Civil Service Reform in U.S. States: Structural Causes and Impacts on Delegation*

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Abstract

This paper studies the causes and consequences of civil service reforms creating an independent bureaucracy – that is, moving from a spoils system (where the civil service is controlled by politicians) to a merit system (where bureaucrats are more independent). We first demonstrate theoretically that divided government is a key trigger of civil service reform: legislators have a stronger incentive to establish an independent bureaucracy when their interests diverge from the governor's. Taking this idea to comprehensive civil service reforms in U.S. states in the second half of the 20th century, we find that states tended to introduce stronger merit systems when there was divided government. Next, we examine the impact of these reforms on legislation using new methods from computational linguistics. We find that after civil service reform, legislators start writing more detailed statutes that contain more legal provisions. This is consistent with an agency cost model where a more independent bureaucracy requires more specific instructions to avoid bureaucratic drift, rather than an expertise model where a more professionalized bureaucracy should be given more discretion.

1 Introduction

Early versions of democratic government featured a spoils system, where the bureaucrats tasked with implementing policies were closely aligned with and controlled by the same party politicians that legislated those policies. A major development in 20th-century politics was the development of civil service reforms which sought to give greater independence to bureaucrats. These reforms introduced professionalized civil service careers, filled by merit rather than by party loyalty, where bureaucrats had tenure across ruling administrations and protections against political interference.

This paper investigates the causes and consequences of these reforms, with three major contributions. First, we provide a new model of the choice between a spoils system and an independent bureaucracy. In the model, civil service reforms are easier to rationalize in periods of divided government (and consequent gridlock). Second, we provide empirical evidence that civil service reforms in U.S. states have occurred with significantly greater frequency during periods of divided government. Third, in an analysis of the consequences of the reform, we show that civil service reforms lead to more detailed legislation.

This work adds to the literature on the role of bureaucracies in democratic regimes. Previous work suggests the centrality of electoral incentives in civil service reform. In one major strand of the literature (the "insurance" view), an incumbent party accrues private benefits from the patronage system but entrenches the bureaucracy through reform when it is about to lose (Ting, Snyder, Hirano and Folke 2013). In the other major strand (the "investment" view), an independent civil service is introduced to increase the efficiency of public goods production by government agencies (Huber and Ting 2016). Considering the role of party polarization, the two views can be reconciled: incentives to invest in an independent bureaucracy will be higher if the opposition has preferences which are not so far from those of the incumbent party (Huber and Ting 2016).

The insurance view as well as the investment view are attempts to rationalize the decision of a party in power to reform the bureaucracy, but such rational explanations involving a

single party in power may be sufficient only when the value politicians attach to the provision of public goods is sufficiently higher than the weight given to policy dimensions where parties are polarized. On the other hand, we argue, when the value politicians attach to provision of public goods is low and polarization is high, civil service reform is more likely under divided government. Our first contribution is to demonstrate this with a simple model, and then to display robust empirical evidence of the role of divided government.

In our simple model, politicians have two ways to increase their utility when choosing policies: (1) following ideology and (2) following a common-values policy objective. When politicians attach higher value to the common-values objective, there are no incentives for civil service reform regardless of whether government is unified or divided. But when politicians attach higher value to ideology, there is a preference for civil service reform under divided government. This is because under divided government, gridlock makes it difficult to change the policy from the status quo. With civil service reform, the independent bureaucracy can at least follow the common-values objective.

We test the main implication of our model by looking at the relation between introducing an independent bureaucracy and divided government in U.S. states during the 20th century. These reforms had three major components: meritocratic recruitment, political independence, and tenure. As a result of these reforms, the direct influence politicians had exerted on bureaucrats under the spoils system decreased drastically.[1] Our panel approach uses state and year fixed effects to address the major sources of selection bias at the state level. We find that states with divided control of state government were more likely to introduce civil service reforms. The result is robust to different measures of divided government and to the inclusion of a range of time-varying state-level covariates.

In the second part of the paper, we provide novel evidence on the consequences of civil service reform. In particular, we look at how the detail of legislation changes in response to the reform. According to the delegation literature (Huber and Shipan 2002, 2008), an independent bureaucracy may result in agency drift. As such, legislators would want to put

into place a series of control mechanisms in order to restrain the bureaucracy, such as writing more detailed laws. On the other hand, in a professionalism model (e.g. Ash and MacLeod 2015), a more technocratic civil service could make better decisions with more discretion, and so legislative detail would decrease.

To distinguish between these models, we analyze changes in the detail of U.S. state legislation in response to the introduction of civil service reforms. We introduce a measure of the level of detail of legislation based on recent developments in computational linguistics. Although some work has used hand-coded data sets on legislation (Huber and Shipan 2002), and other work has used supervised learning methods to study legislative content (Ash 2016; Al-Ubaydli and McLaughlin 2017; Vakilifathi 2017), there is little work on measuring legislative detail using syntactic parser methods. Using both lexical and syntactic information, our information extraction approach is designed to extract legally relevant provisions from texts. We apply this method to a unique dataset which consists of the full text of U.S. state session laws from 1900 to 2000. We find that the introduction of the merit systems across U.S. states is associated with statutes containing more legal provisions. This is consistent with the delegation model, rather than the professionalism model; in response to the civil service reform, legislators introduce stronger ex ante control mechanisms to discipline the more independent bureaucracy.

These results contribute to three strands in the literature. First, the theoretical argument and empirical evidence on the role of divided government highlights a previously missing link between the political economy of civil service reform (Ting et al. 2013; Huber and Ting 2016) and the delegation literature (Epstein and O'Halloran 1994, 1999; Volden 2002*b*). Second, by applying a new method to extract information from statutes, we find empirical evidence for a long standing claim of the delegation literature, namely that a more independent bureaucracy requires more specific instructions to avoid agency drift (Huber and Shipan 2002, 2008). Third, this work is obviously relevant also for those studies linking divided government with detailed legislation (Huber and Shipan 2002, 2008) and those studying bureaucratic capacity

(Huber and McCarty 2004). Our findings suggest that the link between divided government with detailed legislation is not direct, but mediated by the introduction of an independent bureaucracy.

The paper is organized as follows. Section 2 provides a historical and literature background. The rest of the paper then unfolds with the model (Section 3), the impact of divided government on civil service reform (Section 4), and the impact of civil service reform on legislative complexity (Section 5). Section 6 concludes.

2 Background: Divided Government and Civil Service Reform

This section provides background on civil service reform in the United States. After outlining the history, we proceed to discuss the traditional explanations for civil service reform provided by the literature, which focus mostly on the provision of public goods and the creation of private benefits. Finally, we show how the political economy literature has recently made sense of these traditional explanations by looking at legislators' electoral incentives. Political economists have tried to reconcile the two contrasting views by going beyond models of civil service reform based on single party motivations and focusing on the strategic interaction between parties.

2.1 A Brief History

In 1801, the presidency changed hands for the first time in history and the issue emerged of how to deal with politically affiliated public servants (Congress 1976). The newly elected president Thomas Jefferson opted for a strategy of equal division of government offices between parties, which was then followed by his successors (Congress 1976). Until the 1830s, relatively low turnover and high stability characterised the federal civil service. By the mid-1830s under Andrew Jackson, patronage criteria started to dominate the recruitment of civil

servants and arbitrary removal for political reasons became a widespread practice (Theriault 2003). At the end of the 19th century, as Hoogenboom (1959, p.301-302) put it, 'a civil servant would almost certainly be removed if he ceased his political activities or if his patron lost his influence'. Civil servants had varied and irrelevant backgrounds, were hired on a temporary basis and their morale was very low (Hoogenboom 1959). This led to very low levels of professionalization of civil servants, high instability in the provision of public goods and a disproportionate power of politicians (Hoogenboom 1959; Congress 1976).

After the civil war, several attempts at reforming the civil service were made, but they all failed. In the 1870s some minor provisions were passed through executive orders (Naff, Riccucci, Shafritz, Rosenbloom and Hyde 2001; Shafritz 2012). During the Hayes presidency various civil service reform associations were established, with the New York civil service reform association as the first one (Congress 1976). In 1881, the newly elected President Garfield was shot by a job seeker disappointed by the patronage system (Hoogenboom 1959; Dresang 1982; Naff et al. 2001; Theriault 2003; Shafritz 2012). This sparked national attention to the issue of civil service reform. In the same year, Senator Pendleton presented a bill to the Senate, which was approved two years later (Hoogenboom 1959; Congress 1976; Naff et al. 2001; Theriault 2003). The Pendleton Act established three principles in civil service: competitive examination, political neutrality, and security of tenure (Hoogenboom 1959; Congress 1976; Skowronek 1982; Shafritz 2012). In other words, civil servants started to be hired and promoted based on examination and no removal on political (and religious) grounds was allowed (Hoogenboom 1959). [1] As reported by Hoogenboom (1959), almost half of the entire civil service was covered by this act by 1900. It should also be noted that a good portion of the civil servants covered by the act were top-level bureaucrats (Hoogenboom 1959).

Beginning in the 1880s through the 1920s, Congress passed a series of minor laws which

[1] It should be noted that the Civil Service Commission in charge of implementing the reform put more efforts in enforcing some principles over others. For instance, since the very beginning the commission strongly focused on competitive examination, whereas only a few decades after its establishment started focusing on competitive promotions.

sought to strengthen the merit system. These included the 1912 Lloyd-La Follette Act, which improved protection from dismissal (Huber and Ting 2016). Finally, by the 1930s, two main pieces of legislation were enacted. First, the 1930 Hatch Act sought to restrict political activity by civil servants (Congress 1976). Second, in 1939 the Congress amended the Social Security Act, requiring the establishment of merit systems in those state departments cooperating with the administration of the Act. By the beginning of WWII, a strong merit system was in place at federal level and it was not subject to any major change until the Civil Service Reform Act in 1978, which established performance review and merit pay, and the 1993 National Performance Review, which continued along the line of increasing public servants' accountability and reducing their independence (McGrath 2013).

Civil service reforms at the federal level triggered an active debate at the state level. [2] Nonetheless, 50 years after the Pendleton Act, only nine states had introduced comprehensive merit systems in the spirit of that act, namely systems characterised by meritocratic recruitment, bureaucratic tenure and political independence. The real push came with the 1939 amendment to the Social Security Act. In response to this, states adopted limited merit systems covering all agencies administering funds under this act (Ujhelyi 2014). Simultaneously and in some cases independently from the pressure from the federal level, states started to reform their civil service in a radical way. New York and Massachusetts were the first states to implement a comprehensive merit system at the end of the 19th century. These were followed by most of the states before WWII and a few laggards in the 1950s and 1960s. More recently, starting with Georgia in 1996, several states have undergone a process of decentralization of the state personnel system (McGrath 2013), with the objective of improving accountability and performance, along the line of the 1993 National Performance Review.

[2] It should be noted that the initial stimulus for reform at federal level came from the New York civil service reform association. Policy diffusion between the federal and the state level was not exclusively top-down.

2.2 Public Goods and Private Benefits

Several factors are considered relevant for civil service reform across the U.S. states. Traditional explanations focus on the reformist movement for good government of the 19th century (Johnson and Libecap 1994; Kernell and McDonald 1999; Weber and Brace 1999; Ruhil and Camões 2003; Theriault 2003; Folke, Hirano and Snyder 2011; McGrath 2013; Housel 2014; Ujhelyi 2014). At the end of the 19th century, a militant minority composed of politicians from both parties and civil society members started to exert increasing pressure on the federal government to improve the efficiency of bureaucracy (Johnson and Libecap 1994).

Similar dynamics were in place at the state level. In 1950s Oklahoma, for example (Housel 2014), an advocacy coalition composed of newspapers, educators, a few legislators, and the League of Women Voters was behind the governor's efforts to introduce a comprehensive civil service reform. The reform extended merit principles to most state employees.

