most of the valid data is recent, and the agencies will likely have grown over time.

Figure 3.10 and 3.11 provide some arguments in favor of imputation. Figure 3.10 shows that the number of missing observations is substantially reduced by using median estimates, which increases the number of observations by almost 800 . Figure 3.11 shows that the inclusion of manipulated cells has not really altered the numbers after 1993 in figure 3.7 in any significant way, and this is a good sign. The spike in 1993 in figure 3.8, which indicated systematic missing observations in the first place, is no longer present. However, it should again be emphasized that there is no way to tell whether the median number of FTEs before 1993 reflects reality, and there is a risk that this figure is an inaccurate depiction.

|  | Old group |  |  |  |  |  |
| :--- | :--- | :---: | :---: | :---: | :---: | :---: |
|  |  | Fewer than 20 <br> employees | $20-69$ <br> employees | $70-139$ <br> employees | $140-249$ <br> employees | More than 250 <br> employees |
| New group | Fewer than 20 employees | $25 \%$ | $2 \%$ | $0 \%$ | $0 \%$ | $0 \%$ |
|  | $20-69$ employees | $3 \%$ | $17 \%$ | $2 \%$ | $0 \%$ | $0 \%$ |
|  | $70-139$ employees | $0 \%$ | $1 \%$ | $12 \%$ | $3 \%$ | $0 \%$ |
|  | $140-249$ employees | $0 \%$ | $0 \%$ | $2 \%$ | $11 \%$ | $2 \%$ |
|  | More than 250 employees | $0 \%$ | $0 \%$ | $0 \%$ | $4 \%$ | $14 \%$ |

Table 3.5: Comparison of imputed (median) variable versus the "real" variable.


Figure 3.10: Proportion of missing observations by year (after imputation).


Figure 3.11: Number of median employees by year (after imputation).

These methodological concerns should be taken very seriously, although they do not necessarily render the data completely unusable. Two competing concerns are at play here. On the one hand, a higher N can enhance the statistical and predictive power of the model. On the other hand, there is a very real risk that
the model estimates will be biased by the inclusion of the imputed FTE data. For this reason, I will estimate the models both with and without the size variable. In addition, I will use two alternative measures for size. One will be based on the median estimates and include all observations, while another will be based on the original FTE data and only include observations between 1993 and 2014. Finally, and perhaps most importantly, considerable sobriety will be involved during the interpretation of models where the size variable is included.

### 3.5.7 Geographic dispersion

To the author's knowledge, geographic dispersion has not been included in any other studies of organizational termination. In Chapter 2, geographical dispersion was defined as whether the agency had offices in more than one location. In order to measure this, I use the NSA's previously mentioned employee statistics. This database contains two types of employee numbers; the number of employees in the headquarters of the central organization, and the total number of employees in the agency plus other offices and underlying units (in Norway known as "etater"). If these numbers diverge in any year, indicating that the agency has underlying units, the variable will be coded as 1 for that agency's entire lifespan. All other agencies will be coded as 0 .

There are some apparent weaknesses by coding the variable this way. First, underlying units are not formally part of the agency per se, but subordinate to it. As such, the measure might be imprecise. However, this is not considered to be a significant problem, since having subordinate units likely means that the agency has a diverse portfolio of tasks, which requires the presence of an "etat" in several locations - meaning that the organization has a more diverse set of constituents (by proxy). Second, a 1 is ascribed to all observations of the agency if the employee numbers diverge at any point in time. This might lead to misclassification of agencies in years when they in reality do not have offices in other locations (yet). Third, the weaknesses surrounding the size variable also apply here. The FTE data only goes back to 1993, and agencies terminated before this year will be coded as 0 . Thus, the number of 1 s is likely artificially low.

## Chapter 4

## Empirical Results

This chapter introduces the empirical results of this thesis. I will first present descriptive statistics, which provide an account of the structural development of Norwegian agencies over time, as well as insights into how various Norwegian governments have made varying use of terminations and reorganizations as tools. The figures also illustrate the bivariate relationships between several variables. Second, I present the discrete survival regressions - six models with termination as a dependent variable, and six with reorganization as a dependent variable. Three models from each set are subsequently selected for robustness testing and diagnostics in the next chapter.

### 4.1 Descriptive statistics

Regressions enable us to understand complex dynamics and the interplay between different variables. However, there are other, easier ways of illustrating such relationships. Descriptive methods might be lacking in terms of nuance and inferential utility, but make up for these shortcomings through sheer simplicity. Another advantage of descriptive statistics is the fact that the NSA data goes all the way back to 1947 - allowing for time series analysis. The following figures show developments over time, as well as bivariate relationships between the dependent variable and a selection of the independent variables.

The results will be structured by change type; terminations first, and then reorganizations. Foundings will be included in some descriptive figures. As explained in section 3.3, foundings are not necessarily unimportant organizational changes, but fall outside the scope of this thesis. Their inclusion in some figures can, how-
ever, be useful for the sake of comparison - since they are very much the opposite of terminations. Furthermore, their inclusion is necessary to understand net growth of agencies.

### 4.1.1 Termination

## Time-series overview: Number of agencies

Figure 4.1 shows the development of Norwegian agencies over time. The height of the column indicates the total number of agencies for each year between 1947 and 2016. The upper section of the bars shows the number of agencies that are terminated throughout the year, the bottom the number of foundings, while the middle indicates the number of agencies that are unaffected. In 1947, there were 44 agencies, and in 2016 there were 62. A net growth of 18 agencies over a period of 70 years can hardly be described as explosive growth. However, the figure illustrates that the Norwegian agency population has fluctuated significantly between 1947 and 2016, revealing a history characterized by instability.

As the figure shows, terminations and foundings rarely affect a very large share of the agency population. In any given year, the vast majority of agencies remain unaffected. However, most years contain both foundings and terminations, which indicates a slow but steady process of agency replacement. As some agencies are terminated, new ones fill their place. This is hardly a surprise, since the definition of termination also includes agencies who perish due to mergers and absorptions, which would result in new organizations being a composite of several, previously separate agencies.

It should also be noted that this figure does not necessarily accurately depict the growing importance and prominence of agencies. For example, the number of employees in agencies has been more than doubled since the early 1950s (Grønlie \& Flo, 2009, p. 241), and figures 3.8 and 3.11 provide indications that the average size of these agencies has grown along with expanded portfolios (which can also be a result of the agency mergers inspired by post-NPM reform trends, as explained in section 1.5.1).


Figure 4.1: Number of agencies, terminations, and foundings by year (1947-2016).

A number of time-specific trends are also apparent from the figure:

- A period of long-lasting stability from 1947 to 1960, characterized by few overarching changes to government structure.
- Fast and steady growth between 1960 and 1973.
- Slow growth from 1977, culminating in an all-time high number of 83 agencies in 1991.
- A period of decline between 1992 and 2005, characterized by four extensive agency "purges" in 1992, 1997, 2001 and 2003.
- A time of remarkable stability and administrative inactivity between 2005 and 2016, the only historical parallel being 1947-1960.


## Time-series overview: Foundings, terminations and net growth

Figure 4.2 shows the number of foundings and terminations by year. Figure 4.3 shows the net growth of agencies, calculated as the number of foundings minus the number of terminations in a given year. Black vertical lines indicate a change of government. Both figures are displayed against a backdrop of government type.

Some of the observations from figure 4.1 are accentuated in both of these figures. For example, the four agency purges in 1992, 1997, 2001 and 2003 stand out in figure 4.2, and are even more prominent in figure 4.3. Apart from these four waves, terminations seem to be relatively evenly distributed and to occur quite regularly. The period after the entry of the Stoltenberg II government in 2005 is notable exception to this pattern. As previously mentioned, this era sees a remarkable degree of stability, and very few terminations and foundings over a long period of time. The strikingly high level of inactivity has been continued by the Solberg government from 2013. This could indicate the onset of a new phase within Norwegian administrative policy, characterized by reduced emphasis on top-down changes to agency structure. It is highly possible that 2003 marks the final wave of mass agency termination, and that agency volatility was a phenomenon which was limited to the Norwegian NPM era between 1992 and 2003.


Figure 4.2: Number of foundings and terminations by year (1947-2016). Terminations can be found below the zero line as negative values, while foundings are above it. Each black vertical line represents a change in government.


Figure 4.3: Net growth of agencies by year (1947-2016). Negative values (below the zero line) indicate a net decline in number of agencies, while positive values indicate positive growth. Each black vertical line represents a change in government.

## Government type

Figures 4.2 and 4.3 also reveal that there is no easily identifiable relationship between the number of terminations and type of government. Some observations are of significance, however. The closest thing to a pattern is represented by three purges in 1992, 1997 and 2001 - all committed by the Labour Party (Brundtland III, Jagland and Stoltenberg I cabinets) while being the sole party in office. This is in line with the expectations of hypothesis 3 c , which postulates that minority single-party governments are most likely to adopt structural reforms. Moreover, the fourth purge (in 2003) was instituted by the Bondevik II government, a minority coalition. This matches the expectations of hypothesis 3 b , which says that minority coalitions are less likely to adopt structural reforms than single-party governments.

Finally, the government characterized by the lowest degree of activity is the Stoltenberg II cabinet between 2005 and 2013 - a majority coalition. This is an observation which lines up with the expectations of hypothesis 3 a - in which it is theorized that majority coalitions will be least likely of all government types to pass reforms. Figure 4.4 supports these inferences, showing that there is considerable variation between government types and the organizational changes they prefer to make use of. Once more, the average number of terminations corresponds with the expectations of hypotheses 3a, 3b and 3c.

Unfortunately, while some observations in figures 4.2 and 4.3 correspond with some of the theoretical expectations, they are not pronounced enough to confirm the hypotheses with absolute certainty. In fact, other observations defy theoretical expectations. The Bondevik II government (2001-2005) might have been fairly active in terms of termination, but the Bondevik I (1997-2000) and Solberg (2013-) governments - also minority coalitions - have followed vastly different patterns. Similarly, there are few differences between the Willoch II (1983-1986) and Brundtland II (1986-1989) governments, although we would expect them to follow diverging modi operandi on the basis of their government type. And even in circumstances where the pattern seems clear, such as the relatively low activity during the Stoltenberg II majority coalition (2005-2013), it is impossible to know whether this is attributable to government type, circumstances unique to that government, or something else entirely. And the Willoch II government certainly did not shy away from terminations, despite being a majority coalition.

The fact of the matter is that there have been too few governments to be able to
draw general conclusions about the importance of government type. Norway has only had 14 governments since 1980, of which 6 were minority coalitions and only 2 were majority coalitions. As such, any pattern could be attributed to coincidence - or other circumstances. For example, the eagerness of the Brundtland III (1990-1996), Jagland (1996-1997) and Stoltenberg I (2000-2001) governments to terminate many agencies simultaneously, could simply be attributed to the Labor Party's gradual embrace of NPM reforms in the 1990s rather than actually being a manifestation of the ability of single-party governments to make quick decisions.

The variation between individual governments is clearly illustrated by figure 4.5. The left bar shows the total number of terminations instituted by each government while it is in office, while the right bar indicates the average number of terminations per year (a measure which accounts for the length of each government's tenure). The average number of terminations is especially high for two particular governments, Jagland and Stoltenberg I, which could be attributed to their relatively short tenures in office (one and two years respectively). The number of average terminations also tell a story of terminations as a trend, seeing as the average number of terminations gradually increased from the Brundtland III government (although with a notable dip under Bondevik I), reached a peak with Stoltenberg I, and has since decreased until present day.


