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What Shapes the Quality and Behavior of Government Officials? Institutional Variation in Selection and Retention Methods

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Abstract

In representative democracies, a variety of rules are employed to select and retain public officials to reflect public preferences over policies. We discuss the literature on selection and retention rules for government officials, focusing on low-information offices. First, we overview the historical origins and the scope of the variation in selection and retention rules. Second, we provide conceptual frameworks for assessing the advantages and disadvantages of direct elections and discuss various factors that influence the functioning of elections. Third, we present empirical regularities. We summarize the baseline effects of the institutional variation and their interaction with factors such as media and compensation. Finally, we discuss outstanding questions on theoretical and empirical fronts, and how the digitization of government information and advances in machine learning can open up new avenues for research.

1. INTRODUCTION

A primary premise of representative democracy is that the policies enacted by public officials should reflect the public will and that this is accomplished in large part by selecting and retaining public officials via general elections. In practice, there exist a plethora of rules employed to select and retain public officials. For example, state court judges are elected by the voters in a subset of US states, while federal court judges are uniformly appointed and life tenured. Moreover, a variety of different electoral methods are used across states, including partisan elections, nonpartisan elections, and retention elections. Likewise, public utility regulators are appointed by the governor in about 40 states and are elected in the rest of the states. At the local level, most school boards are elected, but some are appointed by the mayor, city council, or by the governor.

Such variation begs three questions: (a) how such institutional variation arose historically, (b) why such a variation may matter, and (c) empirically, to what degree it matters and along what policy dimensions. We provide an overview of existing knowledge on these questions, discuss remaining questions, and propose new avenues for research.

We focus on low-information offices—i.e., offices about which voters tend to have less information compared to national legislative bodies and top executive officials of the central government. These are important in many settings because, despite the relatively low amount of media coverage devoted to them, they often have considerable power over specific policy domains.

We proceed as follows. First, we provide an overview of the institutional variation in selection and retention rules in the United States and other democracies. We describe historical origins as well as the scope of the variation, i.e., the type of offices—mayors, judges, regulators, and school board superintendents. Second, we discuss conceptual frameworks. We first discuss frameworks that highlight the advantages of direct elections, such as the principal-agent model and issue bundling. Then, we consider a variety of factors that undermine the benefits of direct elections. We discuss both institutional factors (party cues in elections, the timing of the elections, and collective decision making) and noninstitutional factors (pandering and adverse selection on officials' quality). Third, we discuss empirical regularities. We first summarize the main effects of selection and retention rules. Then, we discuss the interactions between selection and retention rules and surrounding factors, such as media environments and compensation for officials. Finally, we conclude by discussing the remaining questions on both theoretical and empirical fronts. We also highlight how the digitization of government information and advances in machine learning can open up new avenues for research.

The design of selection and retention procedures plays a distinctive role in shaping government officials' quality and behavior. Since our article focuses on this variation, it is distinct from other reviews that discuss more general issues in political selection (Dal Bó & Finan 2018) and accountability (Ashworth 2012). However, our article and the existing reviews are clearly complements. Together, they provide a comprehensive overview of the big-picture questions regarding the selection and retention of government officials.

Before proceeding, we mention two caveats. First, since our article focuses on electoral institutions, we touch only briefly on the literature attempting to assess the broader effects of regulatory institutions on government performance or the impact of the bureaucratic structure. That literature runs from studies that analyze the impact of general factors such as whether a country has a British, French, or socialist legal system (e.g., La Porta et al. 1999), or whether a nation's government has a more or less centralized structure (see Bardhan & Mookherjee 2006 for a review), to studies of more specific factors such as the compensation, career stability, and recruitment procedures of bureaucrats (e.g., Rauch & Evans 2000, Finan et al. 2017).

Second, we do not have space to consider all of the variation that exists in electoral institutions around the world. For example, we do not discuss the possible implications of term limits or gender/group electoral quotas. Studies by Besley & Case (1995), Kurtz et al. (2009), and Alt et al. (2011) consider the impact of term limits on fiscal policy, selection, performance, representation, and the distribution of power. Mandatory gender quotas—lower bounds on the share of posts or nominations that must be allocated to women—exist in many countries, and in other countries political parties voluntarily impose quotas on themselves (Dahlerup et al. 2014). Recent work on the case of Sweden by Besley et al. (2017) finds that even voluntary quotas can affect the quality of politicians.

2. INSTITUTIONAL VARIATION AND ITS HISTORICAL ORIGINS

2.1. US States

One of the most important contexts with spatial variation in the selection and retention rules for identical offices is the US states. Three types of offices have received considerable attention in the literature: judges, public utility regulators, and school board superintendents. We discuss this literature in Sections 3 and 4. There is also some research on state attorneys general (Thompson 1974, Provost 2009, Dove 2014). *The Book of the States*, an annual publication by the Council of the State Governments, provides a comprehensive overview of the variation in state government institutions.

2.1.1. The judicial branch. For state judges, there are four commonly used selection and retention rules: appointment, partisan elections, nonpartisan elections, and retention elections. Various combinations of these rules generate five large groups of states. **Table 1** summarizes these five groups for the state trial court judges. Appointment and reappointment of judges are determined either by the governor or by the state legislature. The gubernatorial appointment is more common than the legislative appointment. In partisan elections, judicial candidates are selected in party primaries and run in general elections with party affiliation on the ballot. In nonpartisan elections, judicial candidates run for elections without party affiliation on the ballot. Nonpartisan elections often have two rounds. In the first round, multiple candidates that satisfy minimal requirements compete against each other. In the second round (run-off), the top two candidates in the first round compete. A retention election, in the context of the state judiciary, refers to a noncompetitive

Table 1 Selection and retention rules for the state trial courts

Number of states	Initial selection	Reselection	Set of states
9	Partisan election	Partisan election	AL, IN, KS, LA, MO, NY, TN, TX, WV
22	Nonpartisan election	Nonpartisan election	AR, AZ, CA, FL, GA, ID, IN, KY, MD, MI, MN, MS, MT, NC, ND, NV, OH, OK, OR, SD, WA, WI
3	Partisan election	Retention election	IL, NM, PA
10	Appointment	Retention election	AZ, AK, CO, IA, IN, KS, MO, NE, UT, WY
11	Appointment	Appointment	CT, DE, HI, MA, ME, NH, NJ, RI, SC, VA, VT

Four states (Arizona, Indiana, Kansas, and Missouri) exhibit within-state variation of two different systems (partisan or nonpartisan election and appointment or retention election) at the district level. These states are included in both categories. In New Mexico, judges are first appointed by the governor, then they must run in a partisan election, and subsequent elections are retention elections. In Maryland, judges are initially appointed by the governor and subsequently run in nonpartisan elections. We classify a state as having nonpartisan elections if party labels do not appear on the general election ballot. In Arizona (in some counties), Maryland, and Ohio, nominations are partisan, but the general election ballot is nonpartisan. For more details, see the website on the judicial selection systems of the American Judicature Society (<http://www.judicalselection.us/>). Table adapted with permission from Lim et al. (2015); copyright 2015 American Economic Association.