The reason for the emergence of this progressive movement was arguably the perceived inefficiency of the patronage system. A spoils system meant a bureaucratic system characterised by high turnover (especially for high level positions) and mismanagement of human resources (Johnson and Libecap 1994; Folke, Hirano and Snyder 2011; McGrath 2013; Housel 2014; Ting et al. 2013). Under a patronage system, at every change in government, a high share of employees used to be fired and new ones hired. In 1950s Pennsylvania, more than two thirds of public employees in highway positions changed jobs when Democrats took power (Sorauf 1959). In Michigan, a constitutional amendment aimed at watering down merit rules increased personnel turnover from 18 percent in 1936 to almost 28 percent in 1939 (Litchfield 1941).

High turnover was coupled with a serious mismanagement of human resources. Civil servants were not hired or allocated according to efficiency criteria, but according to political affiliation and also other aspects, such as friendship and ethnicity (Sorauf 1959; Johnston 1979). Civil servants were supposed to spend a good portion of their working time (as

well as their salary) participating in political activities, such as attending political meetings, canvassing voters, and so on (Hoogenboom 1959; Ting et al. 2013). [3] In this spoils system the power of politicians on state civil servants was strong, much stronger than that of business.

The consequences of this system were drastic: a huge loss of resources, amounting to millions of dollars in some states (Housel 2014); loss of trust in the government (Housel 2014); a very low consideration for public service as an occupation (Stahl, Mosher et al. 1956); strong sense of insecurity in public employment (Sorauf 1959); low salaries, especially compared with the private sector (Folke, Hirano and Snyder 2011). The traditional explanations focusing on the reformist movement for a good government were later incorporated into a more contemporary public management approach to civil service reform (McGrath 2013).

While the explanations discussed above focus on the incapacity of patronage systems to create public goods, other explanations looked at the private benefits the patronage system used to create for specific constituents. [4] Some studies emphasise the variation in preferences between different constituencies to which different bodies were accountable as a crucial factor determining the introduction of the merit system. As Housel (2014) points out with respect to the introduction of a comprehensive civil service in Oklahoma, traditionally the legislature used to represent the rural part of the state, whereas the governor the urban part, which used to benefit the most from the patronage system. These dynamics are also found at the federal level, where the introduction of rural free delivery routes, a central part of the programme which replaced the patronage system in the postal office, became central for Republicans to gain the support from farmers in key areas (Kernell and McDonald 1999).

[3] For instance, in 1882 in Virginia civil servants were assessed five per cent by local politicians (i.e. they were supposed to contribute five per cent of their salary to the local party) (Hoogenboom 1959).

[4] In line with this, some work has focused on the 'party explanation' for the introduction of the civil service reform at federal level, which looks at parties' internal dynamics (Skowronek 1982; Theriault 2003). The focus on parties is more appropriate at the federal level, whereas at the local level central parties did not play a major role in the spoils system.

2.3 Reconciling the Two Contrasting Views

Recent work in political economy has tried to make sense of these two contrasting views by looking at the electoral incentives behind legislators' behaviour. Huber and Ting (2016) distinguish between the so-called "insurance" and "investment" views.

The "insurance" view suggests that incumbents will favour civil service reform when they are electorally vulnerable (Skowronek 1982; Geddes 1994; Ruhil and Camões 2003; Ting et al. 2013). According to Ting et al. (2013), the incumbent party will create an independent bureaucracy when it is losing ground, to avoid that the other party gets in control of the bureaucracy under a spoils system. The intuition of this model is that for the incumbent party, an independent civil service is preferable to a spoils system controlled by the opposing party. This follows from an electoral advantage to incumbency due to a spoils system. With a merit system, moreover, the incumbents can lock in both policies and loyal employees as agents, at least in the short term (Ruhil and Camões 2003; Ujhelyi 2014).[5]

Conversely, the "investment" argument says that incumbents will favour delegation when they are electorally secure, as politicians need the assurance of remaining in power to reap the benefits of delegation (Huber and Ting 2016). This logic is in line with those explanations discussed above that focus on the efficiency of the bureaucratic system in creating public goods.

In sum, the insurance view emphasises that a spoils system is good for the incumbent in electoral terms, as it provides private benefits to key constituents, whereas the investment

[5]According to Enikolopov (2014), patronage allows targeting of a particular group of voters and solving the commitment problem in vote buying. Some historical accounts, however, suggest that patronage systems were not such effective vote machines. In a detailed study of the patronage system in Pennsylvania in the mid-1950s, Sorauf (1959) finds that patronage in highway jobs often failed to create loyal voters and activists. Although political appointment is found to trigger party contributions, hence is effective in extracting political activity among highly skilled jobs, most of the time local parties used to work as recruitment agencies, hiring people to fill in low skilled jobs, with little political purpose (Sorauf 1959). Moreover, patronage benefits were dispensed not only according to loyalty but also according to different logics, such as friendship and ethnicity (Sorauf 1959; Johnston 1979). As such, patronage was not as effective in creating electoral benefits for the party in power as the mainstream literature would suggest. Rather, it sometimes might have had the opposite effects. Indeed, Schattschneider (1942) finds that patronage used to advantage 'local bosses' against central parties. Patronage used to reinforce a series of centrifugal tendencies which tended to erode party cohesion, hence threatening electoral benefits (Schattschneider 1942).

view suggests that a merit system is better able to create public goods, hence increasing public support for the party in power and for government in general.

These two views can be nested in a unique framework focusing on party polarization. The model proposed by Huber and Ting (2016) assumes that incumbents choose the mix between patronage appointees, functional to provide private benefits, and civil servants, functional to generate public goods, depending on the opposing party's preferences. Investments in good government accrue benefits in the future and help the opposing party once they get into power. Therefore incentives to invest in civil service will be higher if the opposition has similar policy preferences. This is still dependent on the prospect of winning, however; when the incumbent is electorally vulnerable, the incumbent puts greater weight on the opposition's preferences.

As a complement to these recent insights, we can now propose a simple model that shows how these considerations are particularly relevant when considering the possibility of divided government.

3 A Simple Model to Illustrate the Role of Divided Government

In this section, we explore the role of party polarization and the value politicians attach on the provision of public goods in civil service reforms. The extant approaches to civil service reform have focused on the incentives to make the reform by a single party controlling the government. We show that a civil service reform made by a single party controlling the government can be rationalized only if and when the value politicians attach to the provision of public goods (inversely related to polarization) is high. In this case, civil service reform could occur also under unified government. However, when the value politicians attach to provision of public goods is low, namely polarization is high, civil service reform is more likely under divided government.

Assume that politicians are motivated by information and ideology. [6] For example, slow economic growth with lower-than-expected investments might signal the need for lower interest rates, and a politician should be influenced by this information (or realization of a state of Nature) regardless of her ideology. Given that both ideology and information matter for politicians, the intuitive difficulty in presence of a divided government is that if a party proposes to make policies in line with the realization of the state of Nature but such policies are ideologically opposed by the other party, a situation of gridlock can prevail. The inclusion of gridlocks in a model of civil service reform is close in spirit to those models that take into account the veto power of the executive on the legislature in matters of delegation to independent agencies (Volden 2002*b*).

An independent bureaucracy usually has a flexibility advantage over politicians in terms of following the changes in the state of Nature. To reflect this, we assume below that in case of delegation to an independent bureaucracy the latter will always follow Nature automatically.[7]

Take two parties, L and R, positioned at the extremes of the policy spectrum (respectively, at -1 and 1), and let the status quo of the policy be in between them (at 0). We assume a natural shock that gives information to politicians about which direction the policy should move from the status quo. For instance, a slow economic growth might signal the need for a change in fiscal policy. Formally, we assume that natural shocks will require the policy to move from 0 either to -1 or to 1. More specifically, let us consider the illustrative case in which 50 per cent of the time Nature will require the policy to move to -1 and the other 50 per cent of the tims to 1. Also, politicians do not know ex ante which way the information

[6] We consider directly a reduced form, since for the argument we assume it is irrelevant whether politicians' ideological utility and common value utility components are intrinsic preferences or are derived by what voters want.

[7] In this model, delegation to an independent bureaucracy represents a credible commitment to follow Nature, in line with some work in political science (Shepsle 1991; Gilardi 2002). This is also supported by empirical evidence: Krause, Lewis and Douglas (2006) finds that (low ranking) civil servants hired under a merit system performs better and **?** find that meritocratic recruitment reduces corruption. For simplicity reasons, we do not focus on the expertise aspect of a principal-agent relation. Results would not change significantly.

conveyed by the shock will go.

Let ι be an indicator function which takes value 1 when the policy moves towards the direction suggested by Nature and 0 otherwise. Let ϵ be the common value that politicians attach to following Nature. Hence, the expected common value component of the policy is equal to $\iota\epsilon$, which equals ϵ when the policy follows Nature and 0 otherwise. On top of this common value component, the politician L has a standard loss function equal to $-|x+1|$ (for the politician R, this function is $-|x-1|$), where x is the value assumed by the policy. The utility of the politician L is

$$U_L = -|x+1| + \iota\epsilon \tag{1}$$

Building on this, we can calculate the expected utilities under unified and divided government for the scenarios where decisions are left to politicians and where they are delegated to independent bureaucrats. We demonstrate that where preferences diverge (i.e. under divided government) delegation to bureaucracy is more likely to take place. Conversely, under unified government, delegation is never strictly profitable and hence less likely to occur.

Proposition: There is never a strict incentive to delegate to an independent bureaucracy under unified government, whereas under divided government there is a strict incentive to delegate when $\epsilon < 2$.

Proof. Consider first the case of a unified government – say left government, without loss of generality. If the shock requires the policy to move to -1, then the incumbent L politician will follow it no matter what ϵ is; if the shock requires the policy to move to +1, then politician L in power will follow Nature only if ϵ (the common value component) is greater than 2 (the ideological loss in going from -1 to 1). [8]

Hence, the L politician's expected utility from not delegating when $\epsilon < 2$ is $\frac{\epsilon}{2}$, whereas

[8] Here we are assuming that if L decides not to follow Nature when Nature suggests to go to 1 then L will go to -1. If we assumed instead that not following Nature by remaining at 0 is significantly less bad than not following Nature by going to -1, for example with some quadratic loss from not following Nature, then the threshold of indifference would be less than 2, but the logic of the proof would be identical.

when $\epsilon > 2$ the expected utility of not delegating is the same as the expected utility of delegating to an independent bureaucracy which will always follow Nature automatically, i.e. $\epsilon - 1$. Thus, delegation is strictly worse than maintaining the spoil system for any $\epsilon < 2$ and delegation for higher ϵ values would not generate any difference in terms of expected payoff for the politician.

Under divided government, the politician L will follow Nature if ϵ is greater than 2. In this case, the expected utility is $\epsilon - 1$. Conversely, if ϵ is smaller than 2, when Nature requires the policy to move to $+1$, L will nonetheless want to move to -1, but the politician R will not allow it. Under divided government, if $\epsilon < 2$ we have a gridlock problem: each party cares more about ideology than about information, but since the approval of both parties is needed for any change of the status quo, the consequence of not delegating would be a tug of war leaving the policy in the status quo. This yields an expected utility of -1. Given that delegation yields $\epsilon - 1$, delegation is preferable.

