Civil Service Adoption in America:
The Political Influence of City Employees

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Abstract: At the turn of the 20th century, most cities in America featured a patronage-based system of governance, but over the next few decades, patronage was replaced by civil service. Civil service restructured the relationship between elected officials and government employees, with employees benefiting from a variety of new protections. Yet in studying this change, scholars have largely ignored the role local employees themselves might have played in the transformation. We argue that city employees stood to benefit from civil service, and in places where they had agency and clout, they were important drivers of its adoption. We collected a dataset for more than 1,000 municipal governments, determining whether and when they adopted civil service and whether their employees were organized in an occupational organization. Our analysis of these new data shows the influence of city employees was an important contributor to the spread of civil service in American local government.

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The 20th century saw a major transformation of American local government, and at the heart of the change were government employees. In the early 1900s, most cities featured a patronage-based system of governance, in which elected officials had considerable control over local government employment. Over the next 100 years, patronage was replaced by civil service—a merit-based system of employment that regularized hiring, firing, and promotion of municipal employees. Civil service restructured the relationship between elected officials and government employees, with employees benefiting from a variety of new protections. Today, those local employees and their unions—including unions of teachers, police officers, and firefighters—are some of the most active groups in American politics, in local government and beyond. Thus, it is hard to imagine a development more central to American politics, and yet we lack a full understanding of its key dynamics.

Research on why and how this transition occurred is strikingly limited. A few studies have explored the politics of municipal civil service adoption, emphasizing the importance of Progressive Era municipal reformers, city demographics, political institutions, and party competition (e.g., Ruhil 2003; Ting et al. 2012), but have not considered the government employees themselves—those who were arguably the main beneficiaries of the reforms. Other research examines the effects of civil service, but again focusing on the effects on policies or political party fortunes (e.g., Folke, Hirano, and Snyder 2012), not on the conditions or organization of employees. And while West (2009) and DiSalvo (2015) point to civil service as a precondition of the shift to public-sector unionization, little empirical research investigates how this happened. The political contributors to the passage of state labor-management relations laws mid-20th century have received some attention (e.g., Saltzman 1985; Moe 2011; Hartney 2022), but the broader transformation seems to have begun much earlier with the shift to civil service

and early advocacy of government employees, including firefighters, police, transit workers, and janitors (Slater 2004). There is still much to be learned about how government employees may have contributed to the adoption of civil service.

This paper makes a start by examining patterns of municipal civil service adoption with a focus on the role of government employees. Our argument is simple: as a general matter, municipal employees sought the stability and autonomy that came with civil service, whereas elected officials preferred to retain discretion and control over the bureaucracy. In many places, because they were unprotected and subordinate to local politicians, city employees lacked agency. They were uncoordinated and politically weak, and thus elected officials had little reason to give employees the security they wanted. In other places, however, groups of employees managed to coordinate and act cohesively in politics, and when they did, one of the main changes they pushed for was civil service. In cities where employees had agency and clout, they had potential to change the political calculus of elected officials, increasing the likelihood they adopted civil service. While we do not propose this was the only pathway by which municipal civil service was attained, we argue it was an important one for many cities, and that city employees made contributions to the development of American cities that have not been fully appreciated.

To study this, we collected an original dataset determining whether and when more than 1,000 municipal governments adopted civil service. We augment these data with new data on the local presence of early organizations of firefighters, which were (and are) one of the largest

and best organized categories of municipal government employees.[1] Our analysis shows that cities with early organizations of firefighters were significantly more likely to transition to civil service during the first decades of the 20th century. Because it is difficult to isolate a particular causal pathway with these data, we take several different approaches to bolster the evidence that city employee advocacy was a contributor to the adoption of civil service: (1) controlling for city demographic characteristics deemed important in the literature, (2) analyzing variation within cities and states over time, (3) testing for a differential role of employees by city size, (4) accounting for the efforts of municipal reformers, (5) preliminary analysis of where and why early firefighters' organizations formed, and (6) presenting examples where employee groups were responsible for enactment. Together, our findings shed light on an understudied contributor to this transformation of local government: the political influence of city employees.

Background and Literature on Municipal Civil Service

Prior to civil service reform, American politics was largely a patronage system in which incumbent politicians could hire and fire employees on the basis of political calculations. Victorious political party organizations filled government positions with their supporters, who then in turn helped the party win future elections. From the perspective of government employees, the way to get a government job was to be in service to a political party or set of candidates that would win elections, and the path to job security was to work to keep those officials in office. This distorted both democratic representation and accountability (Trounstine 2008; Bryce 1888; Steffens 1902; Royko 1971).

[1] In 1940, protection service workers made up 28.2% of municipal employees (Slater 2004, ch. 1). Public school teachers were and are the largest group of local government employees, but most are employed by school districts—not cities.

The Pendleton Act of 1883 introduced civil service to parts of the federal bureaucracy, and two key pillars of that reform were recruitment of employees based on merit, through competitive examinations, and prohibition of firing or demoting employees on the basis of politics. While bureaucracy scholars have probed how this change shaped the federal bureaucracy (e.g., Carpenter 2001; Gailmard and Patty 2007; Skowronek 1982; Shefter 1983) and the events that led up to it (e.g., Van Riper 1958; Hoogenboom 1961), others have puzzled over why the shift to civil service in state and local government was slow, gradual, and piecemeal. Half a century after the Pendleton Act, only nine states had adopted state civil service, and there weren't bursts of reform in cities until the 1910s and 1930s (Ujhelyi 2014; Ting et al. 2012; Ruhil 2003). Moreover, many early municipal civil service systems were not comprehensive but rather applied only to certain city departments, most commonly the police and fire departments—which were often the largest departments in the city (as they are today).

In 1939-1940, changes in federal policy altered the environment for state and local governments. In 1939, an amendment to the Social Security Act required state and local governments to enact merit-based personnel systems for any employees administering funds related to Social Security, health, or unemployment compensation (see Ujhelyi 2014; Ruhil 2003; Ting et al. 2012). Starting in 1940, then, many subnational governments likely adopted civil service to comply with this requirement. Notably, it was rare for cities to eliminate civil service after adopting it (Tolbert and Zucker 1983; Ting et al. 2012).

Most research on state and local civil service has focused on its effects (see, e.g., Rauch 1995; Ujhelyi 2014; Folke, Hirano, and Snyder 2011; Ornaghu 2018; Kuipers and Sahn 2023). Research examining the contributors to civil service *adoption* has been more limited—more focused on states than local governments, and focused on a small set of possible factors.

Scholars have shown that the Pendleton Act spurred reforms in some places (Schiesl 1977; Thelen 1972; Miller 2009). More importantly, historians have described how civil service was a key component of the agenda pushed by Progressive Era reformers who emphasized the importance of technocratic administration of government as a way to solve problems of municipal governance and bring down political machines (Tolbert and Zucker 1983; Hoogenboom 1961; Kaplan 1937; Stewart 1929; Frant 1993). But while the National Municipal League advocated for civil service in its model *Municipal Program* (Liazos 2020), Progressives regularly failed to achieve civil service enactment at the state and local level (Berry 2009). To date, there has been no research that quantitatively measures the presence of reform organizations or their influence on civil service adoption.

Other theoretical accounts emphasize incumbent politicians' electoral incentives to adopt civil service. Focusing mainly on state governments, a model by Ting et al. (2012) highlights the importance of the competitiveness of elections for spurring politicians to adopt civil service. Ruhil (2003) emphasizes the costs and benefits of civil service versus patronage, arguing that the many changes of the late 19th and early 20th centuries (immigration, shrinking opportunities for patronage at the federal level, changes to political institutions) altered city incumbent politicians' electoral calculus, making civil service more in their interest than it had been in the past.

Quantitative empirical studies have also identified some city-level correlates of adoption. Tolbert and Zucker (1983) and Ruhil (2003) analyze civil service adoption in the early decades of the 20th century (in 167 cities of more than 50,000 residents and 252 cities of more than 30,000 residents, respectively) and find that larger cities were more likely to be early adopters of civil service. This is to be expected, scholars argue, because between 1900 and 1940 city populations grew rapidly. These larger populations generated more demands on government,

and civil service was thought to be important for generating higher quality governance and building state capacity (Lowi 1964; Finegold 1995). Tolbert and Zucker (1983) also find that early adopters tended to have a larger middle class (measured as smaller proportions of manufacturing workers and "illiterates"), and Ruhil (2003) puts emphasis on city political institutions.

Finally, these studies find state and regional patterns. Ruhil (2003) shows cities in the South were less likely to adopt civil service, although the reason remains unclear. State policies on civil service also matter. Cities in states where statutes or constitutions required it were more likely to have civil service, which, in the early years of the 20th century, was only the case in New York, Massachusetts, and Ohio (Tolbert and Zucker 1983).[2] Also, in states that had civil service requirements for *state* agencies, cities were more likely to have civil service (Ruhil 2003).

Government Employees

Strikingly absent from most of the literature on both the effects of and contributors to civil service adoption are the government employees themselves: the individuals who were directly impacted by the reforms. There is some political science literature on government employees and their organizations, but it almost exclusively examines patterns of their activity and influence since the late 20th century and with emphasis on collective bargaining and unionization (Saltzman 1985; Hartney 2022; Moe 2011; Anzia and Moe 2015; Anzia 2022; Moe 2019). Long before the start of the shift to collective bargaining in the public sector in the late 1950s, however, there was a shift to civil service. West (2009) and DiSalvo (2015) argue that

[2] The laws in New York and Massachusetts were adopted in 1883 and 1884, respectively. Ohio required civil service for police and fire in 1902, and that was extended in 1908.

the ability of government employees to organize mid-20th century was aided by the earlier adoption of civil service and the erosion of patronage politics, which gave rise to greater opportunity for employees to express and advocate for their interests independent of public employers. Political scientists have yet to analyze how government employees might have helped to shape these institutional developments in American local government in the first place.

We argue that as of the early 20th century, city employees had a strong interest in civil service, and that when they had agency, they helped influence its adoption. Compared to patronage, civil service had clear, immediate benefits for government employees. Positions covered by civil service were regularized with job qualifications, open advertisements, and, frequently, examinations. Perhaps most importantly, civil service employees could not be removed from their positions for political reasons. While civil service exams and hiring could be manipulated by enterprising politicians to ensure the hiring of their supporters, it was harder to manipulate dismissal without cause (see, e.g., Erie 1988). Civil service systems were widely viewed as removing the political yoke around public employees, offering them predictability and stability in employment. Thus, as a general matter, employees had a strong stake in civil service and stood to benefit from its adoption.