Table 2 Offices elected in various states

Office	States where elected
Commissioner of agriculture	AL, FL, GA, IA, LA, KY, MS, NC, ND, SC, TX, WV
Commissioner of insurance	CA, DE, GA, KS, LA, MS, MT, NC, ND, OK, WA
Public utility commissioner	AL, AZ, GA, LA, MS, MT, NE, NM, ND, OK, SD
Superintendent of education	AZ, CA, GA, ID, IN, MT, NC, ND, OK, SC, WA, WI, WY

approval (yes-or-no) vote by the voters. Incumbent judges run for retention without challengers. Candidates who receive “yes” votes that exceed a threshold, typically 50%, are retained.

Several states have within-state variation of the rules. There are two main types of within-state variation: across geographic units and across hierarchical levels. Four states have a within-state variation across districts: Arizona, Indiana, Kansas, and Missouri. Eight states have a variation across different levels of the judicial hierarchy: California, Florida, Maryland, New York, North Carolina, Oklahoma, South Dakota, and Tennessee.

The cross-state variation has a notable pattern of regional clustering. While the appointment is prevalent in the Northeast, the partisan election is prevalent in the South. Such geographic clustering is influenced by the time in which a state joined the union and by which rule was popular at the time of joining. Hanssen (2004a,b) discusses the history of judicial selection rules in detail.

2.1.2. The executive branch. There is also a significant cross-state variation in the degree to which public officials in the executive branch are elected separately (unbundled) from the governorship.¹ In Alaska, Hawaii, Maine, New Hampshire, New Jersey, and Tennessee, the only elected executive officers are the governor and lieutenant governor.² In all other states, at least one additional state office is independently elected, the average being 4.5.³ The most common state offices that are independently elected are those of attorney general (43 states), secretary of state (35 states), state treasurer (35 states), and state auditor (33 states). **Table 2** summarizes other elected state officials.

In many states, some offices have multiple jurisdictions. For example, the Florida chief financial officer oversees the state treasury, the insurance industry, banking and finance, and the state fire marshal. The Arizona corporation commission oversees public utilities, railroad and pipeline safety, and financial services. The New Mexico public regulation commission oversees transportation, public utilities, telecommunications, pipeline safety, and the state fire marshal.

The history of the unbundled executive in the US states is long and complex. Many scholars argue that the impetus behind it was the Jacksonian idea that popular election was the best way for citizens to control their politicians. However, this does not seem to be the whole story. Separately elected attorneys general, state treasurers, state auditors, and secretaries of state generally date back to the 1840s and 1850s, or to statehood for states admitted later. A few cases predate 1840: Vermont first elected its treasurer by direct popular vote in 1813; Mississippi began electing its attorney general, treasurer, auditor, and secretary of state in 1833; and Connecticut began electing its treasurer, comptroller, and secretary of state in 1838. There was then a surge of activity starting in the late 1840s. **Table 3** documents this trend, specifying the year each of the four offices was

¹ Readers are referred to Berry & Gersen (2008) and Calabresi & Terrell (2009) for a debate about the merits and drawbacks of the unbundled executive in the United States.

² In Maine and New Hampshire, the position of lieutenant governor does not exist. Therefore, the only elected state executive office is the governor.

³ This average does not include the governor or lieutenant governor.

Table 3 Year office first elected in state

Year	Attorney general	Secretary of state	State treasurer	Auditor/comptroller
1847	NY	NY	NY	NY
1848	WI	IA, WI	IA, WI	IA
1849	–	–	–	–
1850	CA, MI, TX	MI	MI, TX	MI, TX
1851	KY, OH	OH	CA, KY, OH	CA, KY, OH
1852	LA, MO	IL, IN, LA, MO	IL, IN, LA, MO	IL, IN, MO
1853	IA	–	–	–
1854	–	–	–	–
1855	MA	MA	MA	LA, MA

The information was collected by the authors, primarily from state political histories and contemporary newspaper articles.

first elected in several states.

Several southern states began unbundling during the Reconstruction era. For example, Arkansas first elected its attorney general, treasurer, auditor, and secretary of state in 1866, and Alabama and North Carolina followed in 1868. Maryland, a border state, began electing its attorney general and comptroller in 1867. Other states lagged behind. Georgia first elected its attorney general, treasurer, auditor, and secretary of state in 1880, Vermont first elected its auditor and secretary of state in 1884, and Delaware first elected its state auditor and state treasurer in 1898.

The early unbundling was not limited to these offices. For example, in 1847, New York also elected its state engineer and surveyor, three members of the canal commission, and three state prison inspectors; in 1850, Michigan also elected its state commissioner of education and state commissioner of public lands. In 1851, Kentucky also elected its state superintendent of education, the register of the land office, and the president of the board of internal improvement. In 1868, North Carolina also elected its state superintendent of public works and state superintendent of education. Also, many states began electing judges, including state supreme court judges, around this time.

Other waves of activity occurred during the populist and progressive eras, when many regulatory offices were created or made elective. For example, the state agricultural commissioner was first elected in Alabama in 1886, in Florida in 1888, in North Dakota in 1889 (at statehood), in Arkansas and Georgia in 1890, and in Kentucky in 1891. State railroad, commerce, public service, or public utility commissioners were first elected in the late 1880s in Alabama, Florida, Iowa, Minnesota, Missouri, New Hampshire, North Dakota, South Carolina, South Dakota, Tennessee, Texas, and Wisconsin. They were first elected in the early 1900s in Arkansas, Colorado, Georgia, Kansas, Montana, Nebraska, North Carolina, and Oklahoma. Almost all of the elections of state offices in the executive branch are partisan. Education-related offices are an exception: Many state school superintendents are elected in nonpartisan elections.

It is worth noting that many states exhibit within-state variation across offices, even though such offices have been subject to the same kind of historical evolution mentioned above. For example, a majority of states elect state court judges, whereas only about 20% of the states elect public utility commissioners.

2.2. US Local Governments

There is also a considerable variation in selection and retention rules at the local level in the United States.

2.2.1. Mayors and managers. Most importantly, city governance tends to take one of two forms: (a) the mayor-council system and (b) the council-manager system. The former is common in large cities, while the latter is prevalent in smaller cities and in the majority of cities. The governance structure variation generates a variation in selection rules for top administrators of the city government. In the mayor-council system, voters typically elect the mayor. In the council-manager system, the council, which is an elected governing body, appoints a professional manager.