Figure 4.4: Terminations by government type (1980-2016). Calculated by summing up the total number of terminations for each government type, dividing this total by the number of years each type has been in office.


Figure 4.5: Number of terminations by government (1980-2016).


Figure 4.6: Average number of terminations by government turnover (1980-2016).

## Government turnover

While it is hard to ascertain exactly how government type matters for the use of terminations, a more credible argument can be made for the importance of government turnover. The four agency purges in 1992, 1997, 2001 and 2003 all occur after a change in government. This is strong evidence in support to hypothesis 2 a , which expects termination to be more likely after a change in government. The observation is strengthened further by figure 4.6 , which shows that the average number of terminations is three times higher in the years immediately following a change in government compared to "normal" years. This average is, of course, boosted by the four previously mentioned agency purges between 1992 and 2003, but is nevertheless compelling evidence in favor of H2a. At the very least, it seems to indicate that the timing of terminations is not coincidental, and that governments prefer to carry out "waves" of terminations soon after coming into office.


#### Abstract

Age Figure 4.7 displays a plot of the Kaplan-Meier (KM) survival curve for all agencies. The y-axis, labeled "Survival function," shows the KM survival estimates, which express the estimated probability that an agency will survive to a given age. For example, at 20 years the KM estimate is 0.7 , meaning that the estimated probabil-


ity that an agency will survive 20 years or more is 0.7 , or $70 \%$ (Mills, 2011, p. 72). In other words, 70 per cent of agencies live to be more than 20 years old.


Figure 4.7: Kaplan-Meier estimate of survival function (1980-2016), with 95 percentage confidence bounds. The plot has been corrected for left-truncation.

The most important takeaway from figure 4.7 is that the majority of agencies will be terminated before turning 30 years old. In addition, the first five years of the curve is not much less steep than the rest of the curve. This suggests that the first five years of an agency's lifespan is not characterized by lower termination risk, which directly defies the expectations of hypothesis 5a. Furthermore, the survival function is steady until leveling out at about 40 or so years. This could be interpreted as an indication that agencies are safer after passing the age of 40. However, fewer and fewer agencies remain as age increases (as indicated by the number of censored observations, which is reported below), and this inevitably flattens the curve as time passes. For this reason, it is hard to know whether the curve levels off due to fewer observations or reduced risk.

Figure 4.8 shows the percentage of terminations and observations by age group.

A discrepancy between share of observations and share of terminations indicates that terminations are either overrepresented or underrepresented in certain age categories. For the most part, the share of terminations largely follows the share of observation, and the discrepancies are small. The largest difference is found in age group "< 5 years," which contains only about $10 \%$ of the total amount of terminations despite making up $17 \%$ of the observations. However, given the low N of terminations, this can hardly be said to be conclusive evidence that agencies are safer during their first five years. The other hypotheses are not lent much support either. If anything, the figure suggests that terminations are evenly distributed between age groups.

## Size

Hypothesis 6a argued that risk of termination decreases with size, while hypothesis 6 b argued that very large organizations are exposed to increased risk. Figure 4.9 shows the percentage of terminations and observations by age group, which (similarly to figure 4.8) indicates whether terminations are overrepresented or underrepresented in certain size categories. The figure shows that the two smallest categories are highly overrepresented in the share of terminations, with nearly 70 $\%$ of all terminations and only $46 \%$ of the observations. This seems to imply that smaller organizations are exposed to higher risk of termination, which is strong evidence in favor of H6a. Hypothesis 6b, on the other hand, is not really supported at all by these results. Rather, large organizations appear to be more insulated against termination - contrary to what is expected from the hypothesis.


Age category

Figure 4.8: Percentage of terminations by age categories (1980-2016).


Figure 4.9: Percentage of terminations by size categories (1980-2016). The figure is based on the imputed size variable.

### 4.1.2 Reorganization

This thesis started off with two preliminary, competing hypotheses on the determinants of termination and reorganization -1 a and 1 b . H1a argues that they can be explained by the same variables, while H 1 b argues that they are conceptually different and should not be merged into one concept. In order to come closer to an answer as to which hypothesis should be discarded or accepted, reorganizations are also examined through descriptive analysis.

## Time-series overview: Reorganizations

Figure 4.10 shows the number of reorganizations by year, against a backdrop of government type. Black vertical lines indicate a change in government. The figure shows that relatively few reorganizations were implemented between 1947 and 1999. Upon the turn of the millennium, however, reorganizations seem to have come into vogue. In particular, the Bondevik II government (2001-2005) made heavy use of such tools, slightly ahead of Stoltenberg I and II (2000-2001 and 20052013). This pattern is also confirmed by figure 4.11, which shows the number of reorganizations divided by government.

When compared with the the corresponding figures for terminations (figures 4.2 and 4.5), some similarities can be observed. Both tools have been very popular in different (although slightly overlapping) periods, implying that their pervasiveness has been driven by time-limited trends. Terminations were predominantly preferred from 1992 to 2003, while reorganizations were mainly prevalent from 2001 to 2012.

Only the Stoltenberg I and Bondevik II governments have been eager proponents of both change types. A shallow interpretation of this observation could be that these governments were simply more preoccupied with administrative structure than other governments. This might also be the case. The Stoltenberg II government, however, has the unique combination of favoring reorganizations while conspicuously staying away from terminations. This could imply that there is a higher threshold to enact terminations. In the event that there is disagreement between coalition parties on whether to terminate an agency, reorganizations could serve as a compromise and a "softer" way of implementing organizational change. Alternatively, another interpretation would be to conclude that terminations simply fell out of fashion before the Stoltenberg II government entered into office, while reorganizations remained popular for a few more years.


Figure 4.10: Number of reorganizations by year (1947-2016). Each vertical line represents a change in government.


Government
Figure 4.11: Number of reorganizations by government (1980-2016).

## Government type

Despite some similarities, figure 4.10 also highlights considerable differences between reorganizations and terminations. First, reorganizations are arguably a quite new phenomenon, while terminations have been utilized by almost all governments across several decades. Second, there is no easily discernible relationship between government type and reorganizations. In fact, the pattern is almost strikingly irregular and messy. According to figure 4.12, which shows the average number of reorganizations per year by government type, single-party governments are an exception.

The figure also incorporates the corresponding figure for terminations for the sake of comparison (figure 4.4 on page 71), and this comparison reveals that reorganizations appear to be the preferred tool for coalitions. A possible explanations could be that reorganizations are less controversial than terminations, and do not threaten coalition cohesion. Single-party governments, on the other hand, follow a reverse pattern. They prefer to make use of terminations rather than re-
organizations. As has been briefly discussed already, one plausible explanation for these differences is that terminations can be a source of contention and controversy between coalition partners, whereas single-party governments are not impeded by such concerns. A counterpoint would be that minority coalitions seem to have no qualms about either change type, while they in theory should be exposed to coalition dynamics as well.

A more sober-minded interpretation would be to see these figures as heavily influenced by several unique governments. For example, these averages do not necessarily confirm that single-party governments shun reorganizations. Reorganizations are a relatively new "trend" tool, which seems to have risen to prominence just as the last single-party government (Stoltenberg I) left office. For this reason, we cannot reasonably conclude that a single-party government would have refrained from reorganizations if it was in office from 2005 to 2013, for example. Furthermore, as has been discussed already, there has only been two majority coalitions since 1980, which makes it hard to identify general patterns in majority coalitions.


Figure 4.12: Reorganizations and terminations by government type (1980-2016). Calculated by summing up the total number of reorganizations for each government type, dividing this total by the number of years each type has been in office.

## Government turnover

Government turnover seems to matter very little for the timing of reorganizations. If anything, reorganizations are more frequent outside of government changes, as indicated by figure 4.13. This is a pattern which is strikingly antithetical to terminations. Again, this could imply that reorganizations are more easily implemented at any time due to being less controversial, whereas terminations are sensitive and require the amassment of political capital, resources and political consensus - all of which are maximized shortly after a change in government. Another take could be to say that reorganizations take longer to implement, thus will not be caught by this measure. However, there are absolutely no theoretical reasons as to why that should be the case. If anything, the sudden explosive use of reorganizations in 2001 suggests that reorganizations are quickly implemented and available to all governments at any time.


Figure 4.13: Average number of reorganizations by government turnover (1980-2016).

## Age

Figure 4.14 shows the percentage of reorganizations and observations by age group. A discrepancy between share of observations and share of reorganizations indicates whether reorganizations are overrepresented or underrepresented in certain
age categories. By and large, organizations older than 30 years appear to be reorganized more often than other age groups, while $10-30$ years seems to be an age interval in which reorganizations occur less frequently. The discrepancies for the two lowest age groups, on the other hand, are small, which suggests that reorganizations are evenly distributed between organizations that are younger than 10 years. In any case, none of the discrepancies are very substantial - although age seems to be of greater importance for reorganizations than for terminations.

## Size

In figure 4.15, it is evident that reorganizations are disproportionately imposed on large agencies (more than 250 FTEs). This is perhaps not surprising. Larger organizations have larger hierarchies, and can be very complex. Furthermore, they can be be organized in multiple ways. It makes intuitive sense that reorganizations would befall larger organizations more often than smaller ones. Similarly, agencies with fewer than 20 FTEs are hardly ever reorganized - most likely due to few organizational layers and a low degree of organizational complexity.

Regardless of the underlying mechanics, the contrast to the corresponding numbers for terminations is striking. While small agencies seems to be terminated more often than larger ones, the opposite seems to be the case for reorganizations. Large organizations seem to be proficient at resisting termination, but they are ostensibly incapable of avoiding reorganizations. It begs the question of whether agencies agree to reorganizations as part of a strategy to avoid termination - avoiding radical change by accepting "softer change." This should be subject to further research.

These conflicting patterns are perhaps the strongest indication yet that reorganizations and terminations should not be covered by the same hypotheses. Some of the same variables might be relevant to explain both change types (such as size), but there are clear indications that the mechanisms are different from one another. This marks a natural point to move onto the regression results, which will be presented in the next section.


Figure 4.14: Percentage of reorganizations by age categories (1980-2016).


Figure 4.15: Percentage of reorganizations by size categories (1980-2016). The figure is based on the imputed size variable.

### 4.2 Regression results

While descriptive statistics can provide basic levels of insight, they do a poor job of examining complex relationships or accounting for confounding variables. We thus turn to the main analytical tool utilized in this thesis - discrete survival regression. Firstly, the regression tables are presented. The first table (4.1) consists of six models where termination is the dependent variable, while the second (4.2) contains the same models with reorganization as the dependent variable. Secondly, the results are analyzed step by step, going through the hypotheses from Chapter 2.

These exact model specifications are chosen for various reasons. For example, "government turnover" and "new minister" are not included in models at the same time. Because these variables are (unsurprisingly) very highly correlated. Consequently, their simultaneous inclusion were found to result in artificially strong coefficients due to collinearity. ${ }^{1}$

Modeling these variables separately is not necessarily a satisfactory solution either, since omitted variable bias (OVB) has also been proven to bias coefficients in logistic regression (Mood, 2010). However, it is considered to be the lesser evil OVB is only a possible problem, while collinearity is a known issue. Furthermore, as outlined in section 3.5.6, two different measures of size are used. The first measure is based on the imputed median estimates, and run on all observations from 1980 to 2014. The second measure is based on the complete observations (as reported by the NSA), and run only on observations between 1993 and 2014. All regression models include polynomials, as described in section 3.1, in order to counter autocorrelation.