With patronage widespread (Sorauf 1960; Mayhew 1986; Erie 1988), however, city employees and others interested in civil service likely encountered powerful resistance, because these changes reduced elected officials' control over city bureaucracy and outlawed a primary means by which they built electoral support. Moreover, city employees across the country varied in whether they had agency—political capacity and coordination to advocate for institutional change. We propose this variation in local government employee agency affected the extent of

bottom-up pressure politicians faced. We expect cities where the employees managed to coordinate and act collectively in politics were more likely to see civil service enacted.

While early local government employee agency could take a number of forms, including formation of mutual benefit societies and active participation in elections, one of the most common and effective vehicles for exercising political voice—and one of the most visible and measurable—was the formation of employee unions and professional associations (see Banfield and Wilson 1965, 210-216). Early occupational organizations of government employees in the United States date back to the late 19th century, and by the early 20th century, there were several local government employee organizations, mostly organized along craft lines. The National Education Association (NEA) formed in 1870, and the American Federation of Teachers (AFT) started in 1916 (Spero 1948, 314, 319). Police officers also formed local organizations—the first chapter of the Fraternal Order of Police (FOP) organized in 1915 in Pittsburgh (Walsh 1977)—but their organization was more controversial, especially the question of whether local police organizations should be allowed to join the labor movement. Shortly after the American Federation of Labor (AFL) agreed to issue charters to police unions in 1919, the Boston police strike set back the organization of police officers for many years (Slater 2004), and as a result, police unionization proceeded in a relatively fragmented and delayed manner.

In cities, firefighters were some of the earliest organized public employees. During the 19th century, the threat of conflagration loomed in America's cities: by the late 1800s, fire had decimated dozens of the nation's largest cities, and the problems grew worse as cities densified and buildings increased in height. Yet prior to the Civil War, firefighting was an all-volunteer operation, albeit with some contributions from city coffers (Tebeau 2003). By mid-century, property owners and fire insurance companies began to push for municipal fire departments

staffed by paid firefighters. By 1900, nearly all large cities had established fire departments with paid firefighters (Bureau of the Census 1905). However, Tebeau (2003, 239) explains that at this time, "politics tied firemen to ward leaders and structured their relationships to their local communities. In return for their assistance during elections, ward officials rewarded firemen and other municipal workers with employment."

As early as the 1880s, firefighters organized mutual benefit societies and social clubs. In addition to providing death and illness benefits, they advocated for changes to local firefighting practices and personnel matters, like regular days off, higher wages, and rotation in shifts (Spero 1948, 228-244; July 16, 1918, *New York Sun*; Department of Commerce 1918). In 1873, the National Association of Fire Chiefs was established (later becoming the International Association of Fire Engineers, or IAFE), and the International Association of Fire Fighters (IAFF) was formed in 1918, organizing rank and file firefighters to promote better working conditions.[3] The IAFF considered itself part of the labor movement and identified as a union (and was chartered by the AFL), although as of 1930 it prohibited members from striking.

The historical record illustrates that the IAFF played a role in civil service adoption, revisions to civil service laws, and protection of the laws once they were in place. In 1932, Salem, Oregon, firefighters dropped leaflets across the entire city promoting the adoption of a civil service ordinance (May 18, 1932, *Statesman Journal*). In its documentation of its organizational history, the IAFF website features a cartoon, dated 1934, showing an IAFF firefighter exterminating "politics" under a tree bearing the "fruits of civil service." The caption argues, "if used freely, satisfactory results guaranteed."[4]

[3] See "IAFF History at a Glance," https://www.iaff2067.org/aboutnpf/history.htm.

[4] "IAFF History," https://history.iaff.org/ (accessed April 28, 2023).

Figure 1

The IAFF also worked to amend civil service laws and decisions that they felt undermined their members (e.g., September 24, 1921, *The Brooklyn Standard Union*).

We propose civil service was especially desirable to these nascent local employee groups because of the political and legal environment of the early 20th century. At the time, formal collective bargaining was illegal in government. When the National Labor Relations Act (NLRA) sanctioned collective bargaining for private-sector workers in 1935, public-sector employees were excluded (Walker 2020). Many local governments sought to bar their employees from joining unions, including firefighters (April 4, 1919, *Cincinnati Enquirer*; July 4, 1933, *Louisville Courier Journal*; September 6, 1919, *Sacramento Bee*; July 25, 1934,

Richmond Times Dispatch; Slater 2004, ch. 3). During this era of hostility toward government employee organizing, employee groups struggled to maintain their organizations. In the face of these collective action problems, civil service promised greater continuity and predictability in employment and longer career horizons, thereby creating more stability in the groups' potential membership and enhancing the incentives for employees to invest in the organizations' efforts.

In addition, these early employee organizations advocated for policies that benefited their members, such as higher compensation, more regular and limited work hours, paid vacation, better working conditions, and regularized processes for handling grievances (e.g., Slater 2004), and they often worked within civil service systems to push for those policies. In 1943, for example, the St. Louis IAFF took out a quarter-page advertisement in the *Globe Democrat* advocating for higher wages, and the ad implored voters to speak out against the Civil Service Commission's compensation plan (July 13, 1943, *St. Louis Globe Democrat*). In 1926, when Scranton's mayor threatened to dismiss firefighters to "make room" for his new hires, the Scranton IAFF asserted that it was "fully prepared to protect the firemen and the policemen and [would] also likely take some legal steps to prevent the mayor from venting political spleen under the guise of bringing the entire department up to civil service standards" (January 13, 1926, *Scranton Times-Tribune,* 3). Thus, during this period when collective bargaining was a far-off goal, civil service offered government employee organizations an institutional foothold with which to advance policies they favored.

In sum, long before the 1960s and the push for state labor-management relations laws in the second half of the 20th century, local public employees in many places had political agency. They were active in local and state politics and coordinated to advocate for policies that would benefit them as a group. A primary way they did this—and advanced their interests—was

forming and maintaining employee organizations and unions. In municipal governments, firefighters' organizations and unions were especially prevalent and important.

We propose employee political agency was important to the adoption of civil service. As a general matter, elected officials had strong reasons to resist civil service, because it reduced their control over the bureaucracy and upended their ability to build electoral support through the provision of government jobs. The extent of bottom-up pressure from government employees and their organizations thus stands to be an important factor shaping when and whether cities transitioned to civil service. The central hypothesis of our paper is that cities where the employees had agency—as shown by their organization—should have been more likely to adopt civil service in the years prior to the 1939-40 change in the federal policy landscape.

Data

To better understand the relationship between early municipal employee agency and civil service adoption, we assembled an original dataset from the tables of the 1934-1970 Municipal Yearbooks, which are annual volumes of city statistics and activities compiled by the International City/County Management Association (formerly the International City Managers' Association). These Yearbooks contain statistical tables with information on the status of cities' civil service provisions as well as, for select years, the existence of municipal employee organizations—our primary measure of the employees' political agency. While the information provided and number of cities vary from year to year, this is a rich source of data on personnel matters in American municipal governments in the early and mid-20th century.

We started by using tables from the 1940 to 1944 Municipal Yearbooks that identify when cities adopted civil service, back to the late 1800s. Starting in 1945, the relevant tables in the Yearbooks contain information on whether the city had civil service but not the year of

adoption; 1962 is the last year for which the Yearbooks contain civil service information for the full set of cities with population greater than 10,000. We digitized a select set of tables to put together an indicator of whether a city had civil service in each year.

The resulting dataset has 1,674 cities for which we have some information on the status of civil service in the city during this time period. For 583, we identified the date of civil service adoption directly from the 1940-1944 Yearbooks. Another 456 cities had not adopted civil service by the last year they appear in the Yearbooks' civil service tracking (usually 1962). 304 cities are shown as having civil service for all years in which data are available but for which the Yearbooks do not contain a date of adoption; these cities are excluded from our analysis because we do not know their civil service status for years before 1940. Finally, 331 cities changed to civil service between 1945 and 1963. For these, we drew on all available information in the Yearbooks and coded them as having civil service for every year following the first indication of civil service in the Yearbooks. We also test the robustness of our results to excluding cities for which we approximated the date of adoption (online appendix Table A2). Using all this information, we created a balanced panel dataset of the cities from 1883 to 1962 with the binary indicator *Civil service*. As others note, cities rarely eliminate civil service once it is adopted, so we code cities as having civil service for every year following initial adoption.

We also use information from the Yearbooks on early municipal employee organizations. It is important to note that comprehensive data on employee organizations in US cities do not exist even today; there are no datasets on whether US municipal governments have unions, let alone detailed data on the specific organizations (see Freeman and Ichniowski 1988). Thus, while the information on early employee organizations in the Yearbooks is not perfect, it is a valuable and underutilized resource, and one that sheds light on early city employee organizing.

Specifically, the 1938-1940 Yearbooks include lists of municipal employee organizations and, for each organization, the year it was established. The ICMA assembled these lists by acquiring directories of a few prominent national-level employee organizations, including the IAFF and the American Federation of State, County and Municipal Employees (AFSCME), and then listing their local chapters in each state. It is not a comprehensive list of all local employee organizations at the time, because if the ICMA did not obtain a directory from a particular national organization, or if there were local organizations unaffiliated with a national organization, they were not included. Notably, police organizations are absent from the list.[5]

For our analysis, then, we focus on the IAFF, for several reasons. First, it was the organization with the broadest reach into American municipal governments in the early 20th century. As of 1940, it had been around for decades and counted the largest number of locals—in over 400 cities (ICMA 1940 Municipal Yearbook). AFSCME, by comparison, was started later, in 1935. Second, firefighters made up a large share of city employees. Third, unlike police or even teachers, virtually every local firefighters' union is affiliated with the IAFF, which means the ICMA data are most likely a comprehensive list of local firefighters' unions at the time.