Mayors in the mayor-council system typically have strong political independence from the council. They have a broad administrative authority, such as the power to appoint and dismiss department heads. Ferreira & Gyourko (2009) estimate that more than 45% of approximately 1,900 cities with more than 25,000 residents have directly elected mayors. They also report that the majority of cities with direct elections are institutionally nonpartisan, meaning that candidates' party affiliations are not on the ballot. The variation in the city governance has received considerable scholarly attention (see, e.g., Levin & Tadelis 2010, Coate & Knight 2011, Vlaicu & Whalley 2016).

The council-manager system first appeared in the 1910s. Dayton, Ohio, was the first large city to adopt it after a number of smaller cities beginning with Sumter, South Carolina, in 1912. Diffusion was generally gradual—for example, in 1935 about 400 cities were using the system, while in 2019 it was used by more than half of the 4,300 municipalities with populations over 10,000 (ICMA 2019).

There is also considerable variation in whether city officials are elected in partisan or nonpartisan elections. Generally, nonpartisan elections have increased over time, but this change has not been uniform or unidirectional. Also, in some cases, the change was imposed by state law—e.g., in Minnesota, North Dakota, and Wisconsin—while in other cases it was chosen by the cities themselves.

2.2.2. Other offices. Research on other local offices in the United States has been limited relative to their counterparts at the state level. This is primarily due to the barriers in the information collection process. Unlike information on state-level offices, for which various convenient sources exist, information on local offices is much more challenging to collect.⁴

Nevertheless, several interesting cases have received scholarly attention. For example, California has within-state variation in the selection rules for city treasurers. This variation arose through city-level referenda on the selection of treasurers. This historical evolution enables one to estimate the causal effect of the selection rules using the regression discontinuity design, comparing the referenda that barely passed and those that barely failed. Whalley (2013) takes such an approach and argues that appointed treasurers reduce the cost of borrowing by about 13–23%. In New York state, some town assessors are elected while others are appointed. Sances (2016) estimates the impact of the selection rule using a difference-in-differences design and finds that elected assessors assess properties less frequently than appointed assessors, leading to lower effective tax rates, especially on homes with higher values.

Another example is provided by school boards. Some school boards are directly elected and have taxation authority. Others are separately elected but only have powers over policy decisions

⁴Data collection for state-level offices is often challenging as well, relative to federal offices. Typically, though not always, researchers must reach out to state governments' information sources state by state. Even when nationwide data sets are readily available, the data sets that state governments provide tend to be more detailed. However, national organizations of state-level offices (e.g., the National Center for State Courts) often collect systematic information on variations across the state and over time, even when they do not collect data on the officials' behavior.

such as curriculum choice. They do not control the overall size of school spending but determine how to allocate the budget. Other school boards are appointed. Hoover (2008) studies test scores and finds that student performance does not change significantly depending on whether the school board or school superintendent was elected or appointed. Berry & Howell (2007) study voting in school board elections and argue that increasing or higher test scores positively affect election outcomes when testing is highly salient but not otherwise. Barrows (2014) applies a regression discontinuity design to the grades assigned to schools by the Florida Department of Education (using their point scores as the running variables). He finds evidence that voters reward incumbents when their local schools achieve a grade of A rather than B. Leal et al. (2004) study the effects of at-large versus districted school board elections.

In many parts of the United States, county governments are as important as municipal governments. The overall structures tend to be similar to municipal governments; but in addition, there is usually even more unbundling of the executive than in cities. In particular, most counties have separately elected sheriffs, who are the chief law-enforcement officers. Separately elected county treasurers, auditors, clerks, and coroners are also common.

2.3. Other Countries

Compared to the United States, the variation in selection and retention rules for officials in other countries is relatively limited. For example, in European and Asian countries virtually all judges are appointed. There are some differences in how the appointments are made—e.g., in continental Europe legal scholars distinguish between civil service appointments, shared appointments, and shared appointments with partisan quotas (Volcansek 2007)—but there is less variation in selection and retention rules that resemble their US counterparts.

A possible reason for these divergent patterns is the critical role that the Jacksonian, populist, and progressive movements played in promoting elections in the United States, as noted above. One motive for switching to direct election was the view that the selection and retention of many public offices was controlled by a small, nonrepresentative, political or economic or social elite. In the view of reformers, connections were often more important than qualifications in determining who filled these positions: There were frequent instances and charges of nepotism, as well as bribery and other forms of corruption. Elections were viewed as a way to help solve these problems, by taking power away from the small group and giving it to the mass of citizens. But there are other possible solutions to this type of problem. One, which has been embraced to various degrees in different countries, is the adoption of relatively rigid, rule-based, Weberian bureaucratic organization—including exam-based selection, careful monitoring of performance, and meritocratic promotion decisions. These reforms take power away from the initial group by sharply reducing or eliminating discretion.⁵

There is considerable variation in the selection and retention rules for the executive heads of local governments (e.g., cities and villages) in European and Asian countries. In this section, we discuss three countries in Europe (Germany, the United Kingdom, and Italy) and two countries in Asia (Indonesia and China). There are other interesting cases as well. Israel introduced the

⁵Rauch & Evans (2000) find evidence that meritocratic recruitment is associated with better government performance in a sample of 35 developing countries, while Evans & Rauch (1999) find evidence that Weberian state structures are positively associated with economic growth. Colonnelli et al. (2020) find that patronage leads to the selection of less competent public officials in Brazil, while Xu (2018) finds that the introduction of civil service reforms improved the performance and promotion decisions of bureaucrats serving in the British colonies.

direct elections of mayors in 1975, as did Colombia in 1986, Slovakia in 1990, Hungary in 1994 (for some cities) and 1998 (for the remaining cities), Costa Rica in 1998, Poland in 2002, and Croatia in 2007. Countries such as France and Spain retain the parliamentary model, in which the council chooses the mayor. In Belgium and the Netherlands, mayors are appointed by the central government.

2.3.1. Germany. Germany introduced the direct election of mayors in the early 1990s.⁶ Historically, German municipalities had a dualistic scheme that combined elected councils and council-selected executives. Elected councils had the right and responsibility to carry out all local matters on a nonpaid basis. The executives were either a council-selected mayor or a council-selected collegiate body (called magistrate) who carried out council-derived tasks but also had administrative functions of their own.

From 1945, new local governance patterns arose, reflecting the influence both of the occupation forces and of the traditional dualistic scheme. For example, the two South German states (*Länder*) of Baden-Württemberg and Bavaria belonged to the US Occupation Zone. Their municipal charters introduced the direct election of mayors by the voters. Two states that belonged to the British Occupation Zone—Nordrhein-Westfalen and Niedersachsen—abandoned the traditional dualistic scheme. They adopted a monistic British local governance model of governance by the council. Other states revived the traditional dualistic scheme composed of elected councils and council-selected magistrates or mayors. This spatial variation in the local governance structure was maintained until the late 1980s.