In conclusion, under divided government there is a strict incentive to delegate to an independent bureaucracy if $\epsilon < 2$. Under unified government there is a strict incentive not to delegate if $\epsilon < 2$. For higher ϵ values, delegation would not generate any difference in terms of expected payoff for the politician **QED.**

This simple model allows us to make a clean prediction without any assumptions on the future. If we wanted to complicate the picture with forward looking politicians, it is easy to imagine that the incentives to delegate under divided government should be the higher the higher is the probability of remaining in a divided government situation also in the future. Suppose for example that politicians consider today and tomorrow, but the expectation is that tomorrow one of the two parties will likely obtain a unified government; in this case such a party with a positive outlook on the future might want to avoid delegation if endowed with a sufficiently high discount factor.

The qualification of the role of polarization and public goods provision that is offered by our model should now be clear. If the value politicians attach to the provision of public

goods (what we called following Nature) is high, civil service reform does not depend on the type of government (i.e. unified v. divided) and the conclusions drawn by the literature may be valid (though not explicit here because we did not want to complicate the model by adding the value of private benefits under patronage). Otherwise, the type of government plays a central role for civil service reform incentives. We will see the empirical evidence about this in section 4.

An important caveat about the model is that we have made the simplest assumption about the policy decision when delegation to the bureaucracy is chosen: we have assumed that bureaucracy understands the change in the state of Nature and follows such a change without any agency drift. This is the most optimistic scenario both in terms of expertise and in terms of no moral hazard. In reality, legislators do worry about moral hazard, and hence a reasonable conjecture, consistent with Huber and Shipan (2002, 2008) is that legislators might accompany the reform with more detailed legislation, increasing ex ante control with detailed statutes. This conjecture is what we will test in section 5.

4 Evidence on Divided Government and Civil Service Reform

The model described in the previous section generates a prediction that civil service reform is more likely under divided government. This section takes this prediction to the data.

4.1 Anecdotal Evidence

Before discussing the statistical analysis, we provide some anecdotal evidence that the push for civil service reform was mainly bipartisan, there was an important role played by the governor's office during these debates, and the main reforms across the U.S. states were enacted when a single party did not have full control over the government. This is different from what the contemporary political economy literature normally assumes.

The semi-annual Book of the States (BoS) provides detailed discussions of the process of state government reorganization. The BoS documents that reorganization is often overseen by bi-partisan commissions and supported by the use of study groups and public opinion polls (BoS 1954 Section IV). The introduction of the merit system across U.S. states was no different. In the 1940s and 1950s, a series of Little Hoover Commissions, modeled after the Hoover Commission at the federal level, were central in making proposals for strengthening central personnel agencies in several states, such as Montana, Nevada, Illinois, Louisiana, and New Mexico (BoS 1954 Section IV).

An interesting example of this process was Louisiana's 1940 law enacting a comprehensive civil service. The law was drafted by a group of citizens with the help of public interest attorneys, rather than by lobbyists or legislators themselves (Hyneman 1940). The legislation set up a state civil service commission, composed of individuals appointed by state universities and confirmed by the governor, to oversee the implementation of the merit system. The drafters realized that the merit system would need strong public support to survive (Hyneman 1940).

The reform in Michigan, around the same time, also demonstrates the importance of a bipartisan commission. According to Litchfield (1941, p.80) , "The amendment seeks to set up a system in which the actual administration is conducted by a competent personnel director, who is to be advised by, and in the last analysis checked by, a non-salaried, bipartisan commission".

Similarly, bipartisan commissions and civil society groups were central in the first wave of civil service reform at the end of the 19th century. The New York Civil Service Reform Association is the exemplary case, which inspired the Civil Service Commission created by the Pendleton Act at federal level.

Comprehensive civil service reforms were introduced at times when no single party had a strong hold over the government. As pointed out by Dresang (1982, p. 44):

> the cluster of states where reforms have been most frequent and far-reaching

> are states where there is meaningful two-party conflict in gubernatorial races and where there have indeed been changes in governors and in party control of that office during the period being examined.

This was true also at federal level, where the discussion about the introduction of a merit system started between the Democrat President Johnson and the Republican controlled Congress (Ruhil and Camões 2003). In the process of extending the merit system at federal level, the Congress decided to adopt a strong commitment device (enshrined in the Pendleton Act), which envisaged automatic expansion of the merit system as the federal civil service grew (Johnson and Libecap 1994). This was done to avoid potential conflicts (and Presidential vetoes) on periodic votes on the expansion of the civil service (Johnson and Libecap 1994).

There is anecdotal evidence that state governors were central in reforming and administering the patronage system. For example, as documented by Sorauf (1959) in the case of 1950s Pennsylvania, the governor is in charge of appointing most of the civil servants under the patronage system in place. As noted by Folke, Hirano and Snyder (2011), indeed, in most states the executive had formal authority over hiring and firing (even though the governor had to negotiate with the legislators for funding etc.).

The governor also played a central role in the introduction of the civil service. In Oklahoma, the newly elected governor Edmonson embarked on a long and convoluted negotiation process with the legislators to push the reform through. Housel (2014, p. 70) cites Edmondson's Chief of Staff in describing the logrolling behind closed doors to push the reform: "in the final hours . . . there were enough highway construction deals cut with legislators to keep the Transportation Department busy well into the next decade". Similar dynamics were in place in the introduction of the civil service in Michigan (Litchfield 1941). One of the main reasons for the high role of the governor in administering the patronage system and in its reform is the fact that in several states the legislature was a part-time body characterised by high turnover and low professionalism, until the 1960s (Rosenthal 1982). Hyneman (1940)

finds that this was the reason for the high role of the governor in managing the civil service and its reform in Louisiana. [9]

The role of the executive in introducing and strengthening the merit system was central also at federal level, where regardless of vote-maximizing considerations the costs of an inefficient civil service was higher for the President than for Congress members (Johnson and Libecap 1994).

4.2 Data

This subsection describes the data used for the analysis of divided government and civil service reform.

We define civil service reforms as the extension of the principles established by the Pendleton Act, namely meritocratic recruitment, bureaucratic tenure and political independence, to all the US state agencies. [10] [11]

The argument that these civil service reforms created an "independent" bureaucracy, as defined in our theory, needs specification. First, Schuster (2018) shows that the introduction of bureaucratic tenure, one of the principles in the reforms we study in this work, has a strong effect on the principal-agent relation in place between political patrons and appointee-clients. Tenure protections reshape the incentive structure under which bureaucrats act, as legislators lose their power over their career and remuneration Schuster (2016, 2018). As a result, bureaucrats become less responsive. The same can be argued for political independence, as bureaucrats no longer have to be associated with a party to keep the job and make a career, and meritocratic recruitment, as parties no longer can use recruitment as a mechanism to control current and future bureaucrats. To summarize, civil service reform selects for

[9] It should be noted that, although the role of the governor has been ignored by extant work on civil service reform, it is a central feature in delegation models (Volden 2002*b*).

[10] Some work (Ruhil and Camões 2003) focuses on the first introduction of merit principles in state civil service, which in most cases it was partial, namely applied only to some agencies. In line with the recent political economy literature (Folke, Hirano and Snyder 2011; Ting et al. 2013; Ujhelyi 2014), we look at the introduction of merit principles to the entire civil service.

[11] We acknowledge that job tenure and political neutrality were added gradually to the Pendleton Act.

less ideological bureaucrats, and imposes weaker political incentives once they are in office. Therefore we argue that the bureaucrat is better able and more incentivised to follow Nature, even if that means going against the policy platform of the party in power. [12]

Second, we also look at another dimension of the independence of bureaucracy. Indeed, it might be that although independent bureaucrats can more easily follow Nature, their role is attenuated by the presence of politically appointed top level bureaucrats. In this vein, we consider the appointment rules for the personnel executive, namely whether the personnel executive is appointed by the governor or an independent body (Ujhelyi 2014). Under governor appointment, there is less independence.

The time period under analysis is 1965–1983. The main practical reason is that data on the appointment rules of the personnel executive from Ujhelyi (2014) is available only for this period. There are also other reasons to restrict the sample to this period. Pre-1980s reform are more comparable in this regard (Ujhelyi 2014). Also, 19th century and early 20th century reforms at state level were strongly influenced by top-down policy diffusion from the federal level (Ruhil and Camões 2003). For instance, the 1930 Hatch Act represented an important piece of legislation for the civil service, restricting the ability of civil servants to take part in political activities at the federal level. It had a strong effect on the civil service reforms enacted after that year at state level. Also, in 1939 the Congress amended the Social Security Act, requiring the establishment of merit systems in those departments cooperating with the administration of the Act. As such, in the study of the causes of civil service reform, it is advisable to concentrate on the reforms which started after these waves of policy diffusion from the federal level.[13] In any case, we include year fixed effects to control for any nationwide federal level influences.

We have the following variables for variation in civil service rules. First, we have a dummy

[12]It should be noted that appointment mechanisms are common practice in measuring delegation to independent agencies (Volden 2002*a*).

[13]It should be noted that this sample allows controlling for the influence of vertical policy diffusion from the federal level and horizontal policy diffusion across states. The period of analysis ends at the time of the Civil Service Reform Act, which started a period of retrenchment of the merit principles in the public administration, at federal and then at local level (McGrath 2013; Ujhelyi 2014).

variable for the introduction of a comprehensive merit system in the state bureaucracy. Second, we consider the appointment rules for the personnel executive.[14] In the preferred specification, we combine these two variables together, deriving a single index to summarize independence. This variable takes value 0 where no comprehensive merit system is in place, value 1 where a comprehensive merit system (with no independent personnel executive) is in place, and value 2 where a comprehensive merit system (with an independent personnel executive) is in place. We also use the the appointment rules for the personnel executive as a dichotomous dependent variable in one specification. Over this period, 12 states with patronage systems introduced comprehensive merit systems as defined above. Additionally, looking at reforms that changed appointment rules for the personnel executive, there were 38 changes in 26 states (Ujhelyi 2014). Overall, we have variation in the dependent variable for 30 states.

The preferred specification for divided government, entitled 'Divided Government Veto' in the regression tables, is taken from Klarner (2003). This variable takes value 1 where government is divided (where the two chambers and the governor are not controlled by the same party) and value 0 where a single party controls all three institutions. The measure ignores the party of the governor when there are veto-proof majorities in the state legislature (Klarner 2003). This is a common measure of government divisiveness for separation of powers systems (Epstein and O'Halloran 1994, 1999; Volden 2002*a*,*b*). In robustness checks we use other measures of divided government, such as one which takes veto proof majorities and super-majority requirements for budget passage and tax increases into account (Klarner 2003)

Control variables are taken from Ujhelyi (2014), which include the following. Citizen ideology measures how liberal congressional candidates are, irrespective of their parties, and use their vote share to measure the ideology for the electorate (Berry, Ringquist, Fording and Hanson 1998). The fraction of urban population measures the percentage of the total

[14] As explained in the Appendix, we also thoroughly reviewed the primary and secondary sources suggested by Ujhelyi (2014) and Ting et al. (2013) (see Table A1 in the Appendix).

population in a state living in urban areas, according to the US Census. We also take into consideration the number of full-time state employees, according to the US Census, and income. For more information on these variables, see the Appendix in Ujhelyi (2014). To some extent, these control variables allow accounting for the alternative explanations the literature has so far put forward. As discussed above, the difference between rural and urban regions was crucial in the political debate for the introduction of the civil service, for instance. Also the number of full-time public employees might influence the introduction of a merit system, as a higher number of civil servants employed under a patronage system might lead to a stronger opposition to a reform. Conversely, it might also be that the increasing number of patronage positions raises the cost of maintaining the spoils system, as happened at federal level (Johnson and Libecap 1994). Table A2 in the Appendix shows the descriptive statistics of the variables used in this analysis.

4.3 Empirical Strategy

Our empirical approach is difference-in-differences, with estimation using ordinary least squares. We use state fixed effects to control for any time-invariant state-level confounding factors. [15] We use year fixed effects to control for nationwide time-varying factors. We use state-level time trends to allow for pre-existing confounding trends.