Finally, while we have data going up to the 1960s, we focus on years up to 1940 because we are interested in the relationship between local employees' organizations and local civil service—and national circumstances changed in 1940 when new federal legislation encouraged the adoption of local civil service (Folke, Hirano, and Snyder 2011; West 2009). The impact of

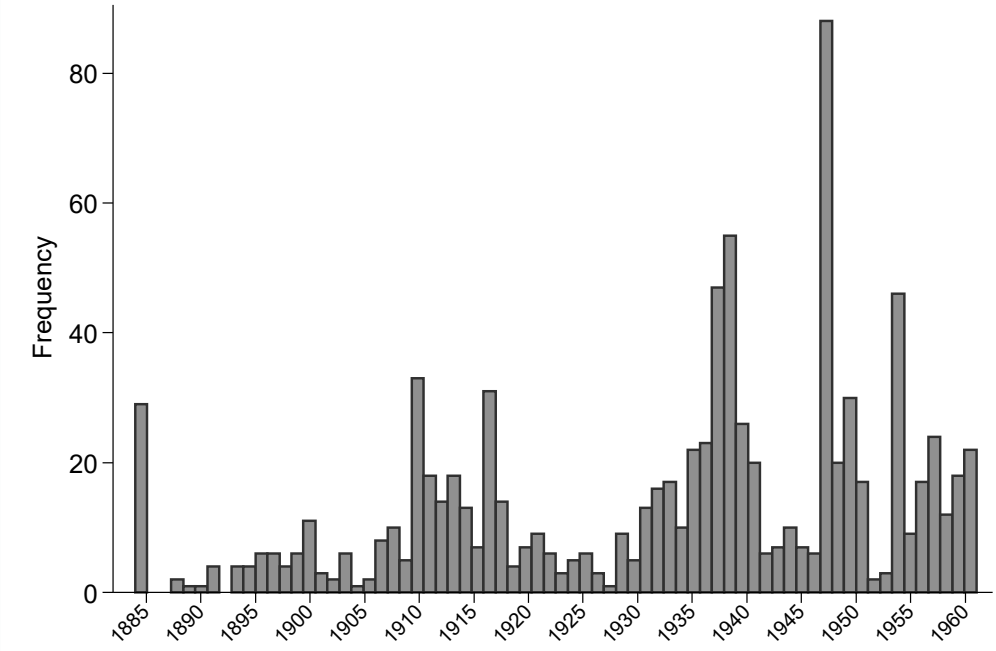
[5] Later Yearbooks also tracked employee associations and unions and included the FOP but did not provide the date of establishment of each organization.

federal legislation makes it more difficult to disentangle local motives for civil service adoption from changing incentives created by national legislation.

Analysis

We begin by displaying the number of municipal civil service adoptions by year in Figure 2. Even though our dataset includes more cities and spans a longer time period than the data analyzed by Ruhil (2003), we see patterns similar to what he shows: (1) an initial phase of municipal civil service adoption immediately following the Pendleton Act of 1883, the vast majority of which were in New York and Massachusetts, (2) a second surge of adoptions between 1910 and 1919, after which they slowed; (3) a third surge of adoptions between the late 1920s and 1935, and then (4) a massive increase between 1935 and 1940. In addition, many municipalities did not adopt civil service until after 1945: there was a large increase in adoptions after World War II and a continued trend of new adoptions during the 1950s. Moreover, as described earlier, hundreds of cities had not adopted civil service by 1962.

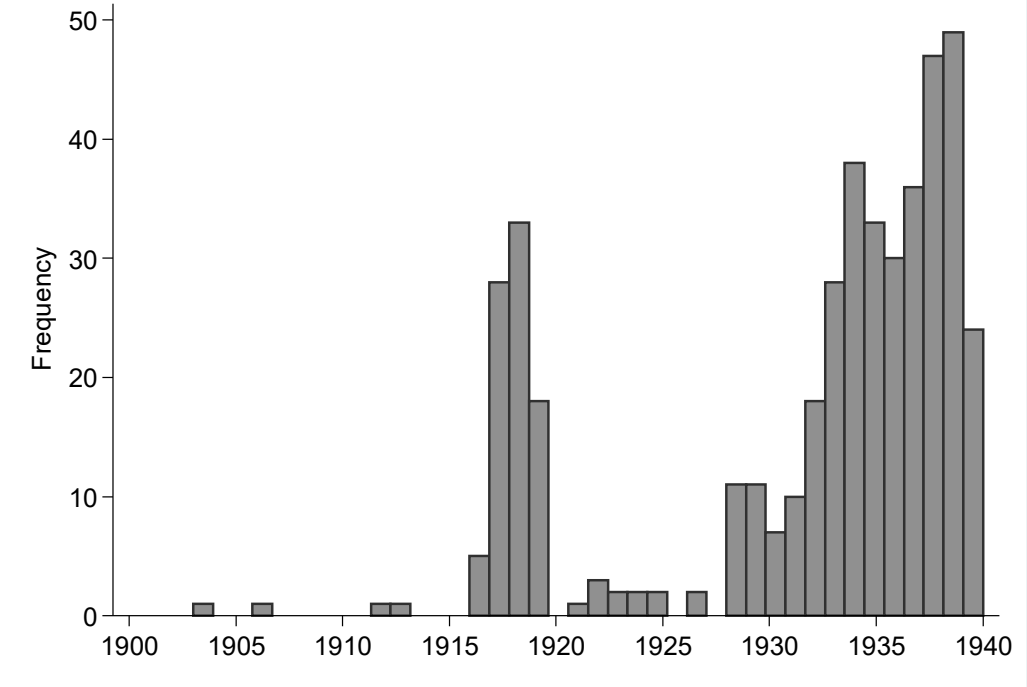
Figure 2: Year of Municipal Civil Service Adoption



In Figure 3, we show the years in which cities first established local IAFF chapters by 1940 (for those that had). It shows that a number of cities first established an IAFF local just before 1920. As with civil service adoption, there was a slowdown in IAFF local creation in the early 1920s, followed by a second surge of new local IAFF organizations starting in the late 1920s, with adoptions per year continuing to mount through 1940. That our dataset records more than 400 IAFF chapters by 1940 is notable, because it was more than double the number of chapters in the next largest local employee organization: AFSCME.

Two points about Figures 2 and 3 are worth underscoring. First, patterns evident in Figure 3 align with how others have described the advances of the early labor movement. As Slater (2004) documents, 1916 to 1919 was especially active for employee organizations in both the public and private sectors. There were many strikes in these years, with 3,600 strikes involving 4 million workers throughout the United States in 1919 alone. Moreover, between 1915 and 1921, the share of public-sector employees in unions rose from 4.8% to 7.2%, even as total government employment grew from nearly 1.9 million to nearly 2.4 million. Then, after the 1919 Boston police strike, the 1920s saw a weakened labor movement, with many cities and states prohibiting public-sector workers from joining unions. Both these patterns are reflected in our data in Figure 3 on IAFF local chapter establishments. The second pattern of note is that municipal civil service adoption slowed during the 1920s just as labor organization and activity slowed as well. This is suggestive that employee organizations were a contributor to civil service.

Figure 3: Year of Municipal IAFF Establishment



To examine the relationship between employee organizations and civil service, we begin by analyzing whether cities that had early IAFF locals were more likely to have adopted civil service by 1940. For that analysis, we need to account for city-level correlates of municipal civil service adoption that have been identified in the literature, such as city size, population diversity, and state-level civil service requirements. To do this, we encoded data from the decennial Census of Population and Housing for 1930.

We have data on the civil service status of 1,371 cities as of 1940, and at that time, 38% had civil service. When we combine these cities with four city-level Census variables—population and the shares of the population that were illiterate, foreign born, and Black—our dataset is reduced to 1,211 cities. In Table 1, we present the averages of these variables, separately for those with and without civil service by 1940. As others have found, cities that adopted civil service during this early period were typically larger and had higher shares of

foreign born residents than those that had not yet adopted it. In addition, on average, the early civil service adopters had smaller shares of Black residents.

We also examine the share of cities that had civil service by 1940 in each of the four major regions of the United States and find considerable variation across regions. Civil service was most prevalent in the Northeast, where 54% of the cities had civil service by 1940. In that same year, 47% of cities in the Midwest had civil service, and 42% in the West. The South stands out for its low rate: only 21% of its municipalities had civil service by 1940.

Moreover, of the cities that had adopted civil service by 1940, 51% had an IAFF. That percentage is only 19% for the cities that did not have civil service. When we consider whether a city had any known municipal employee organization by 1940 (as documented in the Yearbooks)—whether it was an IAFF chapter or otherwise—the numbers change little: 21% of the cities without civil service had a documented employee organization by 1940, compared to 55% of the cities with civil service.

Table 1: Descriptive Statistics, by Civil Service Status

	No Civil Service by 1940	Had Civil Service by 1940
% with IAFF Local	19%	51%
% with Any Employee Organization	21%	55%
Average Population (1930)	20,624	87,814
% Foreign Born (1930)	9%	13%
% Illiterate (1930)	4%	3%
% Black (1930)	10%	5%
West	58%	42%
Midwest	53%	47%
Northeast	46%	54%
South	79%	21%

We next use OLS to regress the civil service indicator (for each city as of 1940) on the indicator for IAFF locals, controlling for the city demographic variables shown in Table 1 and

clustering standard errors by state.[6] Column 1 of Table 2 presents those estimates. We include indicators for three of the four Census regions to account for regional patterns in civil service adoption, and we also include an indicator for whether the city's state had a state-level civil service law that covered state workers by 1940 (coded according to Ting et al. (2012)). The estimates show that the cities that had IAFF locals by 1940 were more likely to have civil service by that time as well, even accounting for these other city characteristics. On average, cities with IAFF locals were about 25 percentage points more likely to have adopted civil service during this early period. In column 2, we replace the IAFF indicator with an indicator for whether there was *any* municipal employee organization in the city by 1940, and our estimates are substantively the same.

In column 3, we combine the indicator of IAFF locals with another measure of local firefighters' agency: whether the city had a firefighters' benevolent association as of 1917, which we created using a list of such associations provided in a 1918 Department of Commerce report called "Statistics of Fire Departments of Cities" (p. 22). The main independent variable in column 3 equals one if a city either had an IAFF local by 1940 or is listed as having had a firefighters' benevolent association in 1917; it equals zero otherwise. Again, the estimated coefficient is positive: on average, cities with firefighters' organizations were about 25 percentage points more likely to have civil service by 1940.

[6] All results are substantively the same when we use logistic regression; see online appendix Table A1.