In the early 1990s, state parliaments' legislation led to a uniform system of the US form, like the one that had been in place in the southern states of Baden-Württemberg and Bavaria. All states, except for the city-states of Berlin, Hamburg, and Bremen, adopted the direct election of the mayor, combined with the elected council. Since the 1990s, local governance has exhibited a great deal of homogeneity across regions, compared with the past. Hessami (2018) uses the process of rule change in the state of Hess to compare the behaviors of appointed and elected mayors, which we discuss in Section 4.

Despite the baseline similarities, there remain subtle geographic variations in the way that the direct election of mayors is operationalized—e.g., in nomination procedures for mayoral candidates. Local provisions in the state of Bavaria grant political parties exclusive rights to nominate candidates. In contrast, the states of Baden-Württemberg and Saxony gave individuals exclusive rights to nominate themselves. The remaining ten states follow a hybrid model, giving the nomination right to both political parties and individuals. There also exists geographic variation in the term length of the mayors and its synchronization with the legislative period of councils. The councils typically serve five years, while in most states mayors serve for more than five years. This leads to the staggering of the terms of the councils and the mayor. Only three states—Nordrhein-Westfalen, Niedersachsen, and Bavaria—have synchronized elections of councils and mayors.

2.3.2. United Kingdom. England and Wales have introduced the direct election of mayors in 2000. As of 2019, 15 local authorities had directly elected mayors.⁷ The creation of the

⁶Our description of the German system closely follows the one by Wollmann (2005).

⁷This count excludes eight metro mayors and the mayor of London, who are directly elected. The metro mayors and the mayor of London were established by different legal provisions than the ones regulating local authority mayors and have broader powers.

direct election of mayors was based on the Local Government Act 2000 and related legislation (Sandford 2019).⁸ The Local Government Act 2000 initially required local authorities with a population over 85,000 to adopt one of three systems: (a) a mayor and cabinet, (b) a mayor and a council-manager, or (c) a leader and a cabinet.⁹ This was to replace the traditional committee system, which was perceived to be inefficient. In the committee system, policy committees make decisions to be approved by a full council. Local authorities with a small population were allowed to maintain a slimmed-down version of the committee system. The motivation behind the direction of mayors was to enhance accountability.

Further changes were introduced after 2000. The option of combining a mayor and a council-manager was abolished by the Local Government and Public Involvement in Health Act 2007. Also, local authorities of any population size may reintroduce the committee system. Moreover, initially local authorities could create the direct election of mayors only by referendum; the majority of referenda on creating elected mayors has resulted in “no” votes. From 2007, they can also create a directly elected mayor by resolution. England and Wales currently have three forms of governance available to localities: (a) a traditional committee system, (b) a leader and cabinet, and (c) a directly elected mayor and a cabinet.

2.3.3. Italy. Italy introduced the direct election of mayors in 1993, aiming to strengthen the mayors’ powers and increase their accountability. Mayors are elected differently depending on city size. For cities with populations below 15,000, the system is a simple plurality rule. For larger cities, a two-round system is used: If no candidate receives more than 50% of the vote in the first round, a run-off election takes place. Below the 15,000 threshold, each mayoral candidate can be supported by only one list of city council candidates, and the list supporting the winning candidate receives two thirds of the council seats. Above the threshold, mayoral candidates may be supported by different lists, and the lists endorsing the elected mayor get at least 60% of the seats. Veronese (2008) studies a panel of elections and fiscal policy measures and finds evidence that the direct election of mayors led to more differentiation between the mayor’s executive and legislative roles. She also finds evidence that the reforms were associated with changes in the composition of local government spending.

2.3.4. Indonesia. Indonesia shows spatial variation in the selection rules for village heads. The administrative system of Indonesia consists of four levels: province, regency/city, district, and villages. Villages, which constitute the lowest level, are of two kinds: *desa* (rural villages) and *kelurahan* (urban villages). Villagers elect the village head of a *desa*, while the head of the district appoints the village head of a *kelurahan*. District heads have the right to conduct appointments, transfers, and dismissals of appointed village heads. Martinez-Bravo (2014) studies how this variation influences the transition from dictatorship to new democracy and the political turnover of village heads.

2.3.5. China. China shows cross-time variation in the selection rules for local government officials in villages. The Communist Party first organized village governments during the 1950s. The village leadership has a dual structure composed of a village committee, headed by the village chairman, and the Communist Party branch. Initially, the county government filled all of the

⁸The Local Government Act 2000 specifies the rules for a large share of localities but not all cities. For example, the Greater London Authority Act 1999 instituted the direct election of the mayor of London.

⁹In the leader-cabinet system, the council selects the leader, and the leader chooses the other members of the cabinet.

village leadership positions by appointment, in cooperation with the Communist Party branch in the village. Then, local elections of the village committee were rolled out across all villages in the 1980s and 1990s. Elections were codified in the Organization Law on Village Committees in 1987. Martinez-Bravo et al. (2017) provide an overview of the variation over time and discuss the central government's motivation behind it.

3. CONCEPTUAL FRAMEWORK

In this section, we discuss the theoretical reasons selection and retention rules matter. We begin with theories that highlight the advantages of direct elections. Then, we introduce several factors that can limit the desirable functioning of elections. Lastly, we discuss additional factors to consider in evaluating selection and retention rules, for which welfare implications are not clear-cut.

3.1. Advantages of Direct Elections

We discuss two conceptual frameworks that highlight the advantage of direct elections: the principal-agent model and the issue-bundling model. We can apply the principal-agent framework to a broad range of elections in which voters are well informed. In contrast, the issue-bundling framework is suitable for understanding elections for low-information offices.

3.1.1. Principal-agent model. The first step in thinking about the influence of selection and retention rules is to view them from the perspective of the classical principal-agent model, as done by Barro (1973), Ferejohn (1986), and Banks & Sundaram (1993). Besley (2006) provides an excellent overview of a broad range of political agency models. The principal-agent model serves as a useful cornerstone for the argument that elected officials would respond to voters' interests better than appointed officials do, because appointed officials are not directly held accountable by the voters.

This argument has a caveat, however, in that appointed officials can be held accountable, at least indirectly, because the official making the appointment—typically the head of the executive branch, such as a governor or mayor—is held accountable by the voters through direct elections. This caveat leads to the idea of issue bundling under appointment, proposed by Besley & Coate (2003).

3.1.2. Issue (un)bundling. Besley & Coate (2003) focus on the fact that, in most elections of major politicians, the appointment of lower-level government officials is not a major issue. For example, a majority of public utility commissioners are appointed by the governor. Their appointments or the electricity rates do not usually become a significant issue in gubernatorial elections. Therefore, the appointment of lower-level government officials can easily be subject to the influence of special interest groups rather than serve the voters' interests.