We estimate a linear model of $MeritIPE_{st}$, which equals zero for no reforms, one with a merit system (but no independent personnel executive), and two for a merit system with an independent personnel executive. The model is

$$MeritIPE_{st} = \alpha DividedGovernment_{st} + X'_{st}\beta + \gamma_s + \delta_t + \phi_{st} + \varepsilon_{st} \tag{2}$$

where $DividedGovernment_{st}$ measures whether the two chambers and the governor are not

[15] As mentioned above, by the 1940s most states had already introduced some sort of merit system in the civil service (Ruhil and Camões 2003). Some of them had introduced partial reforms, while others comprehensive reforms. We use state fixed effects to control for this heterogeneity across states at the beginning of our period of analysis.

controlled by the same party (taking into consideration the governor's veto powers), X_{st} is a vector of time-varying state characteristics, γ_s and δ_t are state and year fixed effects and ϕ_{st} represents state time trends.

We cluster standard errors by state to allow serial correlation within state over time (Bertrand, Duflo and Mullainathan 2004). Consistent estimation of treatment effects follows from the standard assumptions on parallel trends.

4.4 Results

Table 1 below shows the results of the fixed effects regression analysis. Divided government is the treatment variable of interest. The results in Column 1 show that there is a large within-state effect of divided government on the probability of strengthening the merit system. In Column 2 and Column 3, we see that the result is robust to including year fixed effects ($p = 0.006$) and state-level time trends and controls ($p = 0.087$). Column 4 and 5 show the results of the ordered logit regression analysis and the logit regression with only the introduction of a merit system as dependent variable. Results are robust to different model specifications.

Figure 1 provides graphical evidence of this relationship. This is a binned scatterplot, a non-parametric method of plotting the conditional expectation function. We regressed the independent and dependent variables on the control variables and generated residuals from those regressions. Then, we grouped the residualized variable in the horizontal axis into 23 equal sized bins, computed the mean of the residuals of each variable within each bin, and created a scatterplot of these 23 data points. Each point shows the average level of civil service reform for a given level of divided government, holding the controls constant. Finally, this method plots the best linear fit line, derived from an OLS regression of the y-residuals on the x-residuals. The slope clearly illustrates a positive relationship.

Table A3 in the Appendix shows the results of regression models with different measures of divided government. This variable takes veto proof majorities and super-majority require-

Table 1: Divided Government and Civil Service Reform

VARIABLES	(1) Merit IPE	(2) Merit IPE	(3) Merit IPE	(4) Merit IPE - Ologit	(5) Merit
Divided Government	0.145**	0.149**	0.0804+	0.852**	0.0302+
	(0.0519)	(0.0520)	(0.0460)	(0.312)	(0.0156)
Constant cut1				-22.85	
				(41.79)	
Constant cut2				-18.08	
				(41.85)	
Constant	1.302**	1.061**	-19.43		-25.25
	(0.0176)	(0.103)	(33.38)		(16.05)
Observations	830	830	830	830	893
State FE	X	X	X	X	X
Time FE		X	X	X	X
Controls			X	X	X
State-Specific Trends			X		X

Notes: Column 1 shows the results for the OLS regression model with state fixed effects. Column 2 adds year fixed effects and Column 3 time-varying controls (citizen ideology, urban population, (logged) number of state employees and (squared) income) and state-specific time trends. Column 4 uses ordered logistic regression and includes state and time fixed effects and controls. Column 5 uses the same specification of Column 3, but uses the introduction of a comprehensive merit system as (dichotomous) dependent variable, without taking into consideration the appointment rules for the personnel executive. In all models standard errors are clustered by state. **p<.01; *p<.05; +p<.1.

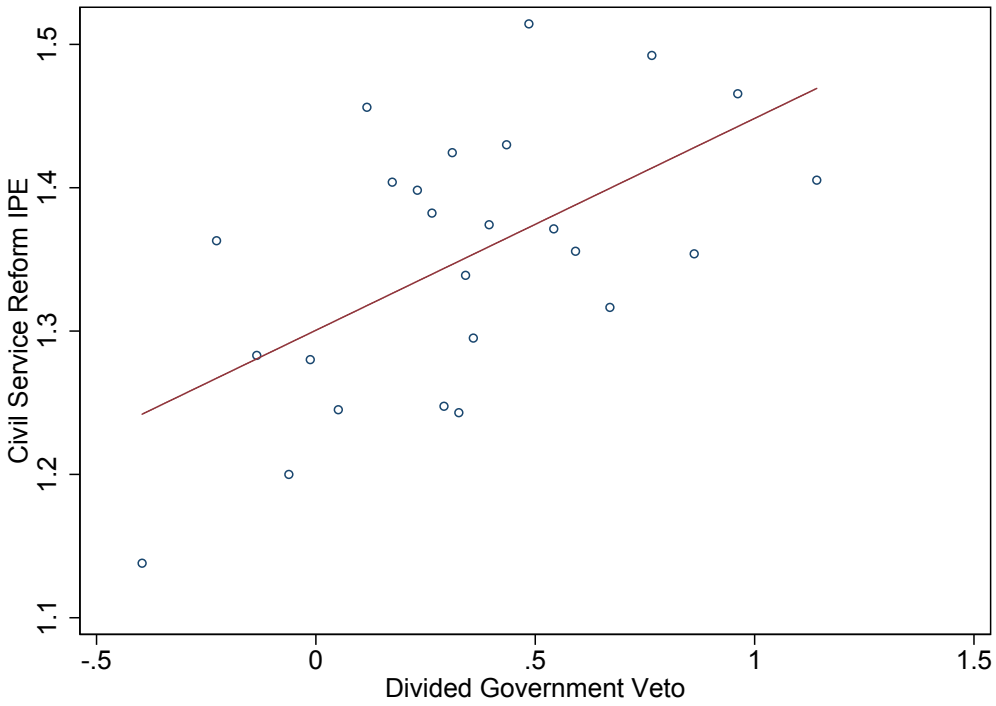
ments for budget passage and tax increases into account (Klarner 2003). Results are robust also to different measures of our treatment variable.

Overall, the findings support the idea that when state governments are divided, that increases the probability of strengthening the merit system. This is consistent with the model mechanisms from Section 3.

5 Consequences of Reform: Delegation and the Level of Detail of Legislation

This section extends the analysis to the impacts of civil service reform. We test the effects of the introduction of an independent bureaucracy on legislation. More specifically, we test

Figure 1: Binned Scatterplot



whether the introduction of an independent bureaucracy, as a result of the civil service reforms in the US states discussed above, is associated with a change in the level of detail of statutes.

5.1 Background

In recent decades, the literature on bureaucracy has focused on whether politicians delegate tasks to bureaucrats and how they do so. In other words, they look at which control instruments they put in place to manage policy implementation (McCubbins and Schwartz 1984; McCubbins, Noll and Weingast 1987; Levine and Forrence 1990; Epstein and O'Halloran 1994; Martin 1997; Gailmard and Patty 2012). Legislators can use either ex ante or ex post control mechanisms (Martin 1997). Ex post control mechanisms refer, for instance, to the hiring and firing of bureaucrats. Different forms of ex ante mechanisms can be put in place, such as administrative procedures (McCubbins, Noll and Weingast 1987), but the literature

has recently focused on the level of detail of legislation: detailed laws, they argue, are used to micro-manage policy implementation (Huber and Shipan 2002). The delegation literature studies whether these two types are substitutes (Huber and Shipan 2008). [16]

There is a countervailing factor that might reduce the need for ex ante control. That is, the merit system might result in more talented bureaucrats which should be given more discretion. Ash and MacLeod (2015) and Ash and MacLeod (2016) provide evidence for this process in the case of state supreme court judges. If legislators care about the quality of public goods provision, and merit-appointed bureaucrats are able to provide high-quality output without specific instructions, then laws may become less detailed after civil service reform.

Building on these ideas, we ask whether after the introduction of an independent bureaucracy, legislators write more detailed legislation. We take the introduction of merit systems in the civil service in U.S. states as a natural experiment for this purpose. [17]

5.2 Measuring the Level of Detail of Legislation

The level of detail of legislation is central in delegation studies. For example, Huber and Shipan (2002) seek to examine the variation in the level of detail of the statutes implementing the federal Medicaid program across U.S. states. First, they select the relevant statutes for Medicaid by searching legal databases. Second, they manually code the policy specificity of the words contained in these statutes. They distinguish between procedural and policy language, arguing that procedural language is less constraining than policy language (Huber and Shipan 2002) . The logic is that

> a bureaucrat can comply with the need to write a report or to consult particular groups or to conclude his or her work in a specified time period without being

[16] Other work on delegation emphasises the difference between creating independent agencies and restricting their discretion through delegation (Volden 2002*b*).

[17] The use of the design of bureaucratic agencies to measure their discretion is a well established practice in the literature (Volden 2002*a*; Wood and Bohte 2004).

> sharply constrained with respect to the policy actually implemented. But if the statute says to do X, the bureaucrat cannot do Y (at least without some risks) (Huber and Shipan 2002, p.48).

In the analysis of the level of detail of legislation across different jurisdictions, Huber and Shipan (2002) use the length of legislation as proxy for the discretion left to bureaucrats: the longer the statutes, the greater the effort to reduce discretion. In this way the possibility to compare different types of legislation on the basis of the distinction between procedural and policy language is abandoned.

The approach in our paper is a compromise between these two extremes. On the one hand, we appreciate that the distinction between procedural and policy language cannot be easily applied to different cases. On the other hand, the length of legislation alone is a too "extreme" solution to this problem. We need to find categories applicable to legislation in general that give us a more valid proxy of the level of detail of legislation than the length.

The solution is to look for *legally* (rather than *policy*) relevant information from texts. By building on recent Natural Language Processing (NLP) techniques that allow one to automatically extract legal provisions from texts (Ash, Morelli and Vannoni 2017), we propose a method to count the most common types of legal provisions: obligations, entitlements, permissions, and constraints. [18]

[18]It should be noted that in order to measure the level of discretion left to bureaucrats to implement the policies in statutes the concept of legislative detail is more valid than that of statutory discretion, another focus of the delegation literature. Statutory discretion is measured with the difference between the proportion of provisions in a legislative act that delegate policy authority to a specific actor and the proportion of constraints on the specific actor Epstein and O'Halloran (1999); Franchino (2004). As explained in detail below, the level of legislative detail refers instead to the number of policy relevant provisions in a statute. Assume that a piece of legislation contains two policy relevant provisions : 'the Agent shall do X' and 'the Agent is allowed to do Y'. The former is a provision constraining a generic agent, whereas the latter entitles this agent. Assume now that bureaucrats have to implement these provisions. In this case, regardless of the type of provision, bureaucrats will have to put in place the necessary arrangements to make sure that the Agent is constrained to the action X and is given the opportunity to perform the action Y. In other words, a provision empowering or one constraining an agent has the same effect on the level of discretion left to bureaucrats when implementing legislation. Instead, if we compare two statutes, one with only one policy relevant provision and the other with two, we can assume that the former is more constraining for bureaucrats than the latter.

5.3 A Computational Linguistics Approach: Information Extraction

The information extraction approach used in this work consists of two stages: (1) the a priori definition of the legal ontology, and (2) the lexical and syntactic analysis of the text. First we determine the relevant lexical and syntactic features of legal provisions. We focus on four legal ontologies, commonly used in legal studies: obligation, constraint, permission and entitlement (Soria, Bartolini, Lenci, Montemagni and Pirrelli 2007; Francesconi and Passerini 2007). Then, we extract lexical and syntactic information from the text by looking for those sentences which match the specified legal ontology.