Table 2: Municipal Civil Service by 1940

	(1)	(2)	(3)	(4)
IAFF	0.251***			0.140***
	(0.058)			(0.045)
Any municipal employee organization		0.236***		
		(0.064)		
IAFF or firefighter benevolent association			0.248***	
			(0.054)	
Population (logged)	0.149***	0.146***	0.136***	0.152***
	(0.019)	(0.021)	(0.019)	(0.017)
% Foreign born	-0.077	-0.063	-0.11	-0.364**
	(0.351)	(0.360)	(0.346)	(0.179)
% Illiterate	-0.955***	-0.920***	-1.038***	-0.611**
	(0.307)	(0.296)	(0.270)	(0.247)
% Black	-0.377*	-0.377*	-0.362*	-0.238*
	(0.215)	(0.217)	(0.211)	(0.123)
State civil service law	0.182**	0.184**	0.174**	
	(0.084)	(0.085)	(0.084)	
R-squared	0.31	0.31	0.31	0.56
Observations	1,211	1,211	1,211	1,211

Notes: OLS estimates with standard errors clustered by state in parentheses. Models 1-3 include regional fixed effects; model 4 includes state fixed effects. *p<0.10, **p<0.05, ***p<0.01 (two-tailed)

In column 4, we return to the model from column 1 and instead include state fixed effects. This accounts for state-level characteristics associated with municipal civil service and local IAFF organization, such as state personnel laws. In addition, while many cities adopted civil service locally, state legislatures played an especially large role in governing municipalities during this period, and some cities acquired civil service as a result of state legislation. While the Yearbooks do not include information about *how* civil service was adopted for each of these cities, with the inclusion of state fixed effects, we can evaluate whether *within* states, cities with IAFF locals were more likely to get civil service. We find that they were. The coefficient estimate on IAFF is reduced—to about 14 percentage points—but still reveals a meaningful positive relationship. Thus, there is an association between early organization of employees and

civil service adoption, as we expect. Moreover, we find that larger cities were more likely to adopt civil service early, as were cities in states that had civil service provisions for state government. Cities with larger Black populations were less likely to adopt civil service, which fits with reports that in some cities, whites opposed civil service adoption because Blacks would be able to apply for jobs (Liazos 2020, 105).

We next take advantage of the time series nature of the data on civil service adoption and IAFF presence, regressing the civil service indicator for each city-year on the presence or absence of an IAFF local in that city-year. We limit the analysis to years from 1900 to 1940 because IAFF organization did not begin until the 20th century.[7] Although Census data are available for many of our cities, there is a great deal of missingness in these Census variables over time. The regression therefore excludes the demographic controls and instead includes fixed effects for cities and years, which account for characteristics of cities that were constant over time as well as well as national yearly trends likely to affect all cities, such as the Great Depression. While the estimates of these models cannot be interpreted as the causal effect of IAFF local establishment on civil service adoption, as we discuss below,[8] they allow for further assessment of whether employee organizations were involved in the push for civil service.

[7] In the online appendix, we use different time windows (A5) and evaluate whether the association varies by decade (A7).

[8] In the online appendix, we discuss the parallel trends assumption and newer estimators for empirical applications with staggered treatment adoption and heterogeneous effects (see review by de Chaisemartin and D'Haultfoeuille 2022). While the two-way fixed effect model allows us to account for time-invariant city characteristics and annual trends, causality remains elusive, and

The results in column 1 of Table 3 again suggest that employee organizations were associated with civil service adoption. Partialling out the effects of secular time trends and time-constant city characteristics associated with both IAFF organization and civil service, we find that on average, cities with organized firefighters were 21 percentage points more likely to adopt civil service.

Table 3: Employee Organization and Municipal Civil Service, 1900-1940

	(1)	(2)	(3)	(4)	(5)
IAFF	0.213***	0.206***	0.293***	0.198***	0.193***
	(0.019)	(0.020)	(0.019)	(0.020)	(0.020)
AFSCME		0.068**			0.061**
		(0.029)			(0.029)
Population (logged)			0.115***	-0.023*	-0.023*
			(0.010)	(0.012)	(0.012)
R-squared (within)	0.190	0.190	0.139	0.205	0.206
Observations	56,130	56,130	49,101	49,101	49,101

Notes: Standard errors clustered by city in parentheses. Models 1-2 and 4-5 include city and year fixed effects. Model 3 includes only city fixed effects. *p<0.10, **p<0.05, ***p<0.01 (two-tailed)

In column 2, we add an indicator for whether the cities had an AFSCME local in a given year. AFSCME began to organize close to two decades later than IAFF, so we do not necessarily expect the presence of an AFSCME local to be as strongly related to the adoption of civil service during this period, but this model serves as a test of whether it was really government employee agency that made a difference—as opposed to something else about cities where firefighters organized. The results show both types of local employee organizations are significantly associated with a greater likelihood of civil service adoption: a 21-point increase for IAFF, and a 7-point increase for AFSCME.

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our results should be viewed as evidence that employee organization and civil service adoption were associated.

Next, we add total population (logged) to our model, which we assembled from decennial records from 1890 to 1940 using Census of Population state reports and interpolated within cities for the between-census years.[9] Cities were generally increasing in population during this period, and one possibility is that the estimated coefficients on employee organization in columns 1 and 2 could reflect a pattern of faster-growing cities being more likely to adopt civil service *and* establish employee organizations. In column 3, we add logged city population to the model from column 1 but exclude year fixed effects. We find greater population was indeed associated with greater likelihood of civil service adoption, and also the coefficient estimate on IAFF remains positive and statistically significant. In column 4, we add year fixed effects to the model and find cities were about 20 percentage points more likely to adopt civil service when they had IAFF locals. Finally, in column 5, we add the indicator for an AFSCME local, and we find both IAFF and AFSCME locals are associated with a significantly greater likelihood of civil service adoption. Thus, even accounting for secular time trends, time-constant features of cities, and city-specific population over time, cities with early organizations of government employees were more likely to adopt civil service.

Causal Pathway: Additional Evidence in Favor of City Employee Agency

Our analysis so far demonstrates a powerful link between employee agency and civil service adoption. There remains some question, however, about whether employee organizations led to civil service or civil service in some cases could have made it easier for government

[9] We hand-entered data for incorporated places from the following: Table 2, Volume 2, 13th Population Census, Table 2, Volume 3, 13th Population Census, Table 5, Volume 1, 15th Population Census, and Table 5, Volume 1, 16th Population Census. All volumes are available for download at: https://www2.census.gov/library/publications/decennial/

employees to organize. As the policy feedback literature emphasizes, the political activity of interest groups can lead to policies favorable to those groups, but also policies can create incentives for interest groups to form, grow, and engage in politics (Pierson 1993; Hacker and Pierson 2014). With our quantitative data, the sequence is somewhat difficult to parse out, and the reality is that both processes were probably in play. To offer additional evidence in support of our proposed time ordering (that is, IAFF chapters were commonly established in advance of the adoption of civil service), we replicate the model in column 1 of Table 3 with one-, two-, and five-year lags of the IAFF variable. The results, shown in appendix Table A6, show a strong association between IAFF establishment and civil service adoption in subsequent years. This further suggests that municipal employees were actively recreating the terms of their employment during this period in a way that scholars have not previously recognized.

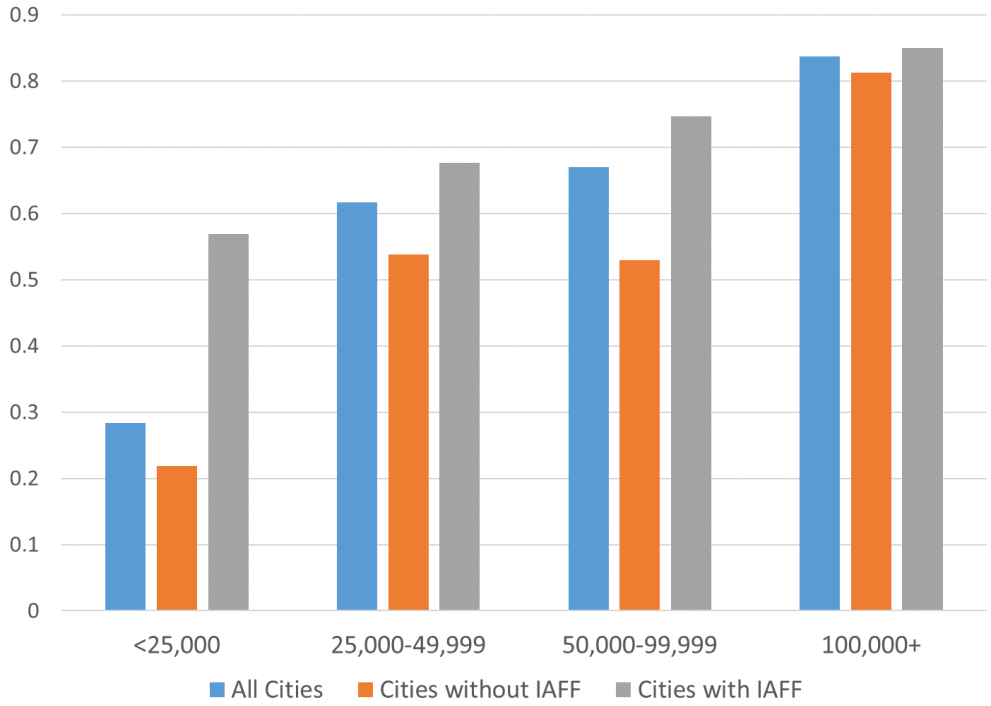
Another potential concern with the results above is that perhaps there may have been other time-varying characteristics of cities associated with local firefighters formally organizing an IAFF chapter *and* cities adopting civil service. We do not assert that employee agency was the *only* contributor to civil service adoption, or that it was the main reason for civil service reform in every state and city. We also cannot feasibly account for all potentially relevant characteristics of over a thousand cities a century ago. To move closer to an understanding of the role employees played, however, in this section, we carry out additional analyses that consider other factors that may have also contributed to the spread of civil service.

City size

We first evaluate the contributions of two alternative pathways to civil service emphasized in the literature: city size and Progressive Era municipal reform efforts. Beginning with city size, the existing literature suggests that civil service was adopted to fulfill a functional

need (e.g., Tolbert and Zucker 1983).[10] In large, urban communities where the demands of service provision grew exponentially in the early 20th century, it could be that elected politicians had incentives to build state capacity and professionalized their municipal workforces to handle these new demands, regardless of any pressure from employees, and irrespective of what the employees wanted (Lowi 1964; Finegold 1995). In our earlier analysis, we accounted for logged city population in our models, and in additional analysis shown in the online appendix, we estimate the Table 2 models semiparametrically, allowing logged population to enter nonlinearly, and we still estimate a large, positive coefficient on IAFF. Even so, these aggregate results could mask a relationship that varies by city size. If existing scholarship is correct, employee agency could have mattered more for smaller to mid-sized cities than for the largest cities.

Figure 4: Proportion of Cities with Civil Service by 1940, by Population Size and IAFF



[10] Similarly, Monkkonen (1981, ch. 1) proposes that the adoption of uniformed police forces started in the largest cities.