3.2. Potential Limitations of Direct Elections

The two theoretical arguments above imply that the election would serve voter preferences better than the appointment does. However, numerous conditions need to be met for elections to function in an ideal manner as assumed by this perspective. Later studies identify many factors that may hinder the proper functioning of elections. We can divide such factors into roughly two types: institutional and noninstitutional factors.

3.2.1. Institutional factors. The institutional factors that we focus on are: (a) whether party affiliation is placed on the ballot, (b) whether the election of low-information offices is held

simultaneously with major elections, and (c) whether the officials' decision-making process is collective or individual.

3.2.1.1. *Partisan elections and voter information deficit.* The arguments in favor of elections implicitly assume that voters are informed about candidates' characteristics and behavior. The validity of this assumption is not easily guaranteed for a large number of public offices. Voters often lack enough information about candidates for the judiciary, regulators, and school board superintendents. Under the veil of voter ignorance, can the candidates' quality or behavior play a significant role in elections? And how does this depend on the specifics of the electoral process—e.g., partisan versus nonpartisan?

Ashworth & Bueno de Mesquita (2008) present a model of electoral competition where voters choose candidates based on two dimensions: party/ideology and quality. The strengthening of voters' weight on party/ideology naturally reduces the role of candidate quality in elections. We can easily extend their argument to draw implications on partisan elections. The availability of party affiliation on the ballot may easily limit the association between candidates' competence or policy and their election outcomes. Hirano & Snyder (2019) extend the logic to analyze possible differences between primary elections and general elections in the United States. In primary elections the competing candidates are all affiliated with the same party (so there are no party labels on the ballot), and the ideological differences between them are usually much smaller than those between candidates from different parties competing in general elections. Thus, as in the case of nonpartisan elections, factors other than party/ideology—including candidate quality and incumbent performance—might have a larger effect on voting decisions and outcomes in primary elections, at least compared with partisan general elections.

3.2.1.2. *Timing of elections and capture by special interest groups.* Turnout is often very low in local elections not held concurrently with presidential or major midterm elections. For example, in a sample of almost 400 municipalities from 2004–2006, Oliver et al. (2012) report that average turnout in nonconcurrent elections was only 18%. Moreover, turnout was skewed in various ways—e.g., it was much higher among homeowners than among average voters. Anzia (2011, 2014) argues that turnout can be so low that electoral outcomes are sometimes dominated by relatively narrow interest groups, such as teachers' unions. She offers evidence consistent with this hypothesis, finding in particular that teachers' salaries are higher in school districts that hold nonconcurrent school board elections. Berry & Gersen (2011) argue that the evidence of a causal relationship is weak, however. They show that although salaries are higher in districts where elections are held off-cycle, the difference is small after adding some appropriate controls and disappears in difference-in-differences or instrumental variables specifications. They also find no robust relationship between election timing and student test scores. Kogan et al. (2018) show that while timing matters, it has a particularly large impact on voter age, and the elderly tend to be the most overrepresented group in low-turnout special elections.

3.2.1.3. *Collective versus individual accountability.* Electoral accountability potentially varies depending on whether government decisions are made mainly by individual officials or by groups. Clearly, laws passed by legislatures are collective decisions. By contrast, executive and judicial decisions are often made by individuals, or at least there is some official at the top who is supposed to be responsible—the trial court judge, state attorney general, sheriff, or mayor. Sometimes executive or judicial decisions are made collectively, as in the case of appellate courts or public utility commissions. More generally, in any system with shared powers or checks and balances, assigning blame or rewards can be difficult even for experts, let alone voters.

If a decision-making process is mainly individual, then the relationship between the voters and the politician is straightforward. It is reasonable to hold individual officials accountable by letting them run for reelection on their records. In the case of collective decisions, however, accountability may require other organizations, such as political parties, to mediate between voters and politicians. Consider the case of a legislature that passes a number of laws over the course of a session. On what basis should a voter reelect their representative? Should the voter consider only their own legislator's individual roll-call record? What if some bills were passed without roll-calls? And even if voters were able to do this, would this result in socially desirable collective outcomes? Do checks and balances necessarily reduce accountability by making it difficult for voters to assign responsibility for outcomes? These issues have been addressed theoretically in papers by Persson et al. (1997, 2000), Dal Bó (2007), and Snyder & Ting (2008), among others.

If political parties form and if one party controls the legislature, then legislators associated with that party can be held accountable for the aggregate outcomes. This suggests that legislative elections should be partisan. There is a tension, however, between dyadic, district-level accountability and collective, partisan accountability, and different polities have resolved this tension in different ways (Carey 2008). Experimental evidence by Duch et al. (2015) suggests that in coalition governments, voters are likely to view the party with the most seats or the strongest proposal power—e.g., the prime minister's party—as most responsible for policy outcomes. The cross-country analysis of Persson et al. (2003) finds evidence that corruption is lower when the electoral rules and party system favor greater individual accountability and greater competition.

3.2.2. Noninstitutional factors. For noninstitutional factors, we discuss (a) the possibility of incumbents' pandering and (b) adverse selection of candidates in the dimension of competence.

3.2.2.1. Pandering. The key arguments in favor of elections, discussed in Section 3.1, rely on the assumption that shifting government officials' behavior toward voter preferences is beneficial to the voters. In practice, such an assumption can easily be violated. One well-known argument against such an assumption is based on the possibility of information asymmetry between the electorate and government officials. Canes-Wrone et al. (2001) and Maskin & Tirole (2004) consider a situation in which the desirability of a policy hinges on an uncertain state of the nature that is visible to public officials but not to the voters. In such a situation, the government official may decide to pander to the voters by choosing a policy that is suboptimal under the realized state of the world but is ex-ante optimal under the veil of ignorance. This perverse incentive under strong reelection concerns may undermine voter welfare.

3.2.2.2. Adverse selection. Another argument against strong reelection incentives is related to the adverse selection on the quality of public officials. Voters do not only care about policies but also care about public officials' other attributes, such as competence or human capital. Once we consider multiple dimensions of candidate characteristics and behavior, it is no longer straightforward that inducing government officials to choose a policy that voters want is desirable. This is the case even without considering the pandering discussed above.

Suppose that government officials face a more substantial pressure to cater to voters or a higher chance of losing the seat in the election regime. This implies that the long-term value of holding office is smaller for the elected than for the appointed, *ceteris paribus*. This, in turn, can cause adverse selection of the officials in terms of competence and human capital. Candidates with a strong career history and attractive outside options may avoid being elected officials, which compromises voter welfare. Lim (2013) makes this point in the context of judicial selection. She computes the value of holding office for judges selected under partisan elections and gubernatorial

appointments, using criminal sentencing and election data. She shows that, even with the same compensation from the office, the long-term value of holding office is significantly lower for elected judges.

More generally, one can extend this argument to compare selection on quality under different systems, such as partisan and nonpartisan elections. One can estimate the degree to which officials' decisions influence retention to compare the value of holding office under different systems.