Creating an ontology means encoding shared knowledge and making it explicit, through a set of rules. One must specify formally which components constitute a phenomenon, for example, or which relations between these components are present (Indurkhya and Damerau 2010). While construction of these ontologies often requires deep knowledge of the field of application (Indurkhya and Damerau 2010), we have prepared a set of relatively uncontroversial ontologies for legal documents. We rely on legal databases, where information on lexical and syntactic units from various legal texts have been manually annotated by lawyers and associated with specific provisions, such as FrameNet (Baker, Fillmore and Lowe 1998; Ruppenhofer, Ellsworth, Petruck, Johnson and Scheffczyk 2006) and WordNet (Villata, Rizzi, Governatori and Dragoni 2016), to build these ontologies. In addition, one of the co-authors in this research is a trained lawyer in the United States.

The construction of a legal ontology starts from the identification of the lexical units. Table 2 shows the lexical units associated with the four ontologies we choose to look at in this paper. These categories are based on Ash, MacLeod and Naidu (2018).

As shown in Table 2, we start by looking for deontic modals (modals which relate to obligations and permissions), which can be either strict, namely restricting the action of the agent, such as 'shall', or permissive, namely empowering the agent, such as 'may'. Then, we also look for special verbs, namely those verbs which often appear in legal documents

Table 2: Lexical Units

STRICT MODALS	'shall','must','will'
PERMISSIVE MODALS	'may','can'
OBLIGATION VERBS	'require', 'expect', 'compel', 'oblige' , 'obligate', 'have to', 'ought to'
CONSTRAINT VERBS	'prohibit', 'forbid', 'ban', 'bar', 'restrict', 'proscribe'
PERMISSION VERBS	'allow', 'permit', 'authorize'
ENTITLEMENT VERBS	'have', 'receive','retain'

as associated with the provision types mentioned above. For instance, an obligation will contain verbs such as 'require', 'expect' and so on.

The next phase is to build the syntactic structure of each legal ontology, by relying on the lexical units above. Language databases, such as FrameNet, provide guidance also for this. For instance, an obligation can be characterised by three syntactic structures:

- [agent] [strict modal] [verb]
- [agent] [passive] [obligation verb]

In the first scenario we have a strict modal (e.g. 'shall') and an action verb (i.e. any verb which is not among the special verbs identified above). In the second scenario, we have a passive construction with an obligation verb (e.g. 'is required', 'shall be required'). Table A3 in the Appendix outlines in detail the syntactic structures of all types of provisions and provides some examples.

Once the relevant syntactic structures have been specified, the next stage is to detect these structures in the text under analysis. Although several parsing methods are present, we use dependency parsing, as suggested by recent developments in NLP (Dell'Orletta, Marchi, Montemagni, Plank and Venturi 2012; Montemagni and Venturi 2013). The parser models sentence structure over the words contained in the sentence and the grammatical relations between them (Jurafsky and James 2000). A dependency relation consists of a head word and a dependent word, related to each other through a functional dependency. Examples of functions are nominal subject, direct object, and so on. More formally, a dependency structure $G = (V, A)$ consists of vertices V, the set of words in a sentence, and arcs A,

the head-dependent and grammatical relations (Jurafsky and James 2000; Choi and Palmer 2012). Usually dependencies are displayed as (projective) 'parse trees', which represent the relations between words in a recursive hierarchical structure. Dependency trees are graphs where: 1) there is a single head, with no incoming arc; 2) each vertex (apart from the head) has at least one incoming arc; 3) there is a unique path from the root node to each vertex (Jurafsky and James 2000; Goldberg and Nivre 2012). Figure A1 in the Appendix shows an example of a dependence parse tree.

The widely used transition-based parsing algorithm works as follows (Jurafsky and James 2000; Bird, Klein and Loper 2009; Goldberg and Nivre 2012; Honnibal, Johnson et al. 2015). The input is a list of tokens. The algorithm works through three transition operators, applied to the list of tokens: 1) the LEFT action asserts a head-dependent relation between the top word in the 'stack' (the list of words yet to be processed) and the one beneath and removes the lower word from the stack; 2) the RIGHT action asserts a head-dependent relation between the first and second words in the stack and removes the word at the top; 3) the SHIFT action removes the word from the initial list of tokens and places it into the stack.

To speed up the parse, the algorithm is greedy: once a dependency has been assigned, the token is removed from the stack and cannot be reassigned. For every token in the sentence, the parser consults a rulebook (the so-called 'oracle') that returns a transition (LEFT, RIGHT, or SHIFT) based on the current state. This 'oracle', a key piece of the parser software, is constructed by the developers to optimize accurate parsing based on training data.

The parser is trained on an annotated corpus of standard English articles. This corpus does not include legal documents. But we find that it does quite well on most sentences in our corpus of statutes.

We apply these parser methods to the text of state statutes. Although several implementations are available, such as SyntaxNet, NLTK, and CoreNLP, in this work we use spaCy, one of the most accurate and fastest parsers available today (Choi, Tetreault and Stent 2015;

Honnibal, Johnson et al. 2015).[2] After each sentence is parsed, we match up the extracted dependency relations to our set of syntactic units for delegations, prohibitions, and so on. If a sentence matches one of these categories, it is counted as a legal provision. To measure legislative detail, we count the number of legal provisions published in the state session laws for each state and each biennium.

It should be noted that supervised learning methods, which improve on the length of legislation in extracting relevant information from texts, have already been used, both at federal (Al-Ubaydli and McLaughlin 2017) and state level (Vakilifathi 2017). The latter is the closest in spirit to our analysis. Vakilifathi (2017) measures the level of statutory discretion in statutes regulating charter schools by counting the number of mandatory and optional statements. The author identifies these statements mainly by looking at modal verbs, associating 'shall' to mandatory sentences and 'may' to optional ones. She also includes in the analysis some alternative optional and mandatory phrases, which do not necessarily includes those modal verbs. Our information extraction approach arguably performs better than that method, by reducing false positives and false negatives. In other words, as argued by Vakilifathi (2017) herself, not all mandatory statements contain the modal 'shall'. Moreover, we argue that containing the modal 'shall' is not a sufficient condition for a sentence to be considered a mandatory statement. As seen above, an obligation is characterised by the presence of different strict modals, not only 'shall'. Also, an obligation should contain a strict modal only in a positive sentence. Finally, an obligation does not necessarily need to have a strict modal, as it may be characterised by an obligation verb.

5.4 State Legislation Data

The dataset on legislation consists of the full text of U.S. state session laws from 1900 to 2000. We have the collection of statutes enacted by a legislature during a session, which are published annually or biennially. To ensure consistency, the dataset is built biennially. For more detail on the dataset, see Ash (2016) and Ash, Morelli and Vannoni (2017). The

major pre-processing step is to segment the volumes into statutes, and then to segment the statutes into sentences. A detailed discussion is provided in the Appendix.

5.5 Metadata

The main treatment variable is the introduction of a comprehensive merit system, namely the extension of the principles established by Pendleton Act, meritocratic recruitment, bureaucratic tenure and political independence, to all the state agencies, from Ujhelyi (2014) (see Table A1 in the Appendix). As mentioned above, tenure protection and political independence significantly weaken the capacity of legislators (the principal) to control bureaucrats (the agent) (Schuster 2016, 2018). This may weaken ex post control mechanisms, thus requiring the strengthening of ex ante control mechanisms. As the substitutability between ex ante and ex post control mechanisms works both ways, we also take into consideration the cases where a state repealed the merit system. As mentioned above, starting with Georgia in 1996, several states have undergone a process of decentralization of the state personnel system (McGrath 2013). The date of the repeal of the merit systems is drawn from Table 1 in McGrath (2013).

Some discussion is needed on meritocratic recruitment (as opposed to greater independence). The effect on the level of legislative detail could go either way. In particular, better skilled bureaucrats might need more discretion to act effectively. Ash and MacLeod (2015) and Ash and MacLeod (2016) provide evidence for this process in the case of state supreme court judges. If legislators care about the quality of public goods provision, and merit-appointed bureaucrats are able to provide high-quality output without specific instructions, then laws may become less detailed after civil service reform. The level of professionalism is found to affect agency discretion (Huber, Shipan and Pfahler 2001).[19]

This means that the overall effect could be positive or negative. Our empirical analysis will tell us which effect is stronger. In addition, meritocratic recruitment would have a

[19]Gailmard and Patty (2007) find that also bureaucratic tenure incentivises bureaucrats to invest in their skills. Yet, the effect of tenure on skills is arguably less direct and takes place over a longer time period.

delayed effect due to hiring different types of bureaucrats. It would not have an immediate effect on bureaucracy. Folke, Hirano and Snyder (2011) show that on average before the introduction of the reform, only 20 % of the state employees were covered by civil service systems, whereas after the reform this figure jumps to 60 % and remains constant at the level (see Figure 2 in their paper). This is a discrete change in the rules regulating tenure and political independence for the majority of civil servants, consistent with our assumption of civil service reform as 'treatment'. Although no information is available on the turnover triggered by the civil service reform, it is reasonable to assume that it took at least a decade before 60 % of the personnel started to be hired in a competitive manner. This means that in our analysis we manage to isolate the effect of an 'independent' bureaucracy from that of an 'expert' one. [20]

We also collected the following set of covariates for use in robustness specifications. First, we have the date of the introduction of a legislative drafting system, drawn from different sources. See Table A4 in the Appendix for more information.[21] One might be concerned that legislative output is affected by the ability of legislators to write detailed laws (Huber and Shipan 2002, 2008). Better-equipped legislators, both in terms of their own skills and in terms of the physical environment, do not need to delegate to bureaucrats. This is why we control for introduction of legislative reference systems in the state's affected legislative output.

Second, the variable measuring divided government is the same as above and drawn from two sources: Burnham (2017) and Klarner (2003). We calculated a dummy variable where the value 1 is associated with divided government (where the two chambers and the governor are not controlled by the same party) and value 0 with the situation where a single party controls all three institutions. We need divided government as control variable due

[20] As for the former effect, how civil servants were originally hired should not affect our results. Once the reform took place, civil servants started play under 'new rules' and were no longer supposed to be loyal to those who hired them in first place.

[21] Information for this variable is missing for 18 states, namely those states where the introduction of a legislative reference system occurred after 1935 and hence, are not recorded in the Book of States of that year (to our knowledge, no more up to date information on this aspect is available).

to alternative factors correlated with civil service reform (Epstein and O'Halloran 1999; Volden 2002*b*; Wood and Bohte 2004). It might be that as more negotiation and bargaining are needed to pass and approve legislation, legal complexity would increase. Conversely, gridlock could lead to policy inertia, with less legislation enacted. Table A5 in the Appendix shows some descriptive statistics of the variables used here.

5.6 Empirical Strategy

We test the effect of the introduction of an independent bureaucracy on our measure of legislative detail, which is the number of provisions extracted. We analyze 50 U.S. states from 1900 to 2000.

The estimating equation is

$$\log\left(LegalProvisions_{st}\right) = \alpha Merit_{st} + \beta X_{st} + \gamma_s + \delta_t + \phi_s t + \varepsilon_{st} \tag{3}$$

where $\log\left(LegalProvisions_{st}\right)$ represents the logged number of legal provisions in the statutes of the state for every biennium, $Merit_{st}$ is the variable which measures the introduction of a comprehensive merit system, X_{st} is a vector of time-varying state characteristics, γ_s and δ_t are state and time (biennium) fixed effects and $\phi_s t$ represents state-time trends.[22] The equation is estimated using ordinary least squares and standard errors are clustered to allow serial correlation within state.

5.7 Results

Table 3 shows the results for the fixed-effects regression. The introduction of the civil service is statistically associated with higher levels of detail in legislation (Column 1).