The coefficients are presented as odds ratios. The odds ratio is the exponential of B (the logit coefficient), also written as $e^{B}$ or $\exp (B)$ (Field, 2012, p. 321). Odds ratios denote the relative increase in odds when the value on an independent variable is changed. In other words, it describes the relationship between the odds of having a high value on the dependent variable and low value on another variable (Christophersen, 2013, p. 131). If a dichotomous independent variable is ascribed an odds ratio of 3 , it means that the odds of scoring a 1 on the dependent variable

[^21]increases by a factor of 3 if the value on the independent variable changes from 0 to 1 (Skog, 2004). While this makes it easier to interpret the coefficients, it tells us little about the probability that something will occur. Fortunately, the predicted probability can be calculated for a specific set of values by using the following formula:
$$
P(Y)=\frac{1}{1+e^{-\left(b_{0}+b_{1} X_{1 i}+b_{2} X_{2 i}+\ldots b_{n} X_{n i}\right)}}
$$

This formula is used to calculate the predicted probability of structural reform for the "median agency," in order to see how this probability is affected when the value of the independent variable changes. ${ }^{2}$

As I described in section 3.3.2, the robustness of the models must be checked by removing each year from the regression one by one. This is done in order to see if coefficients are determined by single years, or if the reported effects are systematic and independent of them. An overview of these robustness checks is outlined in section 4.3 , immediately following the hypotheses. Subsequently, I provide a brief summary of the assumptions for logistic regression and the goodness-of-fit of the models.

[^22]|  | Dependent variable: Termination |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $\begin{gathered} 1980-2014 \\ (1) \end{gathered}$ | $1980-2014$ (2) | $\begin{gathered} 1980-2014 \\ (3) \end{gathered}$ | 1980-2014 <br> (4) | $\begin{gathered} 1993-2014 \\ \text { (5) } \end{gathered}$ | $\begin{gathered} 1993-2014 \\ (6) \\ \hline \end{gathered}$ |
| Government change (L1+2) | $\begin{gathered} 3.126^{* * *} \\ (0.314) \end{gathered}$ |  | $\begin{gathered} 2.713^{* * *} \\ (0.335) \end{gathered}$ |  | $\begin{gathered} 3.360^{* *} \\ (0.521) \end{gathered}$ |  |
| New minister (L1+2) |  | $\begin{gathered} 1.055 \\ (0.284) \end{gathered}$ |  | $\begin{gathered} 0.855 \\ (0.294) \end{gathered}$ |  | $\begin{gathered} 0.761 \\ (0.408) \end{gathered}$ |
| Minority single-party (L1) (ref: Minority coalition) | $\begin{gathered} 1.688 \\ (0.335) \end{gathered}$ | $\begin{gathered} 1.097 \\ (0.322) \end{gathered}$ | $\begin{gathered} 1.757 \\ (0.371) \end{gathered}$ | $\begin{gathered} 1.193 \\ (0.355) \end{gathered}$ | $\begin{gathered} 4.614^{* *} \\ (0.661) \end{gathered}$ | $\begin{gathered} 1.974 \\ (0.542) \end{gathered}$ |
| Majority coalition (L1) | $\begin{gathered} 0.949 \\ (0.405) \end{gathered}$ | $\begin{gathered} 0.601 \\ (0.431) \end{gathered}$ | $\begin{gathered} 0.891 \\ (0.436) \end{gathered}$ | $\begin{gathered} 0.578 \\ (0.457) \end{gathered}$ | $\begin{gathered} 0.128^{* * *} \\ (0.719) \end{gathered}$ | $\begin{gathered} 0.113^{* * *} \\ (0.735) \end{gathered}$ |
| Income/expenditure balance (L1) | $\begin{gathered} 1.019 \\ (0.032) \end{gathered}$ | $\begin{aligned} & 1.060^{* *} \\ & (0.028) \end{aligned}$ | $\begin{gathered} 1.023 \\ (0.035) \end{gathered}$ | $\begin{aligned} & 1.070^{* *} \\ & (0.030) \end{aligned}$ | $\begin{gathered} 0.968 \\ (0.056) \end{gathered}$ | $\begin{gathered} 1.070 \\ (0.046) \end{gathered}$ |
| Geographic dispersion | $\begin{gathered} 0.278^{* * *} \\ (0.341) \end{gathered}$ | $\begin{gathered} 0.292^{* * *} \\ (0.343) \end{gathered}$ | $\begin{aligned} & 0.461^{*} \\ & (0.397) \end{aligned}$ | $\begin{aligned} & 0.479^{*} \\ & (0.402) \end{aligned}$ | $\begin{gathered} 0.590 \\ (0.432) \end{gathered}$ | $\begin{gathered} 0.656 \\ (0.447) \end{gathered}$ |
| 5-10 years old (ref: $0-5$ years old) | $\begin{gathered} 1.680 \\ (0.461) \end{gathered}$ | $\begin{gathered} 1.977 \\ (0.549) \end{gathered}$ | $\begin{gathered} 2.211 \\ (0.583) \end{gathered}$ | $\begin{gathered} 2.442 \\ (0.689) \end{gathered}$ | $\begin{gathered} 1.813 \\ (0.613) \end{gathered}$ | $\begin{gathered} 1.866 \\ (0.719) \end{gathered}$ |
| 10-30 years old | $\begin{gathered} 1.646 \\ (0.384) \end{gathered}$ | $\begin{gathered} 1.956 \\ (0.487) \end{gathered}$ | $\begin{aligned} & 2.562^{*} \\ & (0.498) \end{aligned}$ | $\begin{aligned} & 2.884^{*} \\ & (0.620) \end{aligned}$ | $\begin{gathered} 1.282 \\ (0.536) \end{gathered}$ | $\begin{gathered} 1.383 \\ (0.653) \end{gathered}$ |
| Over 30 years old | $\begin{aligned} & 2.415^{* *} \\ & (0.394) \end{aligned}$ | $\begin{aligned} & 2.820^{* *} \\ & (0.496) \end{aligned}$ | $\begin{gathered} 3.843^{* * *} \\ (0.499) \end{gathered}$ | $\begin{aligned} & 4.273^{* *} \\ & (0.621) \end{aligned}$ | $\begin{gathered} 2.063 \\ (0.541) \end{gathered}$ | $\begin{gathered} 2.192 \\ (0.662) \end{gathered}$ |
| 20-69 employees (median) (ref: < 20 employees) |  |  | $\begin{gathered} 1.119 \\ (0.312) \end{gathered}$ | $\begin{gathered} 1.167 \\ (0.314) \end{gathered}$ |  |  |
| 70-139 employees (median) |  |  | $\begin{aligned} & 0.457^{*} \\ & (0.454) \end{aligned}$ | $\begin{aligned} & 0.471^{*} \\ & (0.456) \end{aligned}$ |  |  |
| 140-249 employees (median) |  |  | $\begin{aligned} & 0.380^{* *} \\ & (0.488) \end{aligned}$ | $\begin{aligned} & 0.331^{* *} \\ & (0.524) \end{aligned}$ |  |  |
| >250 employees (median) |  |  | $\begin{gathered} 0.507 \\ (0.475) \end{gathered}$ | $\begin{gathered} 0.502 \\ (0.478) \end{gathered}$ |  |  |
| 20-69 employees (ref: < 20 employees) |  |  |  |  | $\begin{gathered} 1.067 \\ (0.432) \end{gathered}$ | $\begin{gathered} 1.132 \\ (0.440) \end{gathered}$ |
| 70-139 employees |  |  |  |  | $\begin{gathered} 0.928 \\ (0.461) \end{gathered}$ | $\begin{gathered} 0.992 \\ (0.473) \end{gathered}$ |
| 140-249 employees |  |  |  |  | $\begin{aligned} & 0.173^{* *} \\ & (0.794) \end{aligned}$ | $\begin{aligned} & 0.092^{* *} \\ & (1.071) \end{aligned}$ |
| > 250 employees |  |  |  |  | $\begin{gathered} 0.648 \\ (0.558) \end{gathered}$ | $\begin{gathered} 0.628 \\ (0.570) \end{gathered}$ |
| Constant | $\begin{gathered} 0.008^{* * *} \\ (0.501) \end{gathered}$ | $\begin{gathered} 0.013^{* * *} \\ (0.604) \end{gathered}$ | $\begin{gathered} 0.006^{* * *} \\ (0.627) \end{gathered}$ | $\begin{gathered} 0.010^{* * *} \\ (0.745) \end{gathered}$ | $\begin{gathered} 0.024^{* * *} \\ (0.681) \end{gathered}$ | $\begin{gathered} 0.019^{* * *} \\ (0.794) \end{gathered}$ |
| Observations | 2446 | 2231 | 2336 | 2142 | 1403 | 1337 |
| Log Likelihood | -331.907 | -320.936 | -282.763 | -276.160 | -171.956 | -164.095 |
| Akaike Inf. Crit. | 687.814 | 665.873 | 597.526 | 584.320 | 375.913 | 360.189 |

Note:
${ }^{*} \mathrm{p}<0.1 ;{ }^{* *} \mathrm{p}<0.05 ;{ }^{* * *} \mathrm{p}<0.01$
Table 4.1: Discrete survival regressions with termination as a dependent variable. Coefficients expressed as odds ratios, standard errors in parentheses. (L1) denotes a lag of one year, and (L1+2) a lag of one and two years. Polynomials are included in all models to account for time dependence.