3.3. Other Conditioning Factors

For other conditioning factors, we consider (a) the heterogeneity of voter preferences and (b) the nature of the tasks.

3.3.1. Heterogeneous preferences of the voters. The conceptual frameworks we discussed so far implicitly assume a unitary preference of the electorate. In reality, there is substantial heterogeneity across localities in voter preferences. Whether local government officials are elected or appointed can significantly influence the aggregation of preferences, i.e., whose preferences are reflected in policy outcomes.

Under the appointment system, government officials serving localities are appointed by the head of the executive branch of a broader jurisdiction. For example, state trial court judges that serve individual districts, which can be as small as one county, are appointed by the governor who represents the entire state. Therefore, the appointment system reflects the median voter's preference in a large polity, such as the state, more strongly than the election system. In a nutshell, the appointment system leads to centralization of policy outcomes.

Lim (2013) and Abrams et al. (2019) present patterns of elected judges' criminal sentencing that suggest a substantial variation in local norms. From a theoretical perspective, it is not obvious whether it is socially desirable to induce the judiciary to cater to local preferences. On the one hand, it may seem that catering to local preferences may maximize local welfare (if we ignore the arguments discussed in Section 3.2). It may, in turn, maximize social welfare in the aggregate. On the other hand, consistency (e.g., in the interpretation of laws) is important for the stability of the system and the fair treatment of citizens. Given this theoretical ambiguity, there needs to be more research along this dimension. Specifically, the literature needs a more detailed discussion of what type of policies we need to tailor locally versus determine centrally. Such a discussion needs to render specific implications for the optimal design of selection and retention methods.

3.3.2. Nature of the tasks. More generally, the nature of the tasks can significantly influence the optimal design of selection and retention methods. As discussed in Section 2, there exists a variety of offices that deal with fundamentally different tasks (e.g., judges and school board superintendents) that have similar institutional variations. Likewise, institutional differences exist across the hierarchy within the same branch of offices (e.g., appellate courts and trial courts). This leads us to the question of the extent to which the institutional variation reflects the nature of the tasks. Does the degree of information asymmetry, the importance of human capital, or the need for policy centralization explain the differences in selection and retention methods across offices and the hierarchy? If not, what could be a desirable direction of institutional changes? We return to this discussion in Section 5.1.

4. EMPIRICAL RESULTS

4.1. Main Effects

As discussed in Section 3.1, a basic premise of the advantages of direct elections is that elected officials would respond to voters' interests better than appointed officials do. Accordingly, several

studies have tested this hypothesis. Besley & Coate (2003) and Gordon & Huber (2007) present results along this argument. The former argue that electricity rates are lower under elected regulators; the latter argue that average jail time for convicted criminals is longer under elected judges. A related set of studies focus on elected officials' responsiveness to voters along the electoral cycle. Huber & Gordon (2004) and Berdejó & Yuchtman (2013) analyze voters' influence on elected judges by documenting electoral cycles on criminal sentencing. Hessami (2018) studies the variation in the selection of mayors over time for the state of Hess in Germany. The state of Hess gradually introduced the direct election of mayors between 1993 and 1998. This change was initiated by a statewide referendum in 1991. A gradual introduction of direct elections, with variation in the term of the last appointed mayor, helps one to estimate the causal effect using a simple difference-in-differences method. Hessami uses this approach to analyze political cycles in the investment grants from the state government. She argues that elected mayors attract 7–8% more investment grants in election years, while such a variation does not exist for appointed mayors.

In contrast to the above studies, others analyze the quality of judicial opinions and voting by US state supreme court judges across selection and retention systems and reach a different and nuanced conclusion. Choi et al. (2010) study the period from 1998 to 2000. Their results show that appointed judges tend to produce higher-quality (i.e., more frequently cited) opinions but a lower number of opinions. Iaryczower et al. (2013) study the period from 1995 to 1998. They estimate structural models of voting to infer judges' unobserved types. They conclude that judges that are shielded from voters' influence tend to have better information, are more likely to change their preconceived opinions about a case, and make fewer mistakes than elected judges.

Using large-scale data, later studies by Ash & MacLeod (2015, 2019) present theoretical and empirical results that highlight the negative impacts of electing judges. They analyze US state supreme court judges' performance from 1947 to 1994, in terms of both outputs (number of cases heard, total words written, and citations to other cases) and quality (citations of their opinions in future cases). Ash & MacLeod (2015) specify a model of time allocation by judges with intrinsic motivation for high performance. They estimate the effect of judges' employment conditions using their within-state changes over time. Their results suggest that the demands for campaigning in contested elections reduce judges' performance in election years. Ash & MacLeod (2019) find that judges selected in nonpartisan elections or an appointment system produce higher-quality work than judges selected in partisan elections.

Lim (2013) and Martinez-Bravo et al. (2017) compare appointed and elected government officials from the perspective of centralization versus decentralization, along the lines of the discussion in Section 3.3. Lim (2013) documents that judges' sentencing harshness tends to be strongly correlated with local electorates' political orientation when the judges are elected rather than appointed. She finds that appointed judges make notably homogenous decisions, likely reflecting the state's median voter preference. Martinez-Bravo et al. (2017) analyze the roll-out of village elections in China from the 1980s. They argue that direct elections are beneficial to local residents' welfare. They specify a model in which the central government delegates the selection of local officials to voters if the central government's monitoring capacity is not strong enough. Their empirical results show that public good provision and the quality (e.g., education level) of local officials improve under the direct election. This is because, under the shortage of the central government's bureaucratic capacity, voters have an informational advantage in selecting and monitoring the local officials. After the Chinese central government strengthened its bureaucratic capacity, it reduced local officials' power in the 2000s.

4.2. Interactions with Other Factors

The conceptual frameworks discussed in Section 3 suggest that the optimality of a selection and retention method hinges critically on other features of the job design and characteristics of the political environment. We now discuss the recent empirical advance in understanding the interaction between selection and retention methods and surrounding factors. We focus on two factors: media and compensation.

4.2.1. Voter information, party cues, and media environments. As discussed in Section 3.2, the direct election of many public offices can suffer from the voters' information deficit and the dominant influence of party cues. Empirical studies on judges provide evidence that party cues significantly influence the election of low-information offices. For example, Canes-Wrone et al. (2014) document that state supreme court judges' decisions on death penalty cases are more congruent with voter preferences in states with nonpartisan elections than in states with partisan elections or appointment. Lim & Snyder (2015) explore the role of party cues and candidate quality in partisan, nonpartisan, and appointment/retention election outcomes. They use candidate-election-level data from two decades of judicial selection in the United States. Their results demonstrate a substantial role of party labels in partisan elections relative to nonpartisan elections and appointment systems. They employ bar association ratings to measure candidate quality and conclude that candidate quality has little influence on election outcomes under partisan elections.