[22]Controlling for time fixed effects allow accounting for the competing explanation based on vertical delegation of powers from the federal to the state level. Indeed, it might be argued that the creation of an independent agency and more regulation co-occur when more competences are given to the states. Yet, if we assume that the delegation of competences from the federal to the state level occurs at the same time for all the states (which is usually the case), then time fixed effects control for this.

Table 3: Civil Service Reform and Legislative Detail

VARIABLES	(1) Leg Detail	(2) Leg Detail	(3) Leg Detail	(4) Leg Detail	(5) Leg Detail	(6) Leg Detail
Introduction Civil Service	0.987**	0.137*	0.149*	0.157*	0.147*	0.131*
	(0.0704)	(0.0632)	(0.0585)	(0.0653)	(0.0713)	(0.0595)
Constant	8.639**	-2.209*	-0.412	-2.189*	-2.095*	-2.303*
	(0.0371)	(0.930)	(1.138)	(0.932)	(0.979)	(0.892)
Observations	2,448	1,438	1,382	1,438	1,438	1,485
State FE	X	X	X	X	X	X
Time FE		X	X	X	X	X
State-Specific Trends		X	X	X	X	X
Controls		X	X	X	X	X
Lagged DV			X			
Reform Year				X		
Interaction					X	

Notes: Column 1 shows the results for the OLS regression model with state fixed effects. Column 2 adds biennium fixed effects, time-varying controls (introduction of drafting system and divided government) and state-specific time trends. Column 3 adds the lagged dependent variable. Columns 4 and 5 use the same specification of Column 2, but respectively add a dummy variable for the reform year and the interaction between divided government and the introduction of the merit system. Column 6 uses as treatment variable the introduction and the repeal of merit system. In all models standard errors are clustered by state. **p<.01; *p<.05; +p<.1.

The coefficient and standard errors are robust across specifications. First, there is no change from adding the lagged dependent variable (Column 3), which addresses the issues of long-term serial correlation in state panel data documented by Caughey, Xu and Warshaw (2017). Second, there is no change from adding controls for Divided Government (Column 2) or Divided Government interacted with Civil Service Reform (Column 5). This means that our results are not driven by the correlated changes in government structure documented in the previous section. Adding a separate dummy variable for the year of the reform (Column 4) does not change the results either, meaning that the effect happens after the introduction of the merit system and not contemporaneously with it. We also incorporate in the main independent variable the repeal of the merit system, as it occurred in 15 states from 1996. Column 6 in Table 3 shows the results, which are consistent with the model.

Figure 3 shows an event study graph. This graph shows the residuals of the logged number of provisions plotted against a small subset of bienniums, namely four bienniums before the

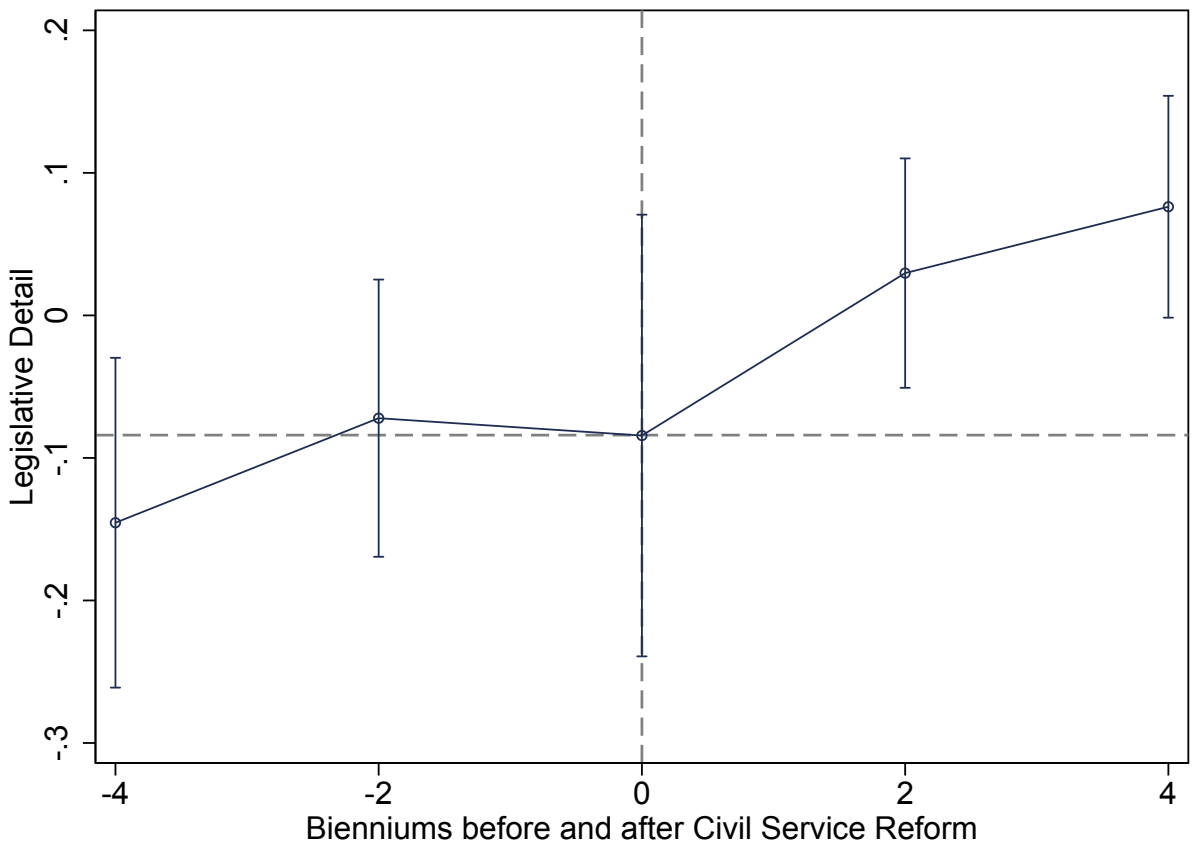


Figure 2: Event Study Graph

civil service reform and four biennniums after. [23] In other words, this plot shows the deviation in provisions in the years before and after the reform, relative to the year of reform. Results suggest no evidence for pre-trends and that the effect on legislative complexity takes place at least two biennniums after the introduction of an independent bureaucracy.

These findings are consistent with the idea that after the establishment of an independent bureaucracy, legislators start writing more detailed statutes in order to micro-manage policy implementation. The reform of the civil service and the introduction of an independent bureaucracy prevent legislators from using ex post control mechanisms, such as firing bureaucrats at will. Hence, legislators start putting in place ex ante control mechanisms, such as writing detailed legislation. The alternative model, of a more professional bureaucracy

[23]The regression includes state and time fixed effects, state-time trends, clustered standard errors and the time-varying controls discussed above.

requiring less instruction, is not supported by the data.

An additional set of model specifications and robustness checks are reported in Table A7, which shows the results for the regression models with different types of provisions as dependent variables. Results are robust across types, suggesting an increase in entitlements, permissions, constraints, and obligations associated with the introduction of a an independent civil service. [24]

Finally, in the Appendix we also test whether divided government has an effect on legislative complexity in those years where the merit system was not in place. Results in Table A8 show that in those years there is no effect of divided government on legislative complexity, providing further evidence that divided government is not driving the results.

6 Conclusion

The analysis in this paper shows that when the government is divided, it is more likely that a strong civil service reform takes place. Under unified government, legislators are able to follow either Nature or ideology, whereas under divided government gridlock tend to lead to policy inertia. In this case, legislators are incentivised to delegate powers to bureaucrats.

This delegation of powers has consequences on the lawmaking process. Building on the concept of the substitutability of control mechanisms in the delegation literature, we ask whether after delegating authority to an independent bureaucracy, legislators start writing more detailed legislation, in order to control bureaucrats ex ante. We find empirical evidence for this claim: the introduction of a merit system in the civil services of US states is associated with an increase in the number of legal provisions contained in statutes.

Our findings speak to several strands of political economy and may be of interest to scholars of civil service reform and bureaucratic delegation. As for the former, we show that the type of government matters for the creation of an independent bureaucracy, if the value

[24] This finding is relevant to the discussion on the difference between statutory discretion and level of detail of legislation.

politicians attach to providing public good is low. In that case, civil service reform is more likely when a single party cannot control the government. This reorganizes the claims so far put forward by the literature (Ting et al. 2013; Huber and Ting 2016), by looking at the type of government, central to the delegation literature (Volden 2002*a*,*b*).

The findings contribute also to the literature on bureaucratic delegation. First, we find that legislators start writing more detailed laws after the introduction of an independent bureaucracy. This is consistent with a model in which a more independent bureaucracy requires more specific instructions to avoid agency drift, rather than a model in which a more technocratic bureaucracy should be given less instructions and more discretion (Huber and Shipan 2002, 2008).

These findings elicit other interesting implications for the bureaucratic delegation literature. The first implication concerns the relation between divided government, bureaucratic delegation and detailed legislation. Our work brings together two separate claims. Huber and Shipan (2002); Volden (2002*b*); Huber and Shipan (2008) suggest that divided government has a direct effect on the level of detail of legislation: where preferences diverge, legislators write more detailed statutes. This strand, along with Callander and Krehbiel (2014) also finds that divided government (which might lead to gridlock) leads to more delegation, in terms of the creation of independent agencies. Our findings suggest that divided government does not affect the level of detail of legislation directly, but it does so through the creation of an independent bureaucracy.

Also, another implication of our findings concerns bureaucratic capacity. In studying delegation in a scenario with low capacity bureaucracy, Huber and McCarty (2004) find that some of the key principles in delegation studies do not work in that scenario. More specifically, they show that when bureaucratic capacity is low, even though the bureaucrat's ideal point might be close to the politician's, there are little incentives for bureaucrats to comply with statutes. Bad bureaucrats are hard to control because their incompetence diminishes their incentives to implement the policies laid out by the politicians. Hence, traditional con-

trol mechanisms do not work. This suggests that the substitutability of control mechanisms, discussed above, holds only when bureaucratic capacity is high. In our case, the substitutability principle works only after the introduction of the merit system, which arguably leads to a high capacity bureaucracy. Our findings above are in line with this expectation. Moreover, Huber and McCarty (2004) study the incentives for political reform in systems with low bureaucratic capacity, finding that the incentives to politicize bureaucracy are high in these systems, creating a sort of a vicious circle. Our work can shed light on what can break that vicious circle. Although there might not be strict 'delegation' incentives to reform the civil service and create an independent and efficient bureaucracy, we show above that under certain circumstances politicians are incentivised to reform the bureaucracy.

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Appendix:
Civil Service Reform in U.S. States: Structural Causes and Impacts on Delegation

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Contents

1 Divided Government and Civil Service Reform **3**
- i Dates of Adoption of Merit Systems . . . 3
- ii Descriptive Statistics . . . 5
- iii Robustness Checks . . . 6

2 Delegation and the Level of Detail of Legislation **6**
- i Information Extraction . . . 6
- ii State Session Laws . . . 9
- iii Introduction of Reference and Drafting System . . . 11
- iv Descriptive Statistics . . . 14
- v Robustness Checks . . . 15

1 Divided Government and Civil Service Reform

i Dates of Adoption of Merit Systems

Table A1 below shows the dates of the adoption of the merit systems across US states. We rely on two main secondary sources, namely Ujhelyi (2014) and Ting, Snyder, Hirano and Folke (2013). Where the dates are the same in these two sources, no further research is carried out. Where these two dates differ, we look for further secondary and primary sources. In some cases, no sources were available and hence we relied on Ujhelyi (2014) 'as default'. In those cases where we find that primary sources contradict his findings, we specify it in the Notes column.