In Figure 4, we show the proportion of cities in each of four population bins with civil service (blue bars). We also show this proportion separately for cities with and without IAFF locals in each population category. The orange bars show the proportion of cities *without* IAFF locals that had civil service, and the grey bars show the proportion of cities *with* IAFF locals that had civil service. The grey bar is higher than the orange bar in all cases, showing that for all population categories, a larger share of cities with IAFF locals had civil service than cities without IAFF. However, there is also some indication that employee organization mattered less for the largest set of cities than for small and mid-size cities: the gap between the orange and grey bars is larger for the first three size categories than for the largest cities. Moreover, in the online appendix, we re-estimate the model from column 1 of Table 2, except that we interact the IAFF indicator with logged city population (centered around its mean). We still find that larger cities and cities with an IAFF local were more likely to adopt civil service, but the coefficient on the interaction term is negative. This suggests IAFF was less important to the adoption of civil service in large cities like Seattle and more important to smaller and mid-sized cities, such as Aberdeen and Bellingham, Washington. Understanding institutional development in these smaller to mid-sized cities is important, moreover, because while city population growth was rapid proportionally speaking, many turn-of-the-century cities remained quite small. In 1940, the Census counted 3,646 urban places (cities with populations greater than 2,500 people), which were home to approximately 57% of the US population, but nearly 70% of those places had fewer than 10,000 residents (Bureau of the Census 1941).[11]

[11] Some of these small cities were in close proximity to large city centers like Chicago and Detroit, but many were not what would be deemed "suburbs" today (residential communities within metropolitan areas reliant on a central city for employment and services). See the online

Patronage, Municipal Reform and Political Machines

Another account of civil service adoption in the literature emphasizes the power of Progressive Era municipal reformers. As we have explained, during the first decades of the 20th century, municipal employees were largely hired and fired through patronage systems, and in about 30% of American cities, these patronage systems formed the foundation for strong political organizations that dominated politics for a decade or more—commonly known as political machines. Even where stable political machines did not dominate local government, the use of patronage was widespread and generated a high degree of turnover among municipal employees. Municipal reformers opposed the "spoils system" because it was believed to ensure the victory of machine politicians and because, with it, "efficient administration is impossible" (*Boston Evening Transcript* 1897, 8). Civil service was listed among reform goals, alongside home rule charters, city manager structures, nonpartisan elections, the abolition of district-based representation, and other institutional changes intended to address governance challenges (Stewart 2022). Municipal leagues (local reform organizations) proposed that "if our large municipalities are to be no longer cesspools of corruption, if our municipal governments are to be made honest and businesslike, if our police forces are to be kept clear of thugs and thieves, the appointments to places in the municipal service must be withdrawn from the influence of party bosses and ward heelers, and must be strictly governed by the merit system" (*New York Times* December 13, 1894, 16).

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appendix for a map of the cities in our dataset. The suburbanization of the US population (and the incorporation of many suburbs) did not occur until after World War II.

Further, there are cases in which reformers clearly drove the push for civil service. In Iowa, for instance, Des Moines city leaders vigorously campaigned for a state-level law permitting cities to adopt charters that included nonpartisan elections, direct democracy, and civil service (Shambaugh 1911). The Des Moines Plan was implemented by the Iowa legislature in 1907, and then, after a failed attempt, adopted in Des Moines in 1908 (*Des Moines Daily Tribune*, June 20, 1907; *Vilas County News,* November 25, 1908). Our dataset shows many other Iowa cities like Ames, Boone, Cedar Rapids, and Sioux City adopted civil service before their IAFF chapters were established.

Clearly, then, municipal reformers supported civil service laws and hoped to weaken political machines through their implementation. Less well understood is the extent to which their efforts contributed to civil service adoption in US municipal governments, and there are reasons to question whether the adoption of these laws can be attributed to the presence of reform organizations: For one, civil service became a broadly popular reform.[12] Additionally, there is evidence that cities with council manager governments (favored by reformers) are actually less likely to have civil service (Frant 1993). While we assert that city employees contributed to civil service adoption in many places, we do not claim that municipal reformers were uninvolved. Still, one might be concerned that the relationship we have found could be mainly due to the efforts of reformers.

As a way of accounting for the presence of reform or machine organizations, we gathered data from a table in the 1940 ICMA yearbook that codes cities as having a city manager or

[12] In 1936, George Gallup asked approximately 100,000 Americans whether government positions should be allocated through patronage or civil service. Approximately 88% of respondents chose the latter (*Nashville Banner*, March 29, 1936).

commission style government, specifies the share of the city council elected at-large, and notes whether municipal elections were nonpartisan. In appendix Table A10, we show that adding these variables to our base model does not change our conclusions. Furthermore, these variables are not significant predictors of cities getting civil service. We also look at places where reformers had more difficulty achieving their goals: cities where machine organizations dominated. We draw on data from Trounstine (2008), which include codes for the presence of political machines for 190 cities in our dataset. As shown in appendix Table A10, adding an indicator for a dominant machine negatively predicts the adoption of civil service, but the coefficient on IAFF is strong and positive.

Private-Sector Labor Organizing

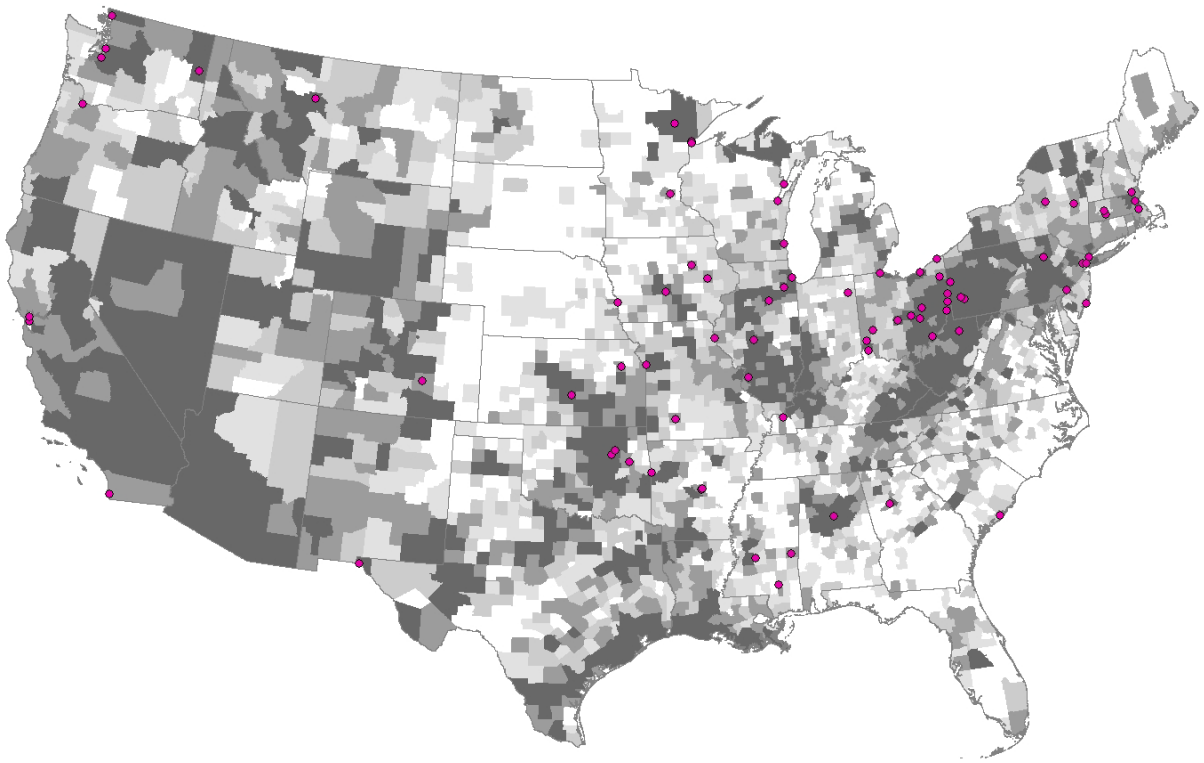
Another approach to evaluating the possibility of omitted variable bias (and reverse causality) involves explaining variation in city employee agency. Our measurement and description of the presence of these early employee organizations is itself a significant contribution, and opens up a host of new research questions, including why city employees had agency in some places and not others, and what other policies and institutions they may have helped to shape. We cannot provide comprehensive answers to all such questions in this paper, but here we provide an exploratory analysis of the early years of firefighters' unions in a preliminary effort to understand the variation in our main independent variable.

First, we evaluate whether the presence of early IAFF locals varies with city size, demographic characteristics, or region—the independent variables included in our earlier models. The results in the online appendix show that larger cities were more likely to have an IAFF local by 1940 than smaller cities, and that IAFF locals were most common in the Midwest and least prevalent in the Northeast.

We also propose and consider a second possibility: that other labor unions, especially those of workers in the private sector, helped to spur the formation of these early firefighters' unions in US cities. Most accounts of the labor movement in the United States focus on private-sector labor (for discussion, see McCartin (2006)), and the studies that do discuss the history of public-sector unions emphasize their rise in the second half of the 20th century (e.g., Saltzman 1985). Our data, however, show that union locals formed in many cities early in the 20th century. Moreover, even though they were government employees, early firefighters' locals were chartered and supported by the AFL. In addition, as we show in the online appendix, the surges and slowdowns in IAFF establishments shown in Figure 3 coincided with surges and declines in work stoppages in the United States, and the latter were almost all strikes by private-sector unions. Thus, even though the passage of the NLRA in 1935 gave private- and public-sector unions different legal status and rights, there are signs that the early development and organization of labor unions in the two sectors may have been interconnected.

As a preliminary exploration of this, we draw on the work of Holmes (2006), who presents evidence that unionism in large mining and steel establishments in the mid-20th century spilled over to other industries in the same geographic area, such as healthcare and grocery stores. We extend this logic and consider whether unions in mines and steel mills also helped to inspire agency and organization of city employees such as firefighters. It is reasonable to think that firefighters, miners, and steelworkers had overlapping social networks in some of these cities, and faced similarly dangerous occupational conditions that might be ameliorated with organization. One possibility, then, is that some firefighters organized unions thanks to their proximity to and solidarity with unionized mining and steelworkers.

Figure 5: IAFF establishment by 1920 and county-level mining employment



We begin by considering the nine cities that had firefighters' locals by 1916 (all of which affiliated with the IAFF when it was formed in 1918). Every one of those cities was close to significant mining or steel production at the time, including not only large cities like Pittsburgh and Chicago but also Pueblo, Colorado; Great Falls, Montana; and Wheeling, West Virginia. In Figure 5, we explore this visually by mapping county-level data on mining employment from the 1940 Census. We shade counties according to the log of the number of mining workers in 1940, with darker shades indicating counties with more mining workers. Cities that had established an IAFF local by 1920 are denoted with points on the map. The map makes clear that many of the earliest IAFF locals were in or close to areas with greater mining employment.