|  | Dependent variable: Reorganization |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $1980-2014$ <br> (7) | $1980-2014$ <br> (8) | $1980-2014$ <br> (9) | $\begin{gathered} 1980-2014 \\ (10) \end{gathered}$ | $\begin{gathered} 1993-2014 \\ (11) \end{gathered}$ | $\begin{gathered} 1993-2014 \\ (12) \end{gathered}$ |
| Government change (L1+2) | $\begin{gathered} 1.463 \\ (0.326) \end{gathered}$ |  | $\begin{gathered} 1.463 \\ (0.327) \end{gathered}$ |  | $\begin{gathered} 1.580 \\ (0.521) \end{gathered}$ |  |
| New minister (L1+2) |  | $\begin{gathered} 1.498 \\ (0.320) \end{gathered}$ |  | $\begin{gathered} 1.522 \\ (0.320) \end{gathered}$ |  | $\begin{gathered} 1.586 \\ (0.378) \end{gathered}$ |
| Minority single-party (L1) (ref: Minority coalition) | $\begin{gathered} 1.182 \\ (0.390) \end{gathered}$ | $\begin{gathered} 1.077 \\ (0.399) \end{gathered}$ | $\begin{gathered} 1.196 \\ (0.392) \end{gathered}$ | $\begin{gathered} 1.094 \\ (0.401) \end{gathered}$ | $\begin{gathered} 2.400 \\ (0.651) \end{gathered}$ | $\begin{gathered} 1.859 \\ (0.571) \end{gathered}$ |
| Majority coalition (L1) | $\begin{gathered} 0.646 \\ (0.477) \end{gathered}$ | $\begin{gathered} 0.629 \\ (0.505) \end{gathered}$ | $\begin{gathered} 0.643 \\ (0.479) \end{gathered}$ | $\begin{gathered} 0.633 \\ (0.505) \end{gathered}$ | $\begin{gathered} 0.491 \\ (0.907) \end{gathered}$ | $\begin{gathered} 0.499 \\ (0.815) \end{gathered}$ |
| Income/expenditure balance (L1) | $\begin{gathered} 1.025 \\ (0.034) \end{gathered}$ | $\begin{gathered} 1.017 \\ (0.033) \end{gathered}$ | $\begin{gathered} 1.026 \\ (0.034) \end{gathered}$ | $\begin{gathered} 1.018 \\ (0.033) \end{gathered}$ | $\begin{gathered} 0.986 \\ (0.044) \end{gathered}$ | $\begin{gathered} 0.992 \\ (0.040) \end{gathered}$ |
| Geographic dispersion | $\begin{gathered} 2.487^{* * *} \\ (0.262) \end{gathered}$ | $\begin{gathered} 2.139^{* * *} \\ (0.279) \end{gathered}$ | $\begin{aligned} & 1.675^{*} \\ & (0.287) \end{aligned}$ | $\begin{gathered} 1.601 \\ (0.307) \end{gathered}$ | $\begin{aligned} & 1.872^{*} \\ & (0.348) \end{aligned}$ | $\begin{aligned} & 1.839^{*} \\ & (0.362) \end{aligned}$ |
| 5-10 years old (ref: 0-5 years old) | $\begin{gathered} 0.943 \\ (0.442) \end{gathered}$ | $\begin{gathered} 1.363 \\ (0.524) \end{gathered}$ | $\begin{gathered} 0.913 \\ (0.444) \end{gathered}$ | $\begin{gathered} 1.351 \\ (0.526) \end{gathered}$ | $\begin{gathered} 2.006 \\ (0.575) \end{gathered}$ | $\begin{gathered} 2.315 \\ (0.661) \end{gathered}$ |
| 10-30 years old | $\begin{gathered} 0.655 \\ (0.368) \end{gathered}$ | $\begin{gathered} 0.924 \\ (0.465) \end{gathered}$ | $\begin{gathered} 0.648 \\ (0.379) \end{gathered}$ | $\begin{gathered} 0.973 \\ (0.476) \end{gathered}$ | $\begin{gathered} 1.204 \\ (0.508) \end{gathered}$ | $\begin{gathered} 1.466 \\ (0.607) \end{gathered}$ |
| Over 30 years old | $\begin{gathered} 0.963 \\ (0.335) \end{gathered}$ | $\begin{gathered} 1.379 \\ (0.439) \end{gathered}$ | $\begin{gathered} 0.838 \\ (0.340) \end{gathered}$ | $\begin{gathered} 1.259 \\ (0.443) \end{gathered}$ | $\begin{gathered} 1.566 \\ (0.475) \end{gathered}$ | $\begin{gathered} 1.913 \\ (0.579) \end{gathered}$ |
| 20-69 employees (median) <br> (ref: < 20 employees) |  |  | $\begin{gathered} 5.169^{* *} \\ (0.641) \end{gathered}$ | $\begin{gathered} 5.281^{* * *} \\ (0.646) \end{gathered}$ |  |  |
| 70-139 employees (median) |  |  | $\begin{aligned} & 3.901^{* *} \\ & (0.671) \end{aligned}$ | $\begin{aligned} & 3.545^{*} \\ & (0.679) \end{aligned}$ |  |  |
| 140-249 employees (median) |  |  | $\begin{aligned} & 3.590^{*} \\ & (0.673) \end{aligned}$ | $\begin{aligned} & 3.265^{*} \\ & (0.688) \end{aligned}$ |  |  |
| > 250 employees (median) |  |  | $\begin{gathered} 6.457^{* * *} \\ (0.658) \end{gathered}$ | $\begin{aligned} & 5.009^{* *} \\ & (0.669) \end{aligned}$ |  |  |
| $\begin{aligned} & \text { 20-69 employees (non-NA) } \\ & \text { (ref: < } 20 \text { employees) } \end{aligned}$ |  |  |  |  | $\begin{aligned} & 3.151^{*} \\ & (0.675) \end{aligned}$ | $\begin{aligned} & 3.074^{*} \\ & (0.680) \end{aligned}$ |
| 70-139 employees (non-NA) |  |  |  |  | $\begin{gathered} 1.091 \\ (0.773) \end{gathered}$ | $\begin{gathered} 1.067 \\ (0.778) \end{gathered}$ |
| 140-249 employees (non-NA) |  |  |  |  | $\begin{gathered} 1.507 \\ (0.722) \end{gathered}$ | $\begin{gathered} 1.587 \\ (0.726) \end{gathered}$ |
| > 250 employees (non-NA) |  |  |  |  | $\begin{aligned} & 3.656^{*} \\ & (0.698) \end{aligned}$ | $\begin{gathered} 3.086 \\ (0.705) \end{gathered}$ |
| Constant | $\begin{gathered} 0.014^{* * *} \\ (0.462) \\ \hline \end{gathered}$ | $\begin{gathered} 0.012^{* * *} \\ (0.603) \end{gathered}$ | $\begin{gathered} 0.005^{* * *} \\ (0.724) \end{gathered}$ | $\begin{gathered} 0.004^{* * *} \\ (0.823) \end{gathered}$ | $\begin{gathered} 0.005^{* * *} \\ (0.875) \end{gathered}$ | $\begin{gathered} 0.004^{* * *} \\ (0.955) \end{gathered}$ |
| Observations | 2304 | 2095 | 2207 | 2017 | 1298 | 1236 |
| Log Likelihood | -292.944 | -259.052 | -285.303 | -252.980 | -182.998 | -173.808 |
| Akaike Inf. Crit. | 609.889 | 542.104 | 602.607 | 537.961 | 397.995 | 379.616 |

Table 4.2: Discrete survival regressions with reorganization as a dependent variable. Coefficients expressed as odds ratios, standard errors in parentheses. (L1) denotes a lag of one year, and (L1+2) a lag of one and two years. Polynomials are included in all models to account for time dependence.

### 4.2.1 Government turnover

In Chapter 2, section 2.1.1, an important component of the dimension referred to as political incentives was expected to be government turnover. Government turnover refers to changes of both government and minister. The following hypotheses were developed:

H2a: An agency's risk of being subjected to structural reform is increased after a change in government.

H2b: An agency's risk of being subjected to structural reform is increased after a change in responsible minister.

First, the results for termination will be discussed, as presented in table 4.1. The two uppermost coefficients, government change and new minister, are designed to test H2a and H2b respectively. The first takeaway from these coefficients is that government change appears to be more closely connected to terminations than changes of minister. These coefficients are significant at the $95 \%$ confidence level in models 1,3 , and 5 , which indicates that the probability of discarding a true null hypothesis is low. The minister coefficients are not significant in any models, however, and there is thus no evidence to support hypothesis 2b. H2b is therefore discarded for terminations. Furthermore, models 2, 4 and 6 are obviously incomplete without the government change variable, and their coefficients cannot be trusted due to the risk of omitted variable bias (as discussed in section 4.2). ${ }^{3}$ These models will therefore not be subject to further review in the rest of the analysis. I apply the same criteria to the reorganization models (8, 10 and 12).

Hypothesis 2a, on the other hand, shows promise. As seen in models 1, 3, and 5 , government change seems to be a viable predictor for terminations. The odds ratios are above 1 , meaning that the odds of termination increases after a change in government. The odds ratio of 3.126 in model 1 indicates that an agency's odds of being terminated is 3.126 times higher after the government has changed, as compared to years when there are no changes of government. This only tells us the relative change in risk, however. In order to know the probability of terminations it is necessary to specify the values of all variables included in the models.

[^23]Column 3 in table 4.3 shows the predicted probability of termination when the government change variable is 0 (meaning that there is no government change). Column 4 shows the predicted probability when the government change variable is 1 (meaning that there has been a change of government). The values of all other variables are held constant at median values. Overall, the probability that termination will occur is quite low. However, this is natural given that termination is a relatively rare event. For model 1 , for example, the predicted probability of termination is 0.031 when there is no change in government, meaning that the median agency has a $3.1 \%$ chance to be terminated. In years after a government change, however, this probability increases by $190 \%$ or a factor of 2.9 to 0.09 meaning that probability of termination rises from $3.1 \%$ to $9 \%$. As indicated by column 7 , this is an increase of 5.9 percentage points. We can extrapolate from this that the risk of termination is nearly tripled after a change in government. These results are relatively consistent between the three models, and constitute strong evidence in favor of hypothesis 2a.

As for reorganization, there is no evidence that government turnover matters as indicated by the minister and government change coefficients in models 7 to 12 . The hypotheses are thus discarded for reorganizations.

| Model | Dep. <br> variable | Predicted <br> probability <br> (no change) | Predicted <br> probability <br> (after change) | $\Delta$ in \% to 1) <br> (0 | $\Delta$ factor | $\Delta$ in <br> $\%$-points |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $(1)$ | $(2)$ | $(3)$ | $(4)$ | $(5)$ | $(6)$ | $(7)$ |
| Model 1 | Term. | $3.1 \%$ | $9 \%$ | 190 | 2.903 | 5.9 |
| Model 3 | Term. | $1.7 \%$ | $4.4 \%$ | 159 | 2.588 | 2.7 |
| Model 5 | Term. | $1.3 \%$ | $4.2 \%$ | 223 | 3.231 | 2.9 |

Table 4.3: Predicted probability of agency termination for government change. Only significant results are included. All other variables are held constant at their median values. The $\Delta$ symbol stands for change.

### 4.2.2 Attributes of the government

In section 2.1.2, government type was expected to have an impact on an agency's risk of being subjected to structural reform, through the following hypotheses:

H3a: An agency's risk of being subjected to structural reform is least likely under majority coalitions.

H3b: An agency's risk of being subjected to structural reform is less likely under minority coalitions than under minority single-party governments, but still more likely than under majority coalitions.

H3c: An agency's risk of being subjected to structural reform is most likely under minority single-party governments.

In the termination regression table (4.1), model 5 yields significant results for both single-party governments and majority coalitions. The odds ratio of 4.614 means that the odds that an agency will be terminated is increased by a factor of 4.614 when a single-party government is in power, as opposed to a minority coalition. In other words, we can deduce that terminations are more likely under single-party governments than under minority coalitions. The first row of column 4 in table 4.4 shows that the predicted probability of termination rises from 0.009 ( $0.9 \%$ ) to $0.042(4.2 \%)$ when the value of the government type variable changes from minority coalition to single-party - an increase of $367 \%$.