Table A1: Dates of Adoption of Merit Systems

State	Introduction Merit System			Notes
	Ujhelyi (2014)	Ting et al. (2013)	This Paper	
AK	1960	1960	1960	Same
AL	1939	1939	1939	Same
AR	1969	1968	1969	Ujhelyi (2014) as default
AZ	1968	1968	1968	Same
CA	1913	1913	1913	Same
CO	1919	1918	1918	Colorado Constitution amended in 1918
CT	1937	1937	1937	Same
DE	1968	1966	1966	Law enacting merit system passed in 1966
FL	1967	1968	1967	Florida statute enacted in 1967
GA	1945	1953	1945	Georgia constitution amended in 1945
HI	1955	1955	1955	Same
IA	1967	1966	1966	Iowa Code enacted in 1966
ID	1967	1969	1967	Ujhelyi (2014) as default
IL	1905	1905	1905	Same
IN	1941	1941	1941	Same
KS	1941	1941	1941	Same
KY	1960	1954	1960	Law passed in 1960
LA	1952	1940	1952	Ujhelyi (2014) as default
MA	1885	1885	1885	Same
MD	1921	1921	1921	Same
ME	1937	1937	1937	Same
MI	1941	1937	1940	Ujhelyi (2014) as default
MN	1939	1939	1939	Same
MO	1945	1946	1945	Constitution amended in 1945
MS	1977	1976	1976	Code enacting merit system adopted in 1976
MT	1976	1976	1976	Same
NC	1949	1949	1949	Same
ND	1975	1974	1975	Ujhelyi (2014) as default
NE	1975	1974	1975	Ujhelyi (2014) as default
NH	1950	1954	1950	Ujhelyi (2014) as default
NJ	1908	1908	1908	Same
NM	1961	1962	1961	Ujhelyi (2014) as default
NV	1953	1953	1953	Same
NY	1883	1883	1883	Same
OH	1913	1913	1913	Same
OK	1959	1958	1959	Merit system adopted in 1959
OR	1945	1945	1945	Same
PA	1963	1968	1963	Ujhelyi (2014) as default
RI	1939	1939	1939	Same
SC	1969	1973	1969	Ujhelyi (2014) as default
SD	1973	1968	1973	Ujhelyi (2014) as default
TN	1937	1937	1937	Same
UT	1963	1962	1963	Ujhelyi (2014) as default
VA	1943	1942	1943	Ujhelyi (2014) as default
VT	1950	1950	1950	Same
WA	1961	1961	1961	Same
WI	1905	1905	1905	Same
WV	1989	1989	1989	Same
WY	1957	1956	1957	Personnel Act adopted in 1957

Table A2: Descriptive Statistics

VARIABLES	N	mean	sd	min	max
Merit	950	0.889	0.314	0	1
Citizen Ideology	912	0.432	0.175	0.00963	0.869
Income	912	10.68	1.889	5.297	15.80
IPE	849	0.455	0.498	0	1
Percent Urban	912	0.659	0.143	0.321	0.917
Full-time Employment	912	10.47	0.846	8.434	12.40
Divided Government Veto	931	0.345	0.476	0	1
Divided Government Tax and Budget	931	0.361	0.481	0	1
Merit IPE	849	1.331	0.685	0	2

ii Descriptive Statistics

iii Robustness Checks

Table A3: Divided Government and Civil Service Reform - Tax and Budget

VARIABLES	(1) Merit IPE	(2) Merit IPE	(3) Merit IPE	(4) Merit IPE - Ologit	(5) Merit
Divided Government	0.147**	0.153**	0.0788	0.876**	0.0313+
	(0.0521)	(0.0525)	(0.0469)	(0.317)	(0.0159)
Constant cut1				-23.85	
				(41.78)	
Constant cut2				-19.08	
				(41.83)	
Constant	1.299**	1.054**	-18.96		-25.13
	(0.0183)	(0.104)	(33.36)		(16.05)
Observations	830	830	830	830	893
State FE	X	X	X	X	X
Time FE		X	X	X	X
Controls			X	X	X
State-Specific Trends			X		X

Notes: Column 1 shows the results for the OLS regression model with state fixed effects. Column 2 adds year fixed effects and Column 3 time-varying controls (citizen ideology, urban population, (logged) number of state employees and (squared) income) and state-specific time trends. Column 4 uses ordered logistic regression and includes state and time fixed effects and controls. Column 5 uses the same specification of Column 3, but uses the introduction of a comprehensive merit system as (dichotomous) dependent variable, without taking into consideration the appointment rules for the personnel executive. In all models standard errors are clustered by state. **p<.01; *p<.05; +p<.1.

2 Delegation and the Level of Detail of Legislation

i Information Extraction

Table A4 shows the syntactic structure of the provisions analysed in this work, written in Python-like programming language. An obligation is characterised by three structures, all positive: either a strict modal followed by an (active) verb, or a strict modal followed by a obligation verb, or a obligation verb without strict modal. Examples are respectively: 'The Agent shall act', 'The Agent shall be required to' and 'The Agent is expected to'. Constraints are characterised by a negative structure with either a modal, or a permission verb, or a

Table A4: Code for Provision Syntactic Structure

Obligation	not item['neg'] and item['strict_modal'] and item['active_verb'] not item['neg'] and item['strict_modal'] and item['obligation_verb'] not item['neg'] and not item['md'] and item['obligation_verb']
Constraint	item['neg'] and item['md'] and not item['obligation_verb'] not item['neg'] and item['strict_modal'] and item['constraint_verb'] item['neg'] and item['permission_verb']
Permission	not item['neg'] and item['permission_verb'] not item['neg'] and item['permissive_modal'] and not item['special_verb'] item['neg'] and item['constraint_verb']
Entitlement	not item['neg'] and item['entitlement_verb'] not item['neg'] and item['strict_modal'] and item['passive'] item['neg'] and item['obligation_verb']

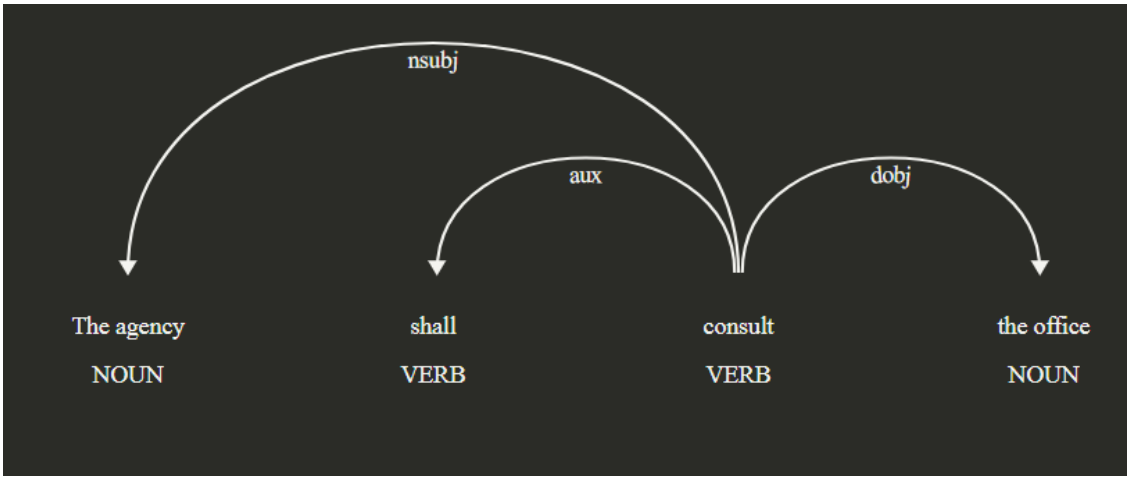
positive structure with a strict modal and a constraint verb. Examples are: 'The Agent shall not', 'The Agent is not allowed' and 'The Agent shall be prohibited to'. Permissions are characterised by a positive structure with either a permission verb or a permissive modal with no special verb (a non-special verb is any verb which does not fall into the categories in the table in the main body), or a negative structure with a constraint verb. Examples are: 'The Agent is allowed to', 'The Agent may act' and 'The Agent is not prohibited to'. Finally, entitlements are characterised by a positive structure with either an entitlement verb or a strict modal and a (passive) verb, or a negative structure with a obligation verb. Examples are: 'The Agent retains the power to', 'The Agent shall be considered' and 'The Agent is not compelled to'.

The following sentences are from the California Government Code 11508 - (a) and 65852 - (a): "The agency shall consult the office, and subject to the availability of its staff, shall determine the time and place of the hearing"; "A local agency may, by ordinance, provide for the creation of accessory dwelling units in areas zoned to allow single-family or multifamily use". Below in Figure A1, we provide the dependence trees for parts of these two sentence. [1] The letters below the words represent the part of speech (POS) tags. A prerequisite of syntactic dependency parsing, indeed, is POS tagging. The latter assigns labels ('tags') to the tokens in a sentence according to their function, such as noun, verb, and adjective.[2] For instance, in the sentence above, '(the) agency' is a noun and 'consult' is a verb. Although POS tagging provides important information on the single token, it does not say much about the token's relations with the other tokens in a sentence. This is where dependency parsing comes into play.

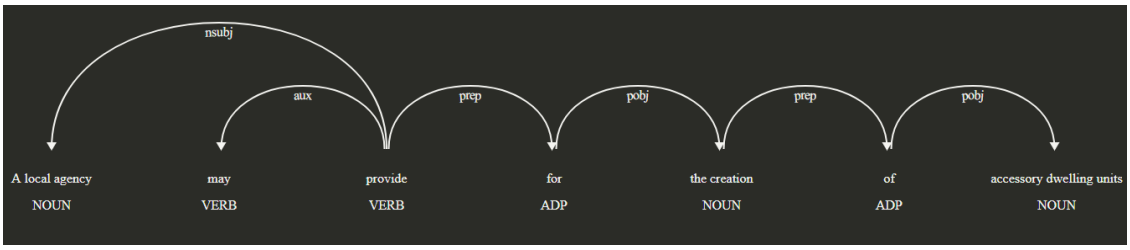
The arcs above the sentence in Figure A1 represent the syntactic relations between words. First of all, the parser identifies the head of the sentence, normally the main verb ('consult' and 'provide', respectively in the first and second sentence). The parser then identifies the subject of the sentence ('the agency' and 'a local agency', respectively in the first and second sentence) through the nominal subject (nsubj) relation. The subject may also be a clause. Finally, the parser looks at the other side of the sentence and, in the case of the second sentence, identifies two prepositions, namely 'for' and 'of', and two objects of this preposition, namely 'the creation' and 'accessory dwelling units', or in the case of the first sentence, directly the object 'the office'. [3]

As it can be seen, the first sentence is an obligation, as it is an active and positive sentence which contain a strict modal, namely 'shall'. This is close in spirit to the 'the Agent shall act' example of obligation provided above. Conversely, the second sentence is a permission, as it is positive and active, with a permissive modal, namely 'may', followed by a normal

[1] This figure is taken from displaCy, a graphical interface for Spacy, the dependency parser used here.
[2] A full list of POS tags can be found here (accessed June 2017).
[3] A full list of dependencies can be found in De Marneffe and Manning (2008).