Next, in Table 4, we regress the indicator for whether a city had an IAFF local by 1920 on logged mining employment (using the 1940 county-level data) and logged city population in

1920. In column 1, the estimated coefficient on logged mining presence is positive and statistically significant. In column 2, we add regional fixed effects, and in column 3, state fixed effects. Across these three models, we find a positive relationship between mining in the county and IAFF formation by 1920. However, after the 1920s, the spread of IAFF appears to have had less to do with mining employment. In column 4, we replace the dependent variable denoting IAFF formation by 1920 with one denoting formation by 1940 (and include logged population from 1940), and the coefficient is substantially smaller.

Table 4: Mining employment and early IAFF organization

	IAFF by 1920			IAFF by 1940
	(1)	(2)	(3)	(4)
Mining workers (logged)	0.007*	0.01***	0.009*	0.004
	(0.004)	(0.003)	(0.005)	(0.010)
Population (logged)	0.06***	0.065***	0.065***	0.186***
	(0.009)	(0.009)	(0.009)	(0.015)
Fixed effects	None	Region	State	Region
R-squared	0.12	0.14	0.18	0.3
Observations	1,418	1,418	1,418	1,483

Notes: Standard errors clustered by state in parentheses. *p<0.1, **p<0.05, ***p<0.01 (two-tailed)

There is much more research to be done on this question, and our analysis here is admittedly preliminary. Even so, the results suggest firefighters may have been influenced by private-sector unions in mining and steel establishments, and that this may partially explain the geographic pattern of early firefighter unionization in the United States. To the extent private-sector union strength helps to explain variation in our main independent variable—the presence of IAFF locals in cities—it is an explanatory factor that would almost certainly have a weak correlation with civil service adoption otherwise. One would not expect miners' and steelworkers' unions to have much (or any) stake in municipal civil service, suggesting that

IAFF organizations developed first, and then pushed for the adoption of civil service, in some set of cities.

Examples of city employee organizations influencing civil service adoption

Perhaps the most direct evidence in support of the proposed mechanism comes from cases in which organized employees advocated for civil service and claimed victory when it was adopted. The link between employee organizations and civil service is apparent at all levels of government, and for many different kinds of government employees. In 1936, the AFL launched AFSCME—the first national union of state and local public-sector workers—and a key pillar of AFSCME's agenda was expanding and strengthening civil service. AFSCME's constitution declared as a primary goal "the extension of the merit system to all non-policy determining positions of all governmental jurisdictions" (see Kramer 1962, 27).

At the federal level, the AFL chartered the National Federation of Federal Employees (NFFE) in 1917, and the NFFE went on to devote considerable resources to enforcing and bolstering the federal service system and warding off a return of the spoils system (Johnson 1940; Johnson and Libecap 1994). The Building Service Employees International Union (BSEIU, later renamed SEIU) used a variety of political strategies in its successful attempts to get its members—many of them janitors in public schools—covered by local civil service laws in the late 1920s and 1930s (Slater 2004).

In Wyoming, the four cities in our dataset all had IAFF locals by 1930, and after the Wyoming state legislature passed its civil service law for cities in 1933, the IAFF local from Casper, Wyoming, claimed "our civil service bill took the hurdles against some pretty strong opposition…there may be faults in organization, but failure to accomplish beneficial results is not one of them" (*Casper Tribune-Herald*, May 7, 1935, 5). In Washington State, many cities,

including the largest, adopted civil service locally, but eventually, in 1935, the state legislature passed a law requiring municipal civil service for firefighters. (The state passed a separate law covering police officers in 1937.) The IAFF notes that that state law in Washington had been patterned after the IAFF's own Model Civil Service Bill.[13]

While our quantitative dataset does not cover police organizations before 1940, police organizations were also involved. A speech made by a former FOP Grand President in 1939 indicated that the FOP had engaged in the fight for civil service, saying that "We spent a lot of money to do it…" and that now they had "job security." He also highlighted how valuable the shift from the spoils system to civil service had been for police officers. In the past, he said, "a policeman's job depended on the corner saloon keeper…[and] when the Mayor took office half the police force went out" (Walsh 1977, 115). According to Reading, Pennsylvania's FOP Lodge President, this was counterproductive for the force and for taxpayers since it took at least "three years to make an officer a good officer" only for that officer to be fired a few months later for "political reasons" (*Reading News Times*, August 16, 1921, 5). In West Virginia, in 1937, the state passed a law requiring civil service for police departments in cities with more than 5,000 in population, and the head of the state's FOP was credited as a major force behind the new law:

> "Successful enactment of this measure, after two years of work towards the objective, is in a large measure due to the effort of a local man… Henry B. Squires, assistant chief of police here and president of both state and national orders of the Fraternal Order of Police…In his capacity of state F. O. P. president, he has led this latest drive for civil service regulations." (*Beckley Post-Herald*, March 6, 1937, 4).

Thus, there are clear examples of cities and states where municipal employee organizations actively pushed for civil service—and were credited with success when it was adopted. In fact, contemporary economist John Commons called municipal employee

[13] See "IAFF History," https://history.iaff.org/ (accessed April 28, 2023).

organizations “the most important political contribution that has been made to civil service reform in a democratic government” (Commons 1913, 111).

Discussion

Over the course of the 20th century, American government underwent a fundamental transformation: from a spoils system in which government employees were subordinate to political party leaders to one in which employee associations and unions are not only independent from employers but also highly influential in American politics, especially in state and local governments. Yet despite the importance of this transformation to the organization and operation of modern American government, political scientists have yet to thoroughly investigate how and why it occurred. This paper takes an important step in that direction by examining the politics of municipal civil service adoption in the first half of the 20th century. While some existing research has focused on the causes and consequences of civil service, it has mostly left out the government employees. We draw on both quantitative and qualitative evidence to show that government employees in many American cities advocated for and secured the adoption of the municipal civil service laws that changed the structures governing their employment. Cities that had organizations of firefighters—one of the largest groups of municipal employees—were significantly more likely to adopt civil service early in the 20th century.

Our qualitative data show that firefighters and other public employees were oftentimes organized quite early and actively pushed for civil service—and that they had success. Moreover, the quantitative dataset we have collected and used in this analysis is a major advance over what was previously available—and sheds light on patterns that have barely been studied. Our indicator of civil service covers a much larger number and greater diversity of cities than in previous research. Even more important are our new indicators of early city employee

organizations, which make possible this first-ever quantitative analysis of the relationship between public employee agency and civil service adoption.

These findings open up a host of questions that deserve greater attention in future research. First, scholars should systematically investigate the extent to which other groups of municipal employees—most notably, police officers—were also engaged in the push for civil service. While the ICMA Yearbooks do not track early organizations of police officers, there were many local FOP lodges during the 1920s and 1930s, and early FOP conferences placed heavy emphasis on securing civil service laws in local communities. Studying the role of early police organizations is difficult, both because of the lack of data and because many police unions are not affiliated with the FOP. Additionally, it may well be that police officers were not as organized and influential as firefighters during this period (Walsh 1977). Even so, we consider the role of police officers in advocating for civil service an important area for future research.

Second, and more generally, our research shows how widespread public employee organizing and activism were during the first half of the 20th century. Our focus here has been on how they influenced the adoption of civil service, but these early employee groups also advocated for other policies desired by their members, including wage and salary increases, pensions, and shorter and more predictable work hours. The extent of early public employee organizing has barely been studied by political scientists even though it stands to have had major impacts on the development of modern American government. In the future, more research should focus on when, why, and how government employees managed to organize during this period, the role of civil service in aiding that organization, whether and when employees influenced local policies and political institutions, and how policies diffused. The ICMA data we have gathered could serve as a foundation for future work.

There is also a need to better understand the role these government employee organizations played in the passage of state public-sector collective bargaining laws during the 1960s, 1970s, and 1980s—another critical juncture in this broad transformation of government. While there is some existing research that examines this (e.g., Saltzman 1985; Hartney 2022), it primarily focuses on teachers and the development of teachers' unions. Our data show that some organizations of local government employees, such as IAFF and AFSCME, were well organized (and considered themselves unions) long before the NEA shifted its position in favor of unionization and collective bargaining. Slater (2004) documents that some of these early unions were instrumental in securing the passage of the nation's first state public-sector collective bargaining law in Wisconsin in 1959. Moreover, as early as the 1940s, employee organizations in many cities managed to secure better wages and working conditions through informal negotiations and verbal agreements with their government employers (Slater 2004). That government employers sometimes made and upheld verbal agreements with them even when collective bargaining was still illegal suggests that government employee organizations had considerable political clout in many cities well before the 1960s.

As it stands, though, the key takeaway from our study is that early in this transformation, civil service provisions were extremely important to municipal employees, and an understanding of the shift to civil service is incomplete without considering their role. Going forward, there are several promising directions for future research. Scholars should further examine the role of these early interest groups in shaping the terrain of American politics and policymaking. And especially critical is more research on the policy and institutional contributors to the transition of the United States from a patronage-based system to one with an independent, influential bureaucracy—including in the nation's tens of thousands of local governments.

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Online Appendix for
"Civil Service Adoption in America: The Political Influence of City Employees"

This appendix presents supplemental description of the dataset and empirical results that are described but not shown in the paper.

Supplemental data description

As we describe in the paper, we digitized select tables from the yearbooks from 1934 to 1970. The Yearbooks are large compilations, and each Yearbook includes data tables covering a variety of different features of cities. For this project, we digitized the tables that (1) provide personnel management data, including information on cities' civil service provisions, (2) provide information on employee organizations, and (3) cover large numbers of cities, especially those that cover cities with 10,000 or more in population at the time of the data collection.

For our coding of the civil service variable for each city, we relied heavily on the personnel data tables from the 1940-1944 Yearbooks, because these were the earliest Yearbooks that included information about the year each city adopted civil service, back to the late 1800s, for cities with more than 10,000 residents. We also digitized tables from the pre-1940 Yearbooks because they include some information on whether cities had a civil service commission, or what kind of personnel agency cities had, but we opted not to include this in our coding because this is different information from what was tracked in later years. The relevant Yearbook tables from 1945 to 1962 no longer provide the date each city adopted civil service, but they do continue to report indicators of whether each city had civil service in that year, consistent with the information provided in the 1940-1944 tables. We therefore also used these 1945-1962 data tables to track whether cities had civil service in each year and to identify when cities switched to civil service, if they did so during that period. 1962 is the last year the Yearbooks contain civil service information for all cities with populations over 10,000.