Moreover, the odds ratio of majority coalitions is below 1 (at 0.128 ), indicating that terminations are less likely under majority coalitions than under minority coalitions. The predicted probability decreases from 0.009 ( $0.9 \%$ ) to 0.001 ( $0.1 \%$ ) when the value of the government type variable changes from minority coalition to majority coalition - a probability decrease of 89 percent. Based on these observations, we can rank government types in the following manner, from most to least likely to terminate:

1. Single-party governments
2. Minority coalitions
3. Majority coalitions

This is in accordance with all three hypotheses, meaning that they should be considered plausible. However, some prudence is warranted, and causal language should be avoided. Model 5 has only been run on observations between 1993 and 2014. In this period, there has only been one majority coalition, Stoltenberg II (2005-2013). Consequently, the actions of this single cabinet exercises a very heavy influence on the model. This might not be adequate grounds for generalization, given that the descriptive statistics (in figure 4.2 on page 67) characterized the period after 2005 as a time with abnormally few terminations. Similarly, all single-party governments after 1993 have been unusually eager to terminate many

| Category | Model | Dep. <br> var | Predicted <br> probability <br> (minority <br> coalition) | Predicted <br> probability <br> (other) | $\Delta$ in $\%$ <br> (from <br> minority <br> coalition) | $\Delta$ factor | $\Delta$ in |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| (1) | (2) | $(3)$ | $(4)$ | $(5)$ | $(6)$ | $(7)$ | (8) |
| Single-party | Model 5 | Term. | $0.9 \%$ | $4.2 \%$ | 367 | 4.667 | 3.3 |
| Majority coalition | Model 5 | Term. | $0.9 \%$ | $0.1 \%$ | -89 | 0.111 | -0.8 |

Table 4.4: Predicted probability of agency termination for government type. Only significant results are included. All other variables are held constant at their median values. The $\Delta$ symbol stands for change.
agencies simultaneously, resulting in a very strong single-party coefficient. We can say that the hypotheses possibly have some merit between 1993 and 2014, but the pattern is not nearly clear enough when the time frame is expanded back to 1980. Consequently, the hypotheses are considered to be slightly plausible, but most likely not very robust.

Once more, the coefficients in the reorganization regression table (4.2) are not significant, and government type does not seem to matter affect the likelihood that agencies will be reorganized.

### 4.2.3 Fiscal pressure

According to section 2.1.3, fiscal pressure was believed to have an impact on the risk of structural reform, with the following empirical expectations:

H4: An agency's risk of being subjected to structural reform is increased when fiscal pressure is high.

As seen in tables 4.1 and 4.2, the coefficient for income/expenditure balance is only significant in models 2 and 4 - both of which are estimated without government change as an independent variable. As previously discussed, these models are very likely to be at risk of omitted variable bias. As such, their results cannot be taken at face value. Accordingly, the hypothesis is discarded.

### 4.2.4 Geographic dispersion

In section 2.2.3, geographic dispersion was expected to be connected to structural reform, as expressed in the following hypothesis:

H7: An agency's risk of being subjected to structural reform is decreased when the agency is geographically dispersed.

Geographic dispersion is indeed found to matter for both terminations and reorganizations, as seen in models 1 and 7. Interestingly, the coefficients go in completely opposite directions. For termination, the odds ratio is lower than 1, indicating that geographically dispersed median agencies have a lower risk of being terminated than non-dispersed median agencies - an observation that is in accordance with hypothesis 7 . As indicated by columns 3 and 4 in table 4.5 , the predicted probability of termination decreases from $9 \%$ to $2.7 \%$ (a decrease of $70 \%$ ).

For reorganizations, on the other hand, the connection seems to be the opposite. The odds ratio is larger than 1 , which means that geographically dispersed agencies have a higher risk of being reorganized than non-dispersed agencies. Column 6 in table 4.5 tells us that geographically dispersed median agencies are 2.4 times more likely to be reorganized than non-dispersed median agencies. This is completely contrary to the expectations of hypothesis $7 .{ }^{4}$

However, geographic dispersion loses its importance when controlling for size, as indicated by the non-significant coefficients in models $3,5,9$ and 11 (although some coefficients are significant at the $90 \%$ confidence level). It makes sense that geographically dispersed agencies would also be large, and that geographic dispersion in reality is a proxy measure for size. While hypothesis 7 is plausible, the models tell us that size seems to matter more for both reorganization and termination.

| Model | Dep. <br> variable | Predicted <br> probability <br> (not dispersed) | Predicted <br> probability <br> (dispersed) | $\Delta$ in $\%$ <br> (0 to 1) | $\Delta$ factor | $\Delta$ in <br> $\%$-points |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $(1)$ | $(2)$ | $(3)$ | $(4)$ | $(5)$ | $(6)$ | $(7)$ |
| Model 1 | Term. | $9 \%$ | $2.7 \%$ | -70 | 0.3 | -6.3 |
| Model 7 | Reorg. | $1.5 \%$ | $3.6 \%$ | 140 | 2.4 | 2.1 |

Table 4.5: Predicted probability of agency termination for geographic dispersion. Only significant results are included. All other variables are held constant at their median values. The $\Delta$ symbol stands for change.

[^24]
### 4.2.5 Age

The effect of age was in section 2.2.1 assumed to be connected to structural reform, specified in the ensuing hypotheses:

H5a: An agency's risk of being subjected to structural reform is decreased during the first five years after creation.

H5b: An agency's risk of being subjected to structural reform is increased in its adolescent years (older than 5 years and younger than 10 years).

H5c: An agency's risk of being subjected to structural reform is decreased in its early mature years (older than 10 years and younger than 30 years).

H5d: An agency's risk of being subjected to structural reform is increased in its mature years (older than 30 years).

In tables 4.1 and 4.2, ' $0-5$ years' is the reference category - meaning that all the subsequent coefficients are compared to that category. According to these models, the only significant difference is found between agencies that are younger than 5 years old and agencies that are more than 30 years old. At least, this is the case in models 1 and 3, in which termination is the dependent variable.

As table 4.6 shows, in model 1 the predicted probability of termination increases by $123 \%$ for median agencies older than 30 years old, compared to agencies younger than 5 years old (an increase from $5.7 \%$ to a $12.7 \%$ chance of being terminated). For model 3, the correlation between high age and termination is assumed to be even stronger, with an increase in predicted probability from 0.018 to 0.065. In other words, agencies older than 30 years are over 3.5 times more likely to be terminated than agencies younger than 5 years. Notably, age does not return any significant coefficients in model 5 , but this could be ascribed to a lower N and subsequently reduced certainty. These findings are in line with hypothesis 5 d . Consequently, hypotheses $5 \mathrm{a}, 5 \mathrm{~b}$ and 5 c are rejected for terminations, while 5 d is considered to be highly plausible.

As shown by the non-significant coefficients in models 7, 9 and 11, there are no indications that age matters for reorganizations. All four hypotheses are thus rejected for reorganizations.

| Model | Dep. <br> variable | Predicted <br> probability <br> $(0-5$ years) | Predicted <br> probability <br> $(>30$ years) | $\Delta$ in \% (from <br> 0-5 years) | $\Delta$ factor | $\Delta$ in <br> $\%$-points |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $(1)$ | $(2)$ | $(3)$ | $(4)$ | $(5)$ | $(6)$ | $(7)$ |
| Model 1 | Term. | $5.7 \%$ | $12.7 \%$ | 123 | 2.228 | 7 |
| Model 3 | Term. | $1.8 \%$ | $6.5 \%$ | 261 | 3.611 | 4.7 |

Table 4.6: Predicted probability of agency termination for age. Only significant results are included. All other variables are held constant at their median values. The $\Delta$ symbol stands for change.

### 4.2.6 Size

In section 2.2.2, size was assumed to matter for the risk of structural reform, and expected to be observed empirically in the following manner:

H6a: An agency's risk of being subjected to structural reform decreases with size, meaning that larger organizations have a lower likelihood of being reformed than smaller organizations.

H6b: An agency's risk of being subjected to structural reform is increased for organizations that are larger than a certain size, which leads to perceptions of it being too large and thereby pressure for its reform.

The reference category for size is 'fewer than 20 employees,' which means that all the other categories are compared to that category. Many of the coefficients are significant, so the termination regression table (4.1) will consequently be examined first.

For both the imputed variable (based on median estimates) and the non-imputed variable, only one coefficient is significant - '140-249 employees' in models 3 and 5. Both odds ratios are below 1, which means that agencies with 140 to 249 employees have a lower likelihood of being terminated than agencies with less than 20 employees (when all other variables are held constant at the median). According to model 3 and 5 respectively, agencies with 140-249 FTEs have a 60 and 82 \% lower probability of being terminated than agencies with fewer than 20 FTEs. This observation corresponds with the expectations of hypothesis 6 a , and it is thus considered to be plausible. On the other hand, there seems to be no evidence that hypothesis 6b is true. If it was, one would have expected the largest category, 'more than 250 employees,' to be significant and have an odds ratio higher than 1 , and
neither is the case. Hypothesis 6b is thus rejected.

| Category | Model | Dep. <br> variable | Predicted <br> probability <br> $(<20$ FTEs) | Predicted <br> probability <br> $($ new category) | $\Delta$ in \% (from <br> $<$ 20 FTEs) | $\Delta$ factor | $\Delta$ in <br> $\%$-points |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| (1) | $(2)$ | $(3)$ | $(4)$ | $(5)$ | $(6)$ | $(7)$ | $(8)$ |
| 20-69 FTEs | Model 9 | Reorg. | $0.5 \%$ | $2.5 \%$ | 400 | 5 | 2 |
| 70-139 FTEs | Model 9 | Reorg. | $0.5 \%$ | $1.9 \%$ | 280 | 3.8 | 1.4 |
| 140-249 FTEs | Model 3 | Term. | $9.2 \%$ | $3.7 \%$ | -60 | 0.402 | -5.5 |
|  | Model 5 | Term. | $4.5 \%$ | $0.8 \%$ | -82 | 0.178 | -3.7 |
| >250 FTEs | Model 9 | Reorg. | $0.5 \%$ | $3.1 \%$ | 520 | 6.2 | 2.6 |

Table 4.7: Predicted probability of agency termination for size. Only significant results are included. All other variables are held constant at their median values. The $\Delta$ symbol stands for change.

In the reorganization regression, model 9 returns multiple significant coefficients. As with geographic dispersion, the connection between size and reorganization appears to be the opposite of the one reported for termination. All odds ratios are larger than 1 , indicating that the odds of being reorganized is increased for organizations with more than 20 employees (except for 140-249 FTEs, which is not significant). Table 4.7 shows that the probability of being reorganized is multiple times greater for almost all size categories, when compared to agencies with fewer than 20 FTEs. In model 9 , columns 4 and 5 show that the predicted probability of being reorganized is more than 6 times greater if an agency has more than 250 employees. This is the exact opposite of what hypothesis 6 a expects, and it must therefore be rejected.

Hypothesis 6b, however, has some merit - at least on the surface. The hypothesis expects structural reform to be more likely for large organizations, and the coefficients in model 9 partly align with that expectation. However, as seen in column 5 in table 4.7, the difference in predicted probability for '20-69 FTEs' (0.025) and 'more than 250 FTEs' is miniscule ( 0.031 ). If the hypothesis is true, one would expect the larger category to have a much higher predicted probability. These probabilities seem to suggest that the main difference is between small organizations and the other categories. Consequently, both 6 a and 6 b are rejected for reorganizations.

### 4.2.7 Reorganization or termination, or both?

This thesis started off with two preliminary, competing hypotheses on the determinants of termination and reorganization:

H1a: The determinants of termination and reorganization are the same, confirming that structural reform is a valid concept.

H1b: The determinants of termination and reorganization are different, proving that structural reform is an invalid concept.

A comparison between the two regression tables reveals stark contrasts. First of all, very few of the variables in the reorganization regression table are statistically significant, which reflects considerable uncertainty in the estimates. This can be an indication of a poorly specified model, or simply that there are too few observations to warrant confidence in the estimates. In either case, these results are hardly very convincing, leading us to conclude that most of these variables are poor predictors of reorganizations.