Given the concerns about voter information deficit, the media environment is another important factor in understanding the election for low-information offices. In the areas where media coverage about public officials is not active, an election may not be useful for selecting and retaining candidates whose behavior is congruent with voter preferences. Likewise, under selection and retention rules wherein officials' behavior or quality does not significantly influence outcomes, media coverage may not affect incumbents' behavior strongly.

Lim et al. (2015) study how the influence of active media coverage on judges' behavior in the US state trial courts differs across selection and retention methods. To capture exogenous variation in the amount of newspaper coverage of judges, they exploit the degree of match between judicial districts and newspaper markets. They analyze about 1.5 million criminal sentencing decisions from 1986 to 2006 and newspaper coverage of over 9,800 judges. Their results show that press coverage increases the sentence lengths for violent crimes by judges selected under nonpartisan elections, but not under partisan elections or gubernatorial appointments. Lim & Snyder (2015) analyze how the amount of press coverage about US state trial court judges affects voter turnout in judicial elections. They find that press coverage increases turnout only in nonpartisan elections. These two studies have two important implications for selection and retention methods. First, although voters know little about judicial candidates in general, nonpartisan elections seem to function reasonably well in reflecting voters' preferences in terms of both government officials' decisions and their quality. Second, relative to nonpartisan elections, partisan elections seem to be weaker in such functions, primarily due to voters' usage of party cues. Related studies by Adserà et al. (2003), Snyder & Strömberg (2010), Ferraz & Finan (2011), and Larreguy et al. (2020) all provide evidence that the media environment affects electoral accountability.

4.2.2. Compensation. The classic principal-agent model of election hinges on the assumption that reelection is an important enough reward for politicians. In practice, there is a considerable variation in compensation across offices. Moreover, public sector salaries are often significantly lower than the compensation for workers in the private sector with comparable human capital

(e.g., prosecutors versus private law practice, regulators versus business consultants). This leads us to the following question: How does the evaluation of selection and retention rules depend on compensation levels for government officials?¹⁰

To address this question, it is useful first to consider the primary channel through which election versus appointment attains congruence between government decisions and voter preferences. This question certainly depends on the amount of voter information, which, in turn, depends on the type of office. Voters are likely to have more information about candidates for important executive positions, such as mayors, than about judicial candidates or regulators.

Lim (2013) analyzes the case in which voters have little information about judicial candidates at the point of initial selection and gradually learn about their behavior. In such a situation, compensation plays a crucial role in the degree of public officials' policy congruence with voter preferences. The lack of voter knowledge about candidates in initial elections leads to having officials whose preference diverges from voters. Therefore, reelection concerns become the primary mechanism that achieves the congruence between voter preferences and public officials' behavior. The strength of the reelection incentive hinges on the payoff from the office the incumbents expect for the future. For the offices that render a small payoff, reelection concerns would not induce the incumbents to strongly respond to voters. That is, the election regime would not be practical for achieving congruence between voter preferences and public officials' behavior.¹¹

In contrast, under the appointment regime, the top official making appointments, such as the governor, often has detailed information about the candidates. Thus, the initial appointment is the primary channel producing congruence between public officials' decisions and their appointers. The scenario in which voters elect the appointer implies the congruence between government decisions and voter preferences through initial selection. Therefore, the payoff may not significantly influence policy congruence under the appointment regime.

This interaction between selection and retention rules and the payoffs has an important implication. The advantage of appointment relative to the election, or vice versa, critically depends on the prestige and monetary payoffs derived from the office. For example, suppose that a judgeship is a job with more prestige and compensation than a regulator's job; then, the social desirability of electing judges may be quite different from that of electing a regulator.

5. FUTURE RESEARCH AND CONCLUSION

Despite the long history of this literature, there is much need and room for new and exciting research. We conclude our discussion by proposing several directions for future research. We first discuss important remaining questions on the theoretical front. Then, we propose new empirical approaches to evaluating selection and retention methods.

¹⁰A number of papers consider the effects of compensation on the quality and performance of politicians, holding fixed the selection and retention rules. Empirical studies by Ferraz & Finan (2009) for Brazil, Dal Bó et al. (2013) for Mexico, Gagliarducci & Nannicini (2013) for Italy, and Pique (2019) for Peru generally find that higher compensation tends to be associated with higher quality and performance, but not always. Besley (2004), Caselli & Morelli (2004), Messner & Polborn (2004), and Mattozzi & Merlo (2008) develop theoretical models which, in some cases, predict that an increase in compensation can have perverse effects.

¹¹It is useful to note that an essential factor here is the overall payoff, not only monetary compensation. Some public offices are associated with significant prestige, though they might not render high salaries. Such offices may provide a large sum of nonpecuniary and pecuniary payoffs. In evaluating the effectiveness of reelection concerns, it is vital to consider the composite of many different kinds of payoffs. Hall (2019) assesses how the declining benefits of office have contributed to polarization in the US Congress and state legislatures.

5.1. Theoretical Frontiers

We consider three dimensions in which novel theoretical frameworks would be valuable: (a) welfare evaluation, (b) pitfalls of issue bundling, and (c) decentralization versus centralization.

5.1.1. Welfare evaluation. First, we need a more concrete theoretical understanding of the welfare implications of each selection and retention method. A large part of existing conceptual frameworks focuses on positive theories of how selection and retention rules would shape government officials' behavior. The welfare implications of such predictions, however, are far from obvious. The welfare assessment is complex, mainly because it may differ substantially across offices, i.e., based on the nature of tasks. We discussed some examples of this issue in Section 3. Alesina & Tabellini (2007, 2008) discuss the task-dependent nature of optimal job allocation between politicians (with reelection concerns) and bureaucrats (with career concerns) in a general setting. It would be useful to pursue a more specific discussion of institutional design along the line of their analysis. In a nutshell, we need more concrete theories on the mapping between attributes of public officials' tasks and optimal design of selection and retention methods.¹²

5.1.2. Pitfalls of issue unbundling. Second, there are potential pitfalls of issue unbundling in elections, which scholars have not fully explored. Even when voters elect officials for each office separately, those elected officials may operate under collective budgetary constraints. For example, city mayors and school board superintendents may make decisions with significant spillovers on each other, which stem from the shared pool of the city budget. Elected officials for each office may make decisions independently, while their financial constraints are interlinked. This may cause overspending due to the lack of consideration of the negative spillovers on the functions of other offices. In a nutshell, issue unbundling through separate elections may create a cross-issue version of the common-pool problem, which scholars have traditionally studied in the context of cross-locality conflicts of interests.