In total, using the Yearbook personnel data tables from 1940 to 1962, we are able to code the civil service status of 1,674 cities for at least some years. For 583 of the cities, we were able to identify the date of civil service adoption directly from the 1940-1944 Yearbooks. According to the Yearbooks, 334 of the cities had not adopted civil service by 1962 (although 9 of those are shown to have adopted civil service in a year after 1962), and another 122 cities had not adopted civil service by the last year that the city appears in the Yearbooks. (For example, Shelby, NC, and Jamestown, ND, do not appear in the personnel data tables of the 1962 Yearbook, but they were included in those tables in earlier Yearbooks and—for those years—were only shown as not having adopted civil service.) There are also 304 cities listed as having civil service for all years in which data are available but for which the Yearbooks do not contain a date of adoption; cities in this group are excluded from our analysis because we do not know the timing of their adoption or whether they had civil service in any years before 1940. (The exception is Birmingham, AL. The Yearbooks indicate it had civil service as of 1940 but do not provide the year of adoption.)

Finally, there are 331 cities for which the Yearbooks indicate that the city's civil service status changed in years before 1963 but for which the Yearbooks do not provide the date of adoption.

For these cities, we attempted to identify the exact year of adoption by drawing on all available information in the full set of Yearbooks. We code each of these cities as having civil service for every year following the first indication of civil service in the Yearbooks; they are coded as not having civil service for all prior years. Using all of the information we had, we created a balanced panel dataset of all of the cities from 1883 to 1962 with the binary indicator *Civil service*. As others have noted, cities rarely eliminate civil service once it is adopted, so we code cities as having civil service for every year following initial adoption.

While we would like to have detailed information on which employees were covered by civil service for each of these years, the Yearbooks do not provide data on occupations covered until the 1940s. Moreover, even for the 1940s, the coverage information is only available for a subset of cities and uses codes that are difficult to interpret. For example, the 1940 Yearbook has data on coverage for only 135 cities in our dataset. 93 of those cities' civil service covered all employees, 36 covered police and fire only, 4 covered police only, and 2 covered firefighters only. The next year the coverage variable is included, 1942, includes 438 cities, but 45 are listed as having coverage through the state, which does not clearly indicate which employees in the city are covered. (Of the remaining cities with 1942 information, 230 covered all employees, 130 covered police and fire only, 22 covered police only, and 11 covered firefighters only.) Given the unavailability of these coverage data before 1940, plus the limited number of cities included and challenges of interpretation, we were unable to include employee coverage variables in our analysis.

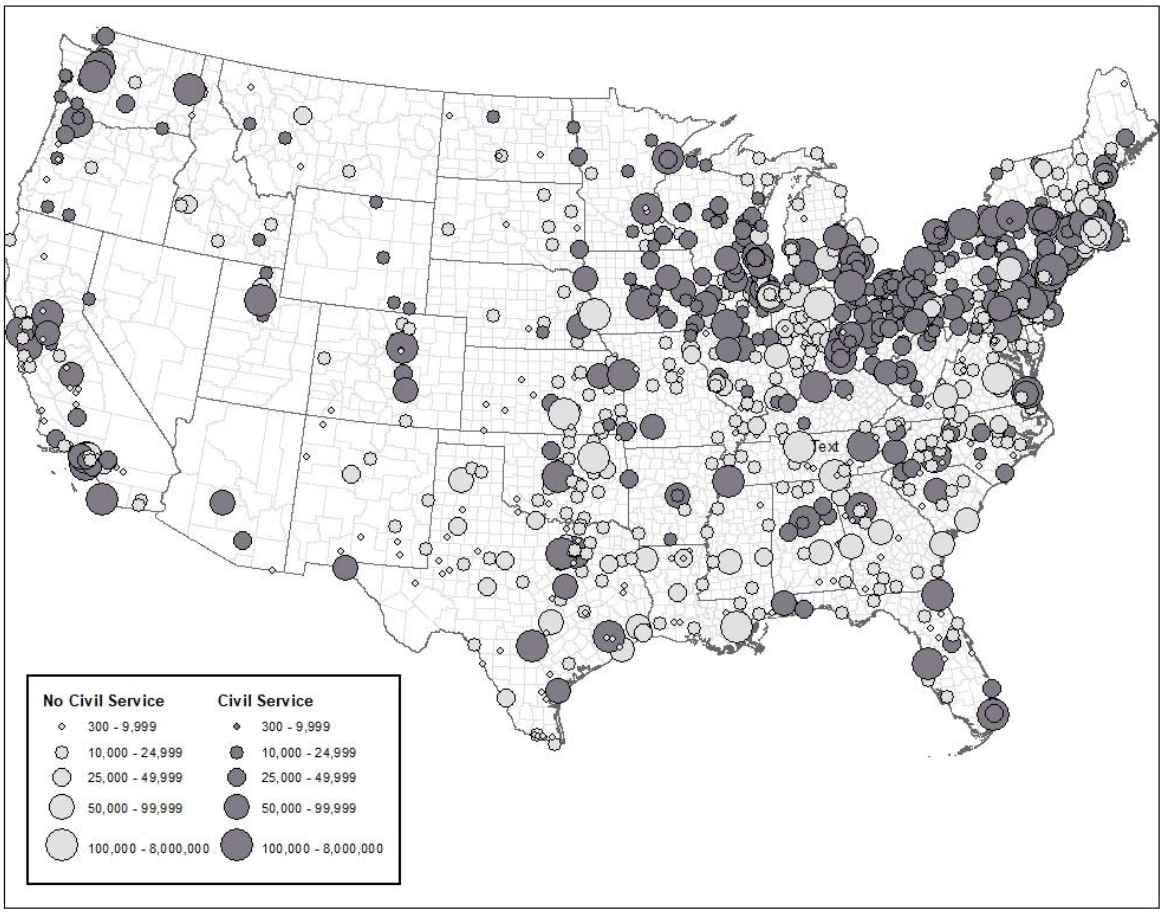
We also relied on the 1938-1940 Yearbooks to code our indicators of municipal employee organizations. The Yearbooks for those years include lists of municipal employee organizations and, for each organization, the year it was established. The ICMA assembled these lists by acquiring directories of a few prominent national-level employee organizations and then listing their local chapters in each state. The national-level organizations included were the IAFF, AFSCME, SCMWA, and the National Civil Service Association (NCSA). In addition, it lists some large local employee organizations that were not affiliated with national organizations, such as local organizations in Chicago, Milwaukee, Los Angeles, and Detroit.[1] Police organizations are conspicuously absent from the list, and we found many scattered instances of reports in news articles of local employee organizations that were considering national

[1] The 1938 Municipal Yearbook (p. 339) describes the list as follows: "Employee organizations are on the march. In city, county, state, and national governments employees are taking an increased interest not only in retirement systems and the protection of merit systems, which are traditional bases of organization, but also in welfare activities and other conditions of employment." It describes the 1938 data as "a directory of the local chapters or organizations affiliated with all national federations of municipal employees…The picture is, however, not complete. It does not take into account the host of skilled workers employed by cities who belong to their own craft unions, which in some cases exercise great influence on behalf of their municipal employee members, nor does it include a vast number of benevolent, protective, and social organizations which are organized along functional lines, particularly in police departments. The task of securing accurate data on the latter two types of organizations proved impractical if not impossible." The 1940 Municipal Yearbook says that "these data were obtained from the national and state affiliates in February, 1940."

affiliation, but had not yet cemented this relationship. After 1940, the Municipal Yearbooks stopped reporting the initial date of establishment of IAFF and other city employee locals, although they do include information about the presence of IAFF and other employee locals in each of those later years.

Figure A1 shows a map of the cities included in our dataset. The dots are scaled by city size and shaded to show whether they had or had not adopted civil service by 1940. This helps to illustrate the number of cities in each region, the distribution of city size within our dataset, as well as the relationship between city size and civil service adoption by 1940, which we discuss in the paper and below.

Figure A1: Map of cities in dataset, by city size and civil service adoption by 1940



Supplemental empirical results

Figure A2 shows the proportion of cities that had adopted civil service by year (corresponding to Figure 2 of the paper), excluding cities for which we could not determine the date of civil service adoption.

Figure A2: Proportion of cities adopting civil service by year

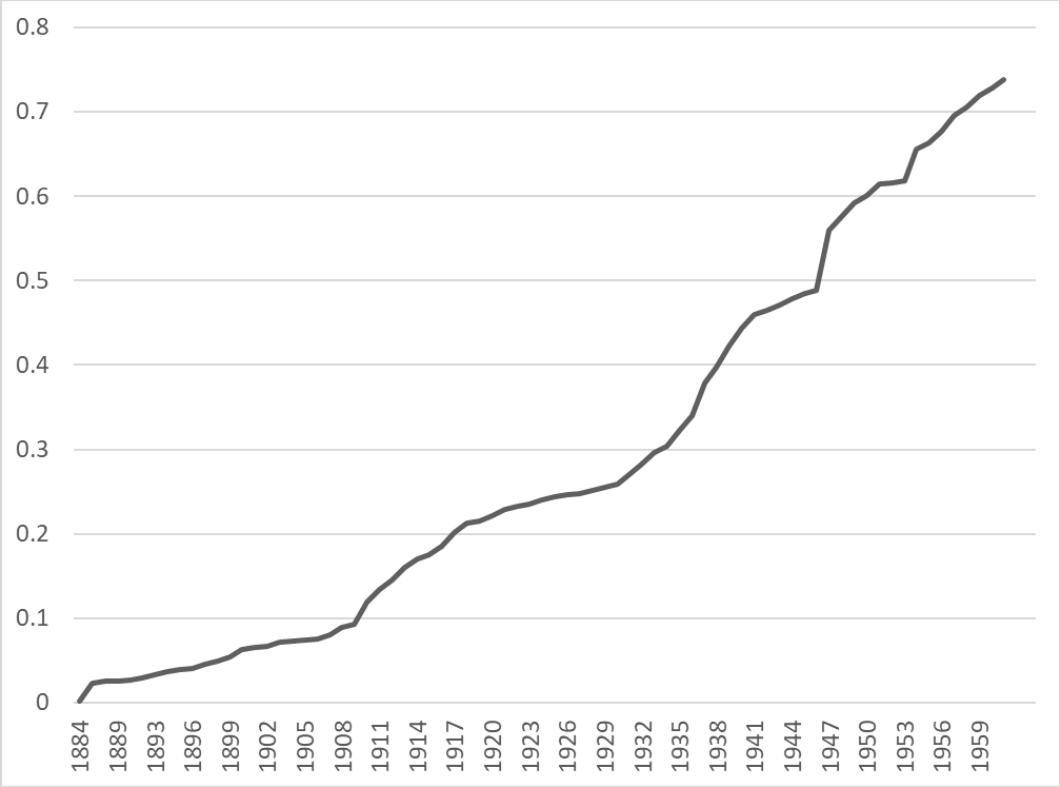


Table A1 reproduces the results of Table 2 of the paper but estimated with logistic regression rather than OLS. Then, in Table A2, we estimate the models from Table 2 with a stricter coding of the dependent variable. As we describe in the paper, for a small number of cities, we approximated the date of civil service adoption and included those cities in the main models in the paper. In Table A2, however, we exclude the cities for which we had to approximate the date of civil service adoption.