Second, while some coefficients are indeed statistically significant, they do not match up with the hypotheses. In fact, they directly defy them. For example, the results indicate that an agency is more likely to reorganized if it is geographically dispersed, whereas the opposite is the case for terminations. Similarly, large organizations are more likely to be reorganized, but less likely to be terminated. These are strong indications that the underlying mechanics which cause reorganizations and terminations are different, and that structural reform is not a valid concept. In sum, no evidence supports hypothesis 1a, while some evidence points toward the validity of hypothesis 1 b . H1a will thus be rejected, while H 1 b is considered to be plausible.

| Empirical expectation | Expected effect | Regression effect (terminations) | Robust? | Status |
| :---: | :---: | :---: | :---: | :---: |
| Government turnover |  |  |  |  |
| H2a : Increased risk after a change in government. | Increased risk | Increased risk | Model 1 and 3: Robust across all years. Model 5: <br> Not significant if 2000 or 2003 is removed. | Highly plausible, quite robust |
| H2b: Increased risk after a change in responsible minister. | Increased risk | No effect | - | No evidence |
| Government type |  |  |  |  |
| H3a: Risk is lowest under majority coalitions. | Lowest risk | Lowest risk | Only in model 5 (1993-2014). <br> Results are solely dependent on the inclusion of Stoltenberg II. | Slightly plausible, although not very robust |
| H3b: Risk is medium under minority coalitions. | Medium risk | Medium risk | Reference category. | Slightly plausible, although not very robust |
| H3c: Risk is highest under single-party governments. | Highest risk | Highest risk | Only in model 5 (1993-2014). <br> Not significant if 1998, 2001, 2002 or 2003 is removed. | Slightly plausible, although not very robust |
| Fiscal pressure |  |  |  |  |
| H4: Increased risk when fiscal pressure is high. | Increased risk | No effect | - | No evidence |
| Age |  |  |  |  |
| H5a: Decreased risk when younger than 5 years. | Decreased risk | No effect | - | No evidence |
| H5b: Increased risk between 5 and 10 years. | Increased risk | No effect | - | No evidence |
| H5c: Decreased risk between 10 and 30 years. | Decreased risk | No effect | - | No evidence |
| H5d: Increased risk when older than 30 years. | Increased risk | Increased risk | Only in model 1 and 3. Model 1: Not significant if 1992 is removed. Model 3: robust across years. | Highly plausible, quite robust |
| Size |  |  |  |  |
| H6a: Decreased risk for large organizations. | Decreased risk | Decreased <br> risk | Only model 3. Not significant if 11 different years are removed. | Slightly plausible, although not very robust |
| H6b: Increased risk for very large organizations. | Increased risk | No effect | - | No evidence |
| Geogaphic dispersion <br> H7: Decreased risk when geographically dispersed. | Decreased risk | Decreased risk | Model 1: Robust across years. Model 3: Not significant when controlling for size, although the removal of 8 different years makes it significant. <br> Model 5: Not significant. | Plausible, but most <br> likely a proxy for size |

Table 4.8: Overview of regression results (terminations).

| Empirical expectation | Expected effect | Regression effect (reorganizations) | Robust? | Status |
| :---: | :---: | :---: | :---: | :---: |
| Government turnover |  |  |  |  |
| H2a : Increased risk after a change in government. H2b: Increased risk after a change in responsible minister. | Increased <br> risk <br> Increased risk | No effect <br> No effect | - | No evidence No evidence |
| Government type |  |  |  |  |
| H3a: Risk is lowest under majority coalitions. | Lowest risk | No effect | - | No evidence |
| H3b: Risk is medium under minority coalitions. | Medium risk | No effect | - | No evidence |
| H3c: Risk is highest under single-party governments. | Highest risk | $\begin{aligned} & \text { No } \\ & \text { effect } \end{aligned}$ | - | No evidence |
| Fiscal pressure |  |  |  |  |
| H4: Increased risk when fiscal pressure is high. | Increased risk | No effect | - | No evidence |
| Age |  |  |  |  |
| H5a: Decreased risk when younger than 5 years. | Decreased risk | No effect | - | No evidence |
| H5b: Increased risk between 5 and 10 years. | Increased risk | No effect | - | No evidence |
| H5c: Decreased risk between 10 and 30 years. | Decreased risk | No effect | - | No evidence |
| H5d: Increased risk when older than 30 years. | Increased risk | No effect | - | No evidence |
| Size |  |  |  |  |
| H6a: Decreased risk for large organizations. | Decreased risk | Increased risk | Only model 9. Not significant if 6 different years are removed. | Contrary to hypothesis |
| H6b: Increased risk for very large organizations. | Increased risk | No effect | - | No evidence |
| Geogaphic dispersion |  |  |  |  |
| H7: Decreased risk when geographically dispersed. | Decreased risk | Increased risk | Model 7: Significant if 6 different years are removed. Model 9: Signifcant if 3 different years are removed. | Contrary to hypothesis |

Table 4.9: Overview of regression results (reorganizations).

### 4.3 Robustness of findings

In order to assess the validity of the findings reported in the previous section, the models were checked for influential years. This was done by running the regressions without the observations without one year (for example 2002), repeating this process until all years have been checked. A completely robust finding would return significant coefficients across all years, and not falter upon the omission of influential years. ${ }^{5}$

For terminations, a summary of the results of these tests can be found in the penultimate column of table 4.8. H2a is robust across all years for model 1 and 3, but the removal of year 2000 or 2003 makes the coefficients insignificant in model 5. All in all, this seems to be a fairly robust finding. H5d seems equally robust, although model 1 yields insignificant results if 1992 is removed.

The findings regarding H6a, however, are substantially weakened by the robustness checks. The regression results are dependent on the observations in 11 different years, revealing that the finding is not very robust at all. Similarly, the hypotheses regarding government type are somewhat weakened. The coefficient for single-party governments is not significant if 1998, 2001, 2002 or 2003 is removed from the data.

For reorganizations, the findings are summarized in the penultimate column of table 4.9. As has been discussed already, there are only two significant reported effects. Besides being contrary to the hypothesis, the regression result for H 6 a is not all that robust either, since it depends on the observations in 6 different years. As for geographic dispersion, the effect is also contrary to hypothesis 7, but more robust than for size. In fact, when some years are removed, the coefficient becomes significant when some years are removed (in models 7 and 9).

In addition, the residuals and influence of individual observations were checked for all models. Some observations were identified as problematic through the InfluencePlot function in the car package (see figures A. 18 to A. 23 in the Appendix). These observations were removed and the models were reapplied, but the coefficients hardly changed at all.

[^25]
### 4.4 Model assessment and diagnostics

Like all statistical models, discrete survival models must also meet a series of underlying assumptions. In this section, I will first briefly discuss the underlying assumptions of logit models and whether they have been fulfilled. Secondly, the predictive merits and fit of the models will be assessed. Only models in which government change is included as an independent variable will be considered, meaning models $1,3,5,7,9$ and 11 .

### 4.4.1 Assumptions

Logistic regression has three underlying assumptions (Skog, 2004). First, it is assumed that there is "a linear relationship between any continuous predictors and the logit of the outcome variable" (Field, 2012, p. 321). These models only contain one continuous independent variable; namely income/expenditure balance. In order to test this assumption, an interaction term was added to all models, in which the income/expenditure balance variable was multiplied with the log of itself. The interaction term was not significant in any of the models, indicating that the assumption has been met.

Second, it is assumed that the regression errors are independent of one another. This means that the data points should not be related - which they sometimes inevitably are. For example, the presence of autocorrelation would violate this assumption, and autocorrelation is a frequent occurrence in panel structured data. This assumption can be checked through the Durbin-Watson test, and the results are reported in table 4.10. The DW statistic is reported on a scale from 0 to 4 , where a value of 2 indicates no autocorrelation. A value higher or lower than 2 indicates negative and positive autocorrelation, respectively (Field, 2012, p. 272). The test indicates that there is positive autocorrelation in all models (except model 5), and this is to be expected in any model based on panel data. In any case, the adverse effects of autocorrelation should be countered through the included polynomials in the models.

The third assumption is that independent variables must not be correlated to such an extent that multicollinearity is introduced to the model, since this can bias the coefficients. This assumption can be checked by running VIF statistics, and the results of this test can be found in Appendix A, in table A. 1 and A.2. Very few variables have a VIF value above 5, and no values are above 10 (apart from the

| Model | Autocorrelation | DW Statistic | p-value |
| :---: | :---: | :---: | :---: |
| Model 1 | 0.077 | 1.845 | 0 |
| Model 3 | 0.089 | 1.821 | 0 |
| Model 5 | 0.047 | 1.904 | 0.076 |
| Model 7 | 0.100 | 1.798 | 0 |
| Model 9 | 0.096 | 1.806 | 0 |
| Model 11 | 0.086 | 1.826 | 0.008 |

Table 4.10: Durbin-Watson test.
polynomials, but that is to be expected). Furthermore, figure A. 11 in the Appendix shows that no variables correlate higher than 0.6 or lower than -0.6 (Field, 2012, p. 276). All in all, these tests indicate that all three assumptions are met.

### 4.4.2 Goodness-of-fit

Statistical models must not only meet the required assumptions, but also fit the data. Thus, the Hosmer-Lemeshow test for goodness-of-fit will be used to assess the utility of the models. In addition, the predictive merits of the models will be assessed through ROC curves and separation plots.

## Hosmer-Lemeshow goodness-of-fit

The Hosmer-Lemeshow test is a measure frequently employed to evaluate the goodness-of-fit for logistic regression models. The test indicates whether a model with independent variables can predict the outcome better than a model without independent variables (Christophersen, 2013, p. 138). The test sorts cases together in groups, on the basis of the predicted values in the regression, and compares the expected number of events and non-events with the actual observed number of events and non-events (Hosmer, Lemeshow \& Sturdivant, 2013; Allison, 2013). A significant p-value will normally be assumed to be an indication that the model is a poor fit. However, it can also be the result of a high amount of missing observations, or because the number of groups is incorrectly specified (Christophersen, 2013).

The number of groups can not be theoretically determined, and is normally set to 10. However, as Allison (2013) has argued, this is a quite arbitrary specification
that could have huge effects on the outcome of the test. This is illustrated in the case of model 9 in table 4.11. The test tells us that the deviation between observed and expected values is significant, and that the model (possibly) is incorrectly specified. However, running the same test on with the number of groups set to 11 raises the $p$-value to 0.091 , which is well within the threshold of 0.05 . In any case, the validity of model 9 is partly weakened by this result.

| Model | $\mathbf{x}^{2}$ | df | p-value |
| :--- | :---: | :---: | :---: |
| Model 1 | 14.768 | 8 | 0.063 |
| Model 3 | 9.691 | 8 | 0.287 |
| Model 5 | 7.333 | 8 | 0.501 |
| Model 7 | 11.191 | 8 | 0.191 |
| Model 9 | 20.398 | 8 | $0.008^{* *}$ |
| Model 11 | 7.336 | 8 | 0.500 |

Table 4.11: Hosmer-Lemeshow goodness-of-fit. Number of groups: 10.