(a) Obligation



(b) Permission

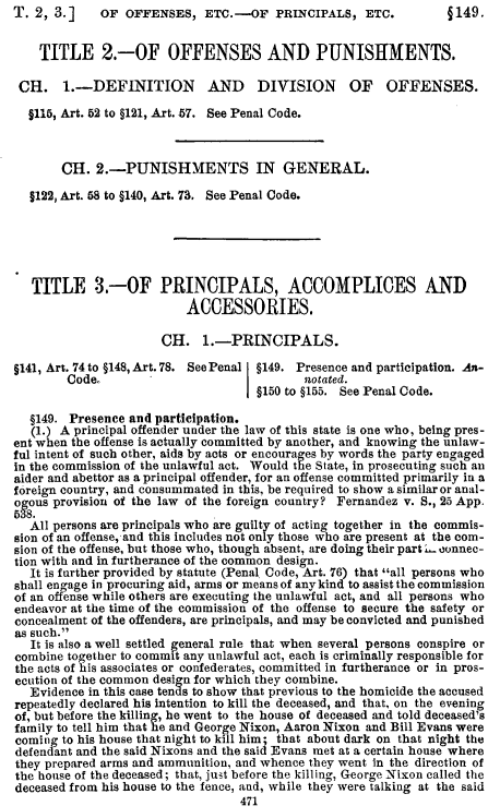
Figure A1: Dependency Parse Tree

verb. This is very similar to the 'the Agent may act' example of permission discussed above.

ii State Session Laws

The dataset consists of full text of US state session laws, namely the collection of statutes enacted by a legislature, published every year or every two years from 1900 to 2000. The collection of statutes was retrieved from heinonline.com. For old statutes, only the scanned copy was available. Figure A2 shows the scanned copy of a page from a statute enacted in the Texas Legislature for the 1889 session. As it can be seen, although the statute is old, the quality of the digitised version is rather good.

It should be noted that the laws in the dataset give the flow, rather than the stock of legislation. In other words, the dataset contains also statutes which amend or repeal previous legislation or laws which failed or were vetoed. A team of research assistants was hired to



T. 2, 3.] OF OFFENSES, ETC.—OF PRINCIPALS, ETC. §149.

TITLE 2.—OF OFFENSES AND PUNISHMENTS.

CH. 1.—DEFINITION AND DIVISION OF OFFENSES.

§115, Art. 52 to §121, Art. 57. See Penal Code.

CH. 2.—PUNISHMENTS IN GENERAL.

§122, Art. 58 to §140, Art. 73. See Penal Code.

TITLE 3.—OF PRINCIPALS, ACCOMPLICES AND ACCESSORIES.

CH. 1.—PRINCIPALS.

§141, Art. 74 to §148, Art. 78. See Penal Code.

§149. Presence and participation. *Annotated.*

§150 to §155. See Penal Code.

§149. **Presence and participation.**

(1.) A principal offender under the law of this state is one who, being present when the offense is actually committed by another, and knowing the unlawful intent of such other, aids by acts or encourages by words the party engaged in the commission of the unlawful act. Would the State, in prosecuting such an aider and abettor as a principal offender, for an offense committed primarily in a foreign country, and consummated in this, be required to show a similar or analogous provision of the law of the foreign country? Fernandez v. S., 25 App. 638.

All persons are principals who are guilty of acting together in the commission of an offense, and this includes not only those who are present at the comsion of the offense, but those who, though absent, are doing their part ... connection with and in furtherance of the common design.

It is further provided by statute (Penal Code, Art. 76) that "all persons who shall engage in procuring aid, arms or means of any kind to assist the commission of an offense while others are executing the unlawful act, and all persons who endeavor at the time of the commission of the offense to secure the safety or concealment of the offenders, are principals, and may be convicted and punished as such."

It is also a well settled general rule that when several persons conspire or combine together to commit any unlawful act, each is criminally responsible for the acts of his associates or confederates, committed in furtherance or in prosecution of the common design for which they combine.

Evidence in this case tends to show that previous to the homicide the accused repeatedly declared his intention to kill the deceased, and that, on the evening of, but before the killing, he went to the house of deceased and told deceased's family to tell him that he and George Nixon, Aaron Nixon and Bill Evans were coming to his house that night to kill him; that about dark on that night the defendant and the said Nixons and the said Evans met at a certain house where they prepared arms and ammunition, and whence they went in the direction of the house of the deceased; that, just before the killing, George Nixon called the deceased from his house to the fence, and, while they were talking at the said

471

(a) Scanned Text

T. 2, 3.] OF OFFENSES, ETC.-OF PRINCIPALS, ETC.

TITLE 2.-OF OFFENSES AND PUNISHMENTS.
CH. 1.-DEFINITION AND DIVISION OF OFFENSES.
§115, Art. 52 to §121, Art. 57. See Penal Code.
CH. 2.-PUNISHMENTS IN GENERAL.
§122, Art. 58 to §140, Art. 73. See Penal Code.
TITLE 3.-OF PRINCIPALS, ACCOMPLICES AND ACCESSORIES.
CH. 1.-PRINCIPALS.
§141, Art. 74 to §148, Art. 78. See Penal Code. §149. Presence and participation. Annotated.
1 §150 to §155. See Penal Code.
§149. Presence and participation.
(1.) A principal offender under the law of this state is one who, being present when the offense is actually committed by another, and knowing the unlawful intent of such other, aids by acts or encourages by words the party engaged in the commission of the unlawful act. Would the State, in prosecuting such an aider and abettor as a principal offender, for an offense committed primarily in a foreign country, and consummated in this, be required to show a similar or analogous provision of the law of the foreign country? Fernandez v. S., 25 App.
All persons are principals who are guilty of acting together in the commission of an offense, and this includes not only those who are present at the comsion of the offense, but those who, though absent, are doing their part L. connection with and in furtherance of the common design.
It is further provided by statute (Penal Code, Art. 76) that "all persons who shall engage in procuring aid, arms or means of any kind to assist the commission of an offense while others are executing the unlawful act, and all persons who endeavor at the time of the commission of the offense to secure the safety or concealment of the offenders, are principals, and may be convicted and punished as such."
It is also a well settled general rule that when several persons conspire or combine together to commit any unlawful act, each is criminally responsible for the acts of his associates or confederates, committed in furtherance or in prosecution of the common design for which they combine.
Evidence in this case tends to show that previous to the homicide the accused repeatedly declared his intention to kill the deceased, and that, on the evening of, but before the killing, he went to the house of deceased and told deceased's family to tell him that he and George Nixon, Aaron Nixon and Bill Evans were coming to his house that night to kill him; that about dark on that night the defendant and the said Nixons and the said Evans met at a certain house where they prepared arms and ammunition, and whence they went in the direction of the house of the deceased; that, just before the killing, George Nixon called the deceased from his house to the fence, and, while they were talking at the said
471

(b) OCR

Figure A2: Example of State Session Law

review samples of the dataset and found that the presence of these statutes do not vary significantly within state over time.

The raw text was processed as follows. First, all pages were appended and non-statute material (e.g. headers, footers, table of contents, indexes) was removed. Then, the text was segmented into individual bills, acts and resolutions, using text markers (e.g. 'Chapter' followed by a number) to identify the start of a new statute. Indicators specific to some states were also taken into consideration. Again, a team of research assistant checked the validity of this segmentation process.

iii Introduction of Reference and Drafting System

Table A4 shows the year of the introduction of a reference and drafting system in the US states. We consider the date of introduction of a separate office purposefully in charge of providing legislators help with the searching, storing and drafting of bills. Before the establishment of such an office, these functions were usually performed to a certain degree by the state librarians and/or the attorney general. Where information on the drafting system is not available (for 25 states), we take into consideration the introduction of a reference system (missing for 18 states). In most cases, the introduction of a reference system precedes the introduction of a drafting system or they occur together. Information is gathered from the following sources: Book of States 1935 Chapter 2, Rothstein (1990) and Squire (2012). In those cases where information is not straightforward we add a note. As mentioned in the main text, this information is present only for those states which established these services before 1935. To our knowledge, after that date no information is present.

Table A5: Dates of Introduction of Reference and Drafting System

State	Legislative Reference	Legislative Drafting
AL	1907	1907
AR	1917	
AZ	1917	1917
CA	1904	1913
CO	1931	1931
CT	1907	1901
GA	1914	1929
IA	1911	1911
IL	1913	1913
IN	1907	1907
KS	1929	1929
LA	1921	
MA	1910	1920
MD	1916	1916
ME	1917	
MI	1907	1917
MT	1909	
NC	1915	1915
ND	1909	1909
NE	1911	1911
NH	1913	1913
NJ	1914	
NM	1921	
NY	1890	1909
OH	1913	1913
PA	1909	1909
RI	1907	1926
SD	1907	1907
TX	1909	
VA	1914	1914
VT	1911	1912
WI	1901	1901

iv Descriptive Statistics

Table A6: Descriptive Statistics

VARIABLES	N	mean	sd	min	max
Divided Government	2,311	0.370	0.483	0	1
Introduction Civil Service	2,499	0.520	0.500	0	1
Introduction and Repeal Civil Service	2,550	0.506	0.500	0	1
Introduction of Drafting System	1,632	0.848	0.359	0	1
Log Obligation	2,497	8.355	0.913	3.219	11.09
Log Permission	2,497	7.542	0.984	2.485	10.32
Log Constraint	2,497	6.228	1.047	1.609	9.421
Log Entitlement	2,497	7.980	0.940	2.833	10.69
Log Total Provisions	2,497	9.173	0.935	4.094	11.93
Reform Year Dummy	2,550	0.0184	0.135	0	1

v Robustness Checks

Table A7: The Effect of the Divided Government on the Different Types of Provisions

VARIABLES	(1) Entitlement	(2) Entitlement	(3) Entitlement	(4) Constraint	(5) Constraint	(6) Constraint	(7) Permission	(8) Permission	(9) Permission	(10) Obligation	(11) Obligation	(12) Obligation
Introduction Civil Service	0.985**	0.132*	0.143*	1.284**	0.0899	0.106+	1.109**	0.145*	0.157**	0.896**	0.134+	0.146*
	(0.0714)	(0.0619)	(0.0584)	(0.0765)	(0.0701)	(0.0624)	(0.0734)	(0.0562)	(0.0510)	(0.0711)	(0.0720)	(0.0647)
Constant	7.449**	-6.185**	-4.058**	5.535**	-8.658**	-6.201**	6.943**	4.589**	5.688**	7.871**	-5.055**	-2.817*
	(0.0376)	(0.932)	(1.085)	(0.0403)	(1.229)	(1.291)	(0.0387)	(1.008)	(1.396)	(0.0374)	(0.975)	(1.143)
Observations	2,448	1,438	1,382	2,448	1,438	1,382	2,448	1,438	1,382	2,448	1,438	1,382
State FE	X	X	X	X	X	X	X	X	X	X	X	X
Time FE		X	X		X	X		X	X		X	X
State-Specific Trends		X	X		X	X		X	X		X	X
Controls		X	X		X	X		X	X		X	X
Lagged DV			X			X			X			X

Notes: Columns 1-3, Columns 4-6, Columns 7-9, Columns 10-12 show respectively the results for the OLS regression models with the (logged) number of entitlements, constraints, permissions and obligations as dependent variable. The specifications for the different dependent variables are the same. The first model uses state fixed effects, the second model adds biennium fixed effects, time-varying controls (introduction of drafting system and divided government) and state-specific time trends and the third model adds the lagged dependent variable. **p<.01; *p<.05; +p<.1.

Table A8: The Effect of the Divided Government on the Number of Provisions in Years with No Merit System

VARIABLES	(1) Leg Detail	(2) Leg Detail	(3) Leg Detail
Divided Government	0.0139	-0.00556	0.00573
	(0.0577)	(0.0664)	(0.0710)
Constant	8.631**	-0.102	190.8
	(0.0142)	(72.36)	(143.9)
Observations	974	554	508
State FE	X	X	X
Time FE		X	X
State-Specific Trends		X	X
Controls		X	X
Lagged DV			X

Notes: Column 1 shows the results for the OLS regression model with state fixed effects. Column 2 adds year fixed effects, time-varying controls (introduction of drafting system) and state-specific time trends. Column 3 adds the lagged dependent variable. In all models standard errors are clustered by state. **p<.01; *p<.05; +p<.1.

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