Table A1: Logistic regression

	(1)	(2)	(3)	(4)
IAFF	1.291***			1.028***
	(0.285)			(0.304)
Any municipal employee organization		1.216***		
		(0.316)		
IAFF or firefighter benevolent association			1.208***	
			(0.257)	
Population (logged)	0.962***	0.954***	0.897***	1.584***
	(0.115)	(0.123)	(0.116)	(0.127)
% Foreign born	-0.377	-0.289	-0.526	-1.369
	(1.769)	(1.809)	(1.765)	(1.35)
% Illiterate	-7.109**	-6.79**	-7.151**	-6.564***
	(3.268)	(3.07)	(3.011)	(1.571)
% Black	-2.916	-2.956	-2.881	-1.857
	(1.973)	(1.95)	(1.915)	(1.506)
State civil service law	1.017**	1.035**	0.973**	
	(0.472)	(0.476)	(0.470)	
Pseudo R-squared	0.274	0.270	0.270	0.516
Observations	1,211	1,211	1,211	1,102

Notes: Logistic regression estimates with standard errors clustered by state in parentheses. Models 1-3 include regional fixed effects; model 4 includes state fixed effects. *p<0.10, **p<0.05, ***p<0.01 (two-tailed)

Table A2: Strict coding of civil service adoption

	(1)	(2)	(3)	(4)
IAFF	0.257***			0.15***
	(0.055)			(0.044)
Any municipal employee organization		0.238***		
		(0.062)		
IAFF or firefighter benevolent association			0.253***	
			(0.053)	
Population (logged)	0.151***	0.149***	0.138***	0.151***
	(0.019)	(0.021)	(0.019)	(0.017)
% Foreign born	-0.014	0.001	-0.053	-0.332*
	(0.349)	(0.360)	(0.344)	(0.178)
% Illiterate	-0.938***	-0.902***	-1.027***	-0.604**
	(0.309)	(0.298)	(0.272)	(0.249)
% Black	-0.367	-0.367	-0.351	-0.209
	(0.234)	(0.236)	(0.230)	(0.148)
State civil service law	0.188**	0.19**	0.179**	
	(0.084)	(0.085)	(0.084)	
R-squared	0.32	0.32	0.32	0.55
Observations	1,155	1,155	1,155	1,155

Notes: OLS estimates with standard errors clustered by state in parentheses. Models 1-3 include regional fixed effects; model 4 includes state fixed effects. *p<0.10, **p<0.05, ***p<0.01 (two-tailed)

In Table A3 we re-estimate the models in Table 2 with several variations. In models 1 and 2 we lag the IAFF indicator by one and five years. In model 3 we add population nonlinearly. In model 4 we exclude cities located in the three states that passed early state level requirements for municipal civil service: New York, Massachusetts, and Ohio. Model 5 includes the log of the number of city employees, from the 1939 Yearbook, for the set of cities for which that information is available. The coefficient on logged total employment is not significant, nor is logged population in that model, because the two are highly correlated.

Table A3: Lags, semiparametric estimation, excluding early-adopting states, city employment

	(1)	(2)	(3)	(4)	(5)
IAFF (1-year lag)	0.250***				
	(0.056)				
IAFF (5-year lag)		0.208***			
		(0.057)			0.209***
IAFF			0.213***	0.239***	(0.057)
			(0.056)	(0.057)	
Logged population	0.153***	0.167***		0.159***	0.061
	(0.019)	(0.019)		(0.018)	(0.057)
% Foreign born	-0.113	-0.132	-0.049	-0.060	-0.199
	(0.352)	(0.357)	(0.354)	(0.256)	(0.329)
% Illiterate	-0.944***	-0.948***	-0.910***	-1.256***	-0.908*
	(0.302)	(0.301)	(0.295)	(0.330)	(0.494)
% Black	-0.383*	-0.361	-0.398*	-0.215	-0.421
	(0.214)	(0.217)	(0.213)	(0.176)	(0.311)
State civil service law	0.177**	0.170*	0.183**	0.044	0.19*
	(0.083)	(0.086)	(0.083)	(0.064)	(0.104)
Total employees 1939 (logged)					0.064
					(0.052)
R-squared	0.31	0.29	0.12	0.29	0.23
Observations	1,211	1,211	1,211	998	794

Notes: OLS estimates with standard errors clustered by state in parentheses. Models include regional fixed effects; model 3 includes population non-linearly. Model 4 excludes cities from NY, MA, and OH. Model 5 includes logged number of city employees from the 1939 Yearbook. *p<0.10, **p<0.05, ***p<0.01 (two-tailed)

In Table A4, we present the results of additional model specifications in which we interact the employee organization variables with measures of city size. As we discuss in the main paper, the coefficient on the interaction term is always negative, but the statistical significance of the coefficient depends on the model specification. In column 1, we re-estimate the model from column 1 of Table 2, interacting the IAFF indicator with logged city population (centered around its mean). In column 2, we replace the IAFF indicator with the indicator for whether the city had any employee organization in 1940. In both models, the interaction term is negatively signed and statistically significant.

Because there are some very large and very small cities in the dataset, in columns 3-6 we consider whether our estimate of the coefficient on the interaction term is sensitive to outliers at

either end of the population range. First, in column 3, we replace the logged population variable with a population bin indicator: it equals 0 for cities with less than 5,000 residents, 1 for cities with 5,000 to 10,000 residents, and up to 5 for cities with more than 100,000 residents. As we show in Table A4, column 3, when we interact that population bin variable with the indicator for IAFF, we still estimate a negative coefficient on the interaction term, significant at the 10% level in a two-tailed test. Then, in column 4, we operationalize the city population variable in terms of quintiles and interact that 0-to-4 population variable with IAFF. The coefficient on the interaction of IAFF and population quintile is not statistically significant; see column 4. Column 5 returns to the main specification and excludes cities that had population that was either 1.5 times the interquartile range lower than the first quartile or higher than the third quartile. The interaction term remains negative and significant. But in column 6, where we drop cities with less than 10,000 in population, the coefficient estimate on the interaction term shrinks in magnitude and is no longer statistically significant at conventional levels.

Table A4: Interaction of employee organization and city population, additional models

	(1)	(2)	(3)	(4)	(5)	(6)
IAFF	0.278***		0.394***	0.273***	0.259***	0.246***
	(0.058)		(0.111)	(0.100)	(0.059)	(0.060)
Logged population	0.190***	0.201***			0.204***	0.150***
	(0.022)	(0.028)			(0.026)	(0.030)
IAFF * Logged population	-0.092**				-0.076*	-0.047
	(0.034)				(0.043)	(0.034)
Any employee organization		0.254***				
		(0.061)				
Any employee org.		-0.100**				
* Logged population		(0.037)				
Population bin			0.145***			
			(0.018)			
IAFF * Population bin			-0.053*			
			(0.032)			
Population quintile				0.128***		
				(0.016)		
IAFF * Population quintile				-0.021		
				(0.031)		
% Foreign born	-0.092	-0.071	-0.062	-0.038	-0.067	-0.265
	(0.349)	(0.355)	(0.347)	(0.331)	(0.351)	(0.334)
% Illiterate	-0.924***	-0.897***	-0.936***	-0.967***	-0.936***	-1.046**
	(0.296)	(0.286)	(0.307)	(0.292)	(0.305)	(0.450)
% Black	-0.380*	-0.385*	-0.379*	-0.369*	-0.363*	-0.466
	(0.206)	(0.206)	(0.204)	(0.206)	(0.210)	(0.293)
State civil service law	0.178**	0.183**	0.184**	0.181**	0.174**	0.224**
	(0.083)	(0.084)	(0.083)	(0.082)	(0.086)	(0.099)
R-squared	0.32	0.31	0.31	0.33	0.3	0.23
Observations	1,211	1,211	1,211	1,211	1,164	929

Notes: Standard errors clustered by state in parentheses. Models include regional fixed effects. Model 5 excludes outliers (as described in text above). Model 6 excludes cities with less than 10,000 in population.

In Table A5, we present additional model estimates for the results presented in Table 3 of the paper. First, because we lose some observations when we add logged population to the model, we reproduce the results from column 1 (which excludes logged population as a predictor) using only observations that are included in column 3 of Table 3 in the main paper. The estimated coefficient on IAFF remains positive and statistically significant. In column 2, we expand the years of the model from 1890 to 1940 to take advantage of the full time span of our data, and then we limit it to 1910 to 1940, the three-decade period prior to 1940 in which most IAFF adoption and civil service adoption occurred. In both cases, we estimate a positive, statistically significant association between IAFF organization and civil service adoption. In column 4 we replace logged population with a measure of population change (logged) over the previous 10 years. In column 5 we exclude cities located in three states that passed state level requirements for municipal civil service: New York, Massachusetts, and Ohio.

Table A5: Additional two-way fixed effects models

	(1)	(2)	(3)	(4)	(5)
IAFF	0.200***	0.233***	0.149***	0.194***	0.205***
	(0.020)	(0.022)	(0.017)	(0.020)	(0.022)
Logged population		-0.038***	0.001		-0.018
		(0.012)	(0.012)		(0.012)
Pop change				-0.023**	
				(0.010)	
R-squared	0.20	0.24	0.15	0.21	0.18
Observations	49,101	58,791	38,180	45,976	40,734

Notes: Model 1 excludes city-years for which we do not have population data. Model 2 includes 1890-1940. Model 3 includes 1910-1940. Model 4 includes population change. Model 5 excludes NY, MA, and OH.

Next, in Table A6, we estimate models with IAFF organization lagged. Columns 1-3 present estimates with IAFF lagged by one year, two years, and five years, respectively In all cases, the coefficient estimate on IAFF strong and positive. As we explain in the paper, we also consider it likely that in some cases, civil service helped IAFF to organize, even though our focus in the paper is on the pathway by which city employees contributed to civil service adoption. To account for this possibility, in column 4, we include both a one-year lag and lead of IAFF. Column 5 also adds a two-year lag and lead of IAFF. The results suggest that civil service did precede IAFF in some cases–the lead coefficients are positive–and also that IAFF contributed to civil service