## Likelihood ratio test

Table 4.12 shows the results of the likelihood ratio (LR) test on all models. The likelihood ratio denotes the difference in -2LL between a base model (with no independent variables) and a fully specified model (with several independent variables). If the log likelihood of the full model is significantly lower than the base model, the test is passed. The table shows that all models are significant improvements over the base model.

## ROC curves

For a logit model, the ultimate test is prediction. The central question is: How often does it correctly predict the occurrence of an event? In such cases, the ROC curve can be useful. ROC curves describe the model's ability to predict 1 s when there actually is a 1 , by plotting the true positive rate versus the false positive rate. The curve of a good model will be closer to the upper left corner than the striped gray line in the middle. The area under curve (AUC) value is the percentage of the figure that is below the curve. In this context the AUC value denotes the probability that, when faced with two random observations (of which one has a 0 on the dependent

| Model |  | Log Likelihood | -2LL | df | Chi sq. (x2) | p-value |
| :--- | :--- | :---: | :---: | :---: | :---: | :---: |
| Model 1 | Base model | -359.04 | 718.08 | 1 | 54.266 | $0.000 * * *$ |
|  | Full model | -331.91 | 663.82 | 12 |  |  |
| Model 3 | Base model | -311.00 | 622 | 1 | 56.464 | $0.000 * * *$ |
|  | Full model | -282.76 | 565.52 | 16 |  |  |
|  | Base model | -195.64 | 391.28 | 1 | 47.364 | $0.000 * * *$ |
|  | Full model | -171.96 | 343.92 | 16 |  |  |
|  |  |  |  |  |  |  |
| Model 7 | Base model | -316.95 | 633.9 | 1 | 48.021 | $0.000 * * *$ |
|  | Full model | -292.94 | 585.88 | 12 |  |  |
| Model 9 | Base model | -313.85 | 627.7 | 1 | 57.097 | $0.000 * * *$ |
|  | Full model | -285.30 | 570.6 | 16 |  |  |
| Model 11 | Base model | -211.85 | 423.7 | 1 | 57.709 | $0.000 * * *$ |
|  | Full model | -183.00 | 366 | 16 |  |  |

Table 4.12: LR test.
variable and the other has a 1 ), the model will correctly rank the 1 -observation as more likely to be a 1 than the other.

Figure 4.16 shows the ROC curve for model $1 .{ }^{6}$ The curve is above the gray striped line, which means that the model is better at classifying events than random classification. In general, an AUC value of more than 0.7 is preferable, and the AUC value of model 1 is 0.718 - indicating a satisfactory model. The best termination model is model 3 , with an AUC of 0.742 . Model 5 shows signs of having relatively poor predictive utility, with an AUC of 0.658 . This is likely due to a drastically reduced N and event count, but is nevertheless indicative of a poorly fitted model. All the reorganization models have surprisingly good predictive qualities, with AUC values above 0.7. Model 11 has the highest AUC value of all the models, at 0.761 . However, that does not change the fact that most of the coefficients cannot be trusted, and that their theoretical underpinnings appear to be sketchy, at best.

## Separation plots

Separation plots, which have been developed and implemented in R by Greenhill, Ward and Sacks (2011), offer another way to assess the predictive power of a model.

[^26]

Figure 4.16: ROC Curve of logit model 1 (1980-2014), with AUC values. ROC curves for the other models can be found in the appendix.


Figure 4.17: Separation plots of all models.

Here, each observation is ranked according to their fitted value. In other words, the observation least expected by the model to contain an event can be found on the outer left, while the model considered to be most likely to contain an event is located on the far right. A dark red color is ascribed to observations containing events.

In order to read the plot, it can be helpful to envision two extreme cases. Very poor models have vertical lines randomly spread across the entire width, with no separation at all. A perfect model, on the other hand, would completely push all event lines to the right of the plot. Figure 4.17 shows that all models do a fair job at separating events from non-events. The pattern is clearly skewed toward the right, which means that all models do a better job of predicting outcomes than if one were to guess. No models clearly emerge as superior to others, but that is not surprising given that they are very similar. Models 5 and 11 are clearly characterized by a lower event count, which is unsurprising given their shorter time frame (19932014). In any case, the plots make it clear that the models are much better than pure guesswork.

## Chapter 5

## Conclusion

In this thesis, I have attempted to shed light on why the government apparatus is sometimes subjected to radical change. An underlying aim has been to seek an answer to the following question: What are the determinants of structural reform and its composites, reorganization and termination? Put differently, what are the conditions under which structural changes happen, and which organizations are most likely to be subjected to it? The theoretical framework was organized in two sections; "political incentives" detailing the external conditions for structural reform, and "organizational stickiness" describing the importance of agency-specific characteristics.

A secondary objective has been to answer a question that looms in the background of the literature on agency termination. Are terminations conceptually different from other organizational changes, as has been assumed in the literature thus far, or are they driven by, and explained by, the exact same variables? I have attempted to answer these questions by running a series of discrete survival regressions on 142 Norwegian agencies between 1980 and 2014, based on a unique dataset that combines NSA data and various other sources. The regressions were supplemented with descriptive figures.

A central finding is that there should be a clear conceptual distinction between terminations and reorganizations. While there are similarities between them both seem to have had short periods during which they were wildly popular there is no evidence that they are driven by the same dynamics. Some variables are admittedly found to matter, but their effects are contrary to the empirical expectations. Geographically dispersed and large organizations are at higher risk of being reorganized, whereas the hypotheses expected the opposite to be the case.

From these observations, we can extrapolate that termination theory should not be applied to reorganizations, at least not without substantial modification. These findings demonstrate the need for a demarcation between the two concepts. Consequently, "structural reform" is, at best, an umbrella term. Nevertheless, terminations and reorganizations should still be devoted attention as separate concepts. Alternatively, we need to develop new ways of viewing the lifespans and developments of agencies, as Kuipers et al. (2017) suggest.

Another important finding is that an agency's probability of being terminated is nearly tripled after a change of government. This finding clearly indicates that political executives have the opportunity to shape the government's structure in their image, should they so desire. Furthermore, it implies that termination is a tool which is often employed for political reasons, serving the symbolic purpose of making political executives appear ready and able to "act." Moreover, while the finding undoubtedly is driven by four "agency purges" in 1992, 1997, 2001 and 2003 , it suggests that the timing of structural change is not coincidental. Terminations are sensitive and controversial, and require the amassment of political capital, resources and consensus - all of which are maximized when a new government assumes office.

However, that is not to say that any agency can be terminated at any time. In fact, another finding suggests that agency-specific characteristics are crucial factors in the question of whether to terminate or not. For example, agencies with 140 to 249 employees have a 60 to 80 percent lower chance of being terminated than agencies with fewer than 20 employees. Similarly, geographically dispersed agencies are 70 percent less likely to be terminated than non-dispersed agencies (although there are indications that dispersion is a proxy for size). In other words, large and geographically dispersed agencies seem to enjoy an extra layer of insulation from the ebb and tide of politics, while smaller agencies are incapable of resisting terminal change. Furthermore, there are indications that agencies older than 30 years old are exposed to higher risk of termination than their newborn counterparts. These observations clearly imply that there are limits to the grasp of politicians, and that agencies have the opportunity to successfully resist radical change. Alternatively, it can mean that executives do not feel a need to terminate large, dispersed and young agencies.

Various null-findings are also brought to the surface by the empirical results. The appointment of a new minister seems to have no effect on termination risk.

In light of the finding on government change, this implies that the influence of individual ministers should not be overstated. Most likely, numerous actors are involved in the reshaping of government structure. Furthermore, fiscal pressure appears to have no effect on the risk of termination. It should be noted that this result could simply be attributed to Norway having few economic woes throughout the entire observation period. Finally, the effect of government type is dubious, at best. While one model does indicate that government type matters, this result is most likely determined by a few very influential governments (which happen to be one type rather than another). In any case, this effect is only found between 1993 and 2014, implying a non-robust finding.

Future studies of termination in Norway should concentrate their efforts on expanding the array of independent variables which can be incorporated into similar models as those presented here. There is no shortage of theoretically promising indicators, provided that data is available. Examples include type of establishing decree/procedure and agency function (Boin et al., 2010), autonomy and agency type (O'Leary, 2015), or media attention and performance (James et al., 2016). Due to a lack of data, it was unfortunately not possible to include variables tapping into these phenomena in the preceding models.

Moreover, considerable efforts should now be devoted to theory-building. For example, we know little of how different political systems affect the prospects for termination. This thesis has merely made a first cut at adapting hypotheses generated elsewhere to a Norwegian context, and much more can be done to develop more general theories. This can constitute the basis for large N studies where several countries are included.

We also know very little of the relationship between reorganization and termination, if there is one. Large organizations seem to be proficient at resisting termination, but they are ostensibly incapable of avoiding reorganizations. It begs the question of whether agencies agree to reorganizations as part of a strategy to avoid termination - avoiding radical change by accepting "softer change," as the table of Adam et al. (2007) suggested (page 17). Is the risk of termination reduced after an agency is reorganized?

Finally, we need more robust theory to explain the occurrence of reorganizations. The descriptive figures clearly illustrate that reorganization is a tool that is frequently used, and it must be better understood. Hopefully, this will result in the identification of determinants that are unique to reorganizations, opening the
possibility of specifying models that are custom-made to explain why they happen. Having now provided indications that they are separate from terminations, proper theory-building can commence.

## Appendix A

## Statistics

## A. 1 Distributions

## A.1.1 Termination



Figure A.1: Distribution of termination.

## A.1. 2 Reorganization



Figure A.2: Distribution of reorganization.

## A.1.3 Government change



Figure A.3: Distribution of the government change variable.

## A.1.4 Minister change



Figure A.4: Distribution of the minister change variable.

## A.1.5 Geographic dispersion



Figure A.5: Distribution of the geographic dispersion variable.

## A.1. 6 Government type



Figure A.6: Distribution of the government type variable.

## A.1.7 Size



Figure A.7: Distribution of the imputed size variable.


Size category (non-imputed)
Figure A.8: Distribution of the non-imputed size variable.

## A.1.8 Age



Figure A.9: Distribution of the age variable.

## A.1.9 Income/expenditure balance



Figure A.10: Histogram of the income/expenditure variable.

## A. 2 Model robustness and diagnostics

## A.2.1 Correlation plot



Figure A.11: Correlation plot of included variables.