5.1.3. Decentralization versus centralization. Third, as discussed in Section 3.3, we need a more concrete welfare evaluation framework for decentralization via election versus centralization via appointment. In general, the benefit of centralization depends on the degree of spillovers across localities and on considerations of equality and fairness. The advantage of decentralization depends on the significance of local preferences and the information that needs to be locally acquired. Policies that are too distant from social norms in an area can be seriously ineffective or even backfire (Acemoglu & Jackson 2017). Abrams et al. (2019) present a theoretical framework that highlights how the variation in local norms influences the optimal design of legal institutions. Overall, the empirical evidence on the effects of decentralization is mixed (see, e.g., Bardhan 2002, Enikolopov & Zhuravskaya 2007, Treisman 2007). More theoretical and empirical explorations in such directions would be valuable.

¹²For example, Lim & Yurukoglu (2018) investigate the influence of US state regulators' political orientation on the conduct of electric utilities. They conclude that appointing conservative regulators may mitigate regulatory holdup and increase investments and service quality. Their argument is analogous to the arguments in the literature on central bank independence: Rogoff (1985) emphasizes the benefit of appointing central bankers with inflation-averse preferences. In these contexts, an appointment process that employs detailed information on candidates' professional backgrounds would be superior to popular election by relatively uninformed voters.

5.2. Empirical Frontiers

Historically, one of the main difficulties in analyzing government officials' behavior has been the shortage of high-quality, large-scale data. Most government officials' decisions are documented in textual, qualitative forms, which pose a major challenge in quantitative analysis. Thanks to recent advances in the digitization of government documents, computational capacities, and machine learning methods and their econometric applications, the scope of the data that can be digitized and analyzed quantitatively is expanding rapidly. Athey & Imbens (2019) and Mullainathan & Spiess (2017) provide excellent overviews of machine learning methods essential to economists. Glaeser et al. (2018) also discuss many ways that data collection and measurement could be significantly improved by utilizing advances in digitization and data science. Gentzkow et al. (2019a) and Wilkerson & Casas (2017) provide excellent overviews of textual analysis techniques and their applications in economics and political science, respectively. There have also been compelling applications of large-scale textual analysis in the examination of government officials' behavior (see, e.g., Gentzkow et al. 2019b, Hansen et al. 2018). Building on recent advances, we can consider three directions for research.

5.2.1. Measurement of the quality of public service. First, one can construct novel granular measures of the quality of governance or public service provision, which were previously infeasible to construct. In the past, the measurement of the quality of government services often suffered from the low frequency and fragmentation of the data collection process, which social scientists are overcoming in recent years. We can use such innovation to investigate the effect of selection and retention rules on the quality of governance or public service provision. For example, Saiz & Simonsohn (2013) construct a granular (at the city level, as opposed to the state or national level) measure of corruption and various other phenomena that are difficult to measure. They use the prevalence of relevant documents in large-scale document databases as a proxy for the frequency of the given phenomenon.

Saiz & Simonsohn (2013) provide one example of the recent trend in estimating or predicting the frequency of phenomena using the prevalence of relevant documents (the supply side) or the frequency of relevant keyword searches (the demand side). Early applications of this type of approach were in the prediction of diseases (e.g., see Ginsberg et al. 2009). However, there have been a number of applications to economic contexts (e.g., Choi & Varian 2012; Bañbura et al. 2013; Scott & Varian 2014, 2015; Stephens-Davidowitz 2014).

Economists can also measure public service reliability or changes in the local economy with a high frequency at a granular level using texts on social media or the information on crowdsourced rating platforms. For example, Collins et al. (2013) document variations in customer sentiments toward public transportation in Chicago by analyzing texts in Twitter posts. They document a close linkage between surges in complaints about public transit on Twitter and service disruptions. Glaeser et al. (2021) use the number of ratings of companies and restaurants on Yelp to measure economic activities with a high frequency at a local level.

5.2.2. Large-scale data on government officials' characteristics and careers. Second, empirical research on the influence of selection and retention methods on the quality of government officials has been relatively limited due to the difficulties in collecting large-scale data on officials' characteristics and careers. The digitization of the government records and increasing access to administrative data by economists can enable large-scale empirical research on this question. One can amass detailed information on the selection and retention, career history, and characteristics of government officials.

For example, Lucca et al. (2014) studied the career paths of more than 35,000 banking regulators using their curriculum vitae collected from a major professional networking website. Their research focused primarily on the patterns of worker flows between the government and banks across the business cycle. One can extend their approach to data collection to different types of public offices to understand the influence of selection and retention rules on political selection and turnover. More recently, Dal Bó et al. (2017) have demonstrated how economists can use access to high-quality administrative data to answer salient questions on political selection. They compare attributes of politicians relative to the general population using rich administrative data in Sweden. An application of such an approach to selection and retention methods can provide valuable new insights.

5.2.3. Textual analysis of media coverage. Third, recent advances in textual analysis enable us to analyze media coverage with a great deal of precision. Gentzkow & Shapiro (2010) and Martin & Yurukoglu (2017) analyze media bias in newspapers and cable news, respectively. Precise measurement of political information in media can help us better understand the functioning of selection and retention rules in two ways. First, the focus (e.g., policy positions, qualifications, or character) and the direction (e.g., whether supportive or critical) of media coverage about candidates can help us infer the amount and nature of the information voters receive about candidates across different selection and retention rules. Therefore, we can gain a better understanding of the mechanisms behind the functioning of the rules. Second, as discussed in Section 4.2, the impact of the rules depends on the characteristics of the media environment. There are many dimensions of the media environment we can explore in this regard. For example, as the role of the Internet increased in the advertising market, the operation of traditional newspapers changed systematically (Seamans & Zhu 2014). Structural changes in the media market and the subsequent changes in the political coverage may influence the functioning of local elections. As another example, the media slant has been changing systematically over time. The content of political coverage by major cable news channels in the United States has been ideologically diverging, for instance (Martin & Yurukoglu 2017). Such a trend can also influence the media coverage of local politics, which may affect the functioning of selection and retention rules. Advances in the measurement of media content will help us understand these dynamics.

5.3. Concluding Remark

Although the literature on selection and retention rules has a long history, there is much room for further economic research. It is important to note two issues that pose both challenges and opportunities. First, there is unlikely to be one theory that fits all contexts. The functioning of selection and retention rules depends on various factors—e.g., the nature of officials' tasks, the role of political parties, the timing of elections, voter information, and compensation for the office. This is also the reason a variety of rules coexisted for a long time, without voters always trying to switch rules in one direction. This complexity also generates a need and an opportunity to research interactions between selection and retention rules and other characteristics of political environments. Second, the variation in selection and retention rules is hardly random or quasi-random. This poses a fundamental challenge in the evaluation of the rules. However, for the past decade, scholars studying these rules have been significantly expanding the scope of econometric methods they employ, including the regression discontinuity design and structural econometrics. Efforts to use a varied set of methods can significantly improve our evaluation of the rules. In sum, the literature on selection and retention rules will continue to be a fruitful context for economists to study the design and operation of governments and processes of policy formation.

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