## A.2.2 VIF statistics

| Model | VIF | Df |
| :--- | :--- | :--- |
| Model 1 |  |  |
| Government turnover | 1.392 | 1 |
| Minority single-party | 2.162 | 1 |
| Majority coalition | 2.111 | 1 |
| Income/expenditure balance | 4.554 | 1 |
| Geographic dispersion | 1.073 | 1 |
| Age (5-10) | 1.906 | 1 |
| Age (10-30) | 2.742 | 1 |
| Age (30+) | 2.727 | 1 |
| Polynomial | 7.466 | 3 |
|  |  |  |
| Model 3 |  |  |
| Government turnover | 1.436 | 1 |
| Minority single-party | 2.233 | 1 |
| Majority coalition | 2.127 | 1 |
| Income/expenditure balance | 4.571 | 1 |
| Geographic dispersion | 1.412 | 1 |
| Age (5-10) | 2.281 | 1 |
| Age (10-30) | 3.923 | 1 |
| Age (30+) | 3.827 | 1 |
| Size (20-69) | 1.357 | 1 |
| Size (70-139) | 1.248 | 1 |
| Size (140-249) | 1.261 | 1 |
| Size (250+) | 1.539 | 1 |
| Polynomial | 7.598 | 3 |
| Model 5 |  |  |
| Government turnover | 23.827 | 3 |
| Minority single-party | 4.334 | 1 |
| Majority coalition | 2.591 | 1 |
| Income/expenditure balance | 5.844 | 1 |
| Geographic dispersion | 1.363 | 1 |
| Age (5-10) | 2.025 | 1 |
| Age (10-30) | 2.715 | 1 |
| Age (30+) | 2.742 | 1 |
| Size (20-69) | 1.497 | 1 |
| Size (70-139) | 1.521 | 1 |
| Size (140-249) |  |  |
| Size (250+) |  |  |
|  |  |  |

Table A.1: VIF values for models 1, 3, and 5.

| Model | VIF | Df |
| :--- | :--- | :--- |
| Model 7 |  |  |
| Government turnover | 1.759 | 1 |
| Minority single-party | 2.337 | 1 |
| Majority coalition | 3.476 | 1 |
| Income/expenditure balance | 4.378 | 1 |
| Geographic dispersion | 1.127 | 1 |
| Age (5-10) | 1.460 | 1 |
| Age (10-30) | 1.678 | 1 |
| Age (30+) | 1.827 | 1 |
| Polynomial | 13.719 | 3 |
|  |  |  |
| Model 9 |  |  |
| Government turnover | 1.757 | 1 |
| Minority single-party | 2.347 | 1 |
| Majority coalition | 3.487 | 1 |
| Income/expenditure balance | 4.406 | 1 |
| Geographic dispersion | 1.353 | 1 |
| Age (5-10) | 1.469 | 1 |
| Age (10-30) | 1.768 | 1 |
| Age (30+) | 1.874 | 1 |
| Size (20-69) | 5.002 | 1 |
| Size (70-139) | 4.266 | 1 |
| Size (140-249) | 4.551 | 1 |
| Size (250+) | 6.631 | 1 |
| Polynomial | 13.865 | 3 |
| Model 11 |  |  |
| Government turnover | 3.085 | 1 |
| Minority single-party | 3.075 | 1 |
| Majority coalition | 9.058 | 1 |
| Income/expenditure balance | 3.010 | 1 |
| Geographic dispersion | 1.340 | 1 |
| Age (5-10) | 1.839 | 1 |
| Age (10-30) | 2.391 | 1 |
| Age (30+) | 2.518 | 1 |
| Size (20-69) | 3.800 | 1 |
| Size (70-139) | 2.568 | 1 |
| Size (140-249) | 3.603 | 1 |
| Size (250+) | 5.31 | 1 |
| Polynomial |  |  |
|  |  |  |

Table A.2: VIF values for models 7, 9, and 11.

## A.2.3 Pseudo $\mathbf{R}^{2}$

| Model | McFadden | Adj. McFadden | Cox Snell | Nagelkerke |
| :---: | :---: | :---: | :---: | :---: |
| Model 1 | 0.0755 | 0.0393 | 0.0219 | 0.0862 |
| Model 3 | 0.0907 | 0.0361 | 0.0238 | 0.1021 |
| Model 5 | 0.1210 | 0.0341 | 0.0331 | 0.1363 |
| Model 7 | 0.0757 | 0.0347 | 0.0206 | 0.0857 |
| Model 9 | 0.0909 | 0.0367 | 0.0255 | 0.1031 |
| Model 11 | 0.1362 | 0.0559 | 0.0434 | 0.1561 |
| Model | McKelvey Zavoina | Effron | AIC | Corrected AIC |
| Model 1 | 0.1909 | 0.0312 | 687.814 | 687.942 |
| Model 3 | 0.2150 | 0.0344 | 597.526 | 597.760 |
| Model 5 | 0.3026 | 0.0578 | 375.912 | 376.305 |
| Model 7 | 0.1762 | 0.0317 | 609.888 | 610.024 |
| Model 9 | 0.2713 | 0.0356 | 602.606 | 602.855 |
| Model 11 | 0.4550 | 0.0486 | 397.995 | 398.419 |

Table A.3: Various measures of pseudo $\mathrm{R}^{2}$.

## A.2.4 ROC curves



Figure A.12: ROC Curve of model 1 (1980-2014), with AUC values.


Figure A.13: ROC Curve of model 3 (1980-2014), with AUC values.


Figure A.14: ROC Curve of model 5 (1993-2014), with AUC values.


Figure A.15: ROC Curve of model 7 (1980-2014), with AUC values.


Figure A.16: ROC Curve of model 9 (1980-2014), with AUC values.


Figure A.17: ROC Curve of model 11 (1993-2014), with AUC values.

Appendix A. Statistics

## A. 3 Influence plots



Figure A.18: Influence plot of model 1 (1980-2014).


Figure A.19: Influence plot of model 3 (1980-2014).


Figure A.20: Influence plot of model 5 (1993-2014).


Figure A.21: Influence plot of model 7 (1980-2014).


Figure A.22: Influence plot of model 9 (1980-2014).


Figure A.23: Influence plot of model 11 (1993-2014).



Figure A.24: COFOG classifications of agencies by year.

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[^0]:    ${ }^{1}$ I will use the terms 'central agency' and 'agency' interchangeably. For details on definitions, see page 5 .

[^1]:    ${ }^{2}$ See page 6 for an elaboration of this concept.

[^2]:    ${ }^{3}$ An exception is the agencification literature, which is concerned with why agencies are created - see for example Pollitt, Bathgate, Caulfield, Smullen and Talbot (2001).

[^3]:    ${ }^{4}$ For other examples of studies on agency termination, see Geva-May (2004), James et al. (2016), MacCarthaigh (2010), Maccarthaigh (2014), O'Leary (2015), Park (2013), Rolland and Roness (2012). A deeper discussion of the termination literature can be found on page 20.

[^4]:    ${ }^{5}$ In this context, reform as a concept is understood in a slightly narrower sense than in the wider reform literature. Pollitt and Bouckaert (2011, p. 2), for example, are also concerned with changes in process, not only structure. Furthermore, Lægreid, Rolland, Roness and Aagotnes (2003, p. 7) make a very valid point that it is important to distinguish between reform and change, since reforms do not always lead to change and changes are not always the result of reforms. For semantic reasons, however, this thesis will utilize 'reform' instead of 'change' or 'transitions' in order to communicate that only very significant changes are included.

[^5]:    ${ }^{6}$ According to Grønlie and Flo (2009), this politicization of ministries has continued into the present day.

[^6]:    ${ }^{1}$ This could have formed the basis for a reorganization-specific hypothesis, along the lines of "organizations with a high degree of organizational stickiness are more likely to be reorganized rather than terminated". However, the article authors are very vague in terms of what the underlying mechanics are. This makes it hard to develop a hypothesis from their theories.

[^7]:    ${ }^{2}$ In fact, it undoubtedly is an idealized version of reality. After all, it is meant to be a vision.

[^8]:    ${ }^{3}$ Lewis considers an agency as terminated if it has been wholly eliminated with all of its functions, or had its name, location and function changed. Mergers or absorptions are not counted (Lewis, 2002, p. 92).
    ${ }^{4}$ To illustrate this with a more contemporary example, recall Rick Perry's gaffe during a 2011

[^9]:    US Presidential debate. While the debate was widely publicized due to Perry blurting "Oops" after failing to recall the name of a government agency he would have liked to terminate, his intent was representative of a broader Republican view that some government agencies are redundant and unnecessary (Hechtkopf, 2011).
    ${ }^{5}$ A unified government occurs when one party controls both houses of Congress as well as the White House.

[^10]:    ${ }^{6}$ There is no clear pattern as to when legislative consent is required, and when it is not. The Norwegian Parliament is usually consulted when the government wishes to implement major administrative reforms, as such reforms can require changes to multiple laws. Furthermore, some agencies are established by law - such as Statistics Norway - and a legislative majority is required to terminate these organizations. Unfortunately, no overview or list of such agencies exists.

[^11]:    ${ }^{7}$ Although not directly transferable to the public sector, research from in the private sector seems to back up these arguments, revealing that small organizations tend to have lower survival rates and are in general more vulnerable than larger organizations - referred to as a "liability of smallness" (Aldrich \& Auster, 1986; Adam et al., 2007, p. 226).
    ${ }^{8}$ AusAID was not terminated entirely, but absorbed back into the Department of Foreign Affairs and Trade.

[^12]:    ${ }^{1}$ The importance of accounting for right-censoring and left-truncation is discussed in section 3.2.

[^13]:    ${ }^{2}$ See section 3.4 for a deeper discussion of the construction of this data frame.

[^14]:    ${ }^{3}$ These are approximate name translations made by the author.
    ${ }^{4}$ See part 3.3 for more details on how such circumstances have been handled.

[^15]:    ${ }^{5}$ Lewis (2002, p. 93) points out that, unfortunately, hazard models implicitly assume that censored observations will eventually die, although it is completely possible that some agencies never will. This is a potential source of estimate bias, but one that is very hard to counter - many duration models within political science suffer from the same problem.

[^16]:    ${ }^{6}$ As seen in table 3.3, terminations due to mergers and absorptions are also counted as terminations here. This is in line with Peters and Hogwood (1988), but diverges from the operationalizations of other authors, such as Lewis (2002). Unfortunately, there is no other way to operationalize terminations in Norway, as there are far too few "pure terminations" ( $\mathrm{N}=8$ ) to employ a more strict definition.

[^17]:    ${ }^{7}$ See Statskonsult's page for an example of a unit history: http://www.nsd.uib.no/polsys/data/ forvaltning/enhet/29600/endringshistorie

[^18]:    ${ }^{8}$ The exceptions being Brundtland I and II, Willoch II and Stoltenberg I.

[^19]:    ${ }^{9}$ Søyland's minister data and documentation is available through https://github.com/martigso/ ministersNor. I would like to thank him for making this accessible.

[^20]:    ${ }^{10}$ More info can be found here: https://www.ssb.no/en/offentlig-sektor/statistikker/offinnut

[^21]:    ${ }^{1}$ Models where both variables were included were found to inflate the two coefficients significantly, with odds ratios for government change rising up to between 6 and 10 , and the minister variable well below 1 (both significant at the $95 \%$ level). Separating them is thus the more prudent solution, which reduces the risk of committing a type I error.

[^22]:    ${ }^{2}$ The median values used are as follows - Geographic dispersion $=0$, age $=10-30$ years old, size $=70-139$ FTEs, year $=1996$, income/expenditure balance $=7.602$, government type $=$ minority single-party, government change $=1$.

[^23]:    ${ }^{3}$ Some alternative models were also specified, in which both variables were included but only ministerial changes occurring outside of government changes were coded as 1 . Once again, the minister variable returned negative and insignificant results, which could be an indication that the variable is irrelevant.

[^24]:    ${ }^{4}$ This observation also has implications for the hypotheses connected to the validity structural reform, but this is discussed in section 4.2.7.

[^25]:    ${ }^{5}$ The complete results of these robustness checks can be accessed in an html-format here: http: //bit.ly/2r3twug. The folder also includes checks for influential governments, but this will not be discussed here since the removal of up to 8 years simultaneously obviously negates the findings in any model of rare events.

[^26]:    ${ }^{6}$ The ROC curves for the other models can be found in the appendix, in figures A. 12 to A.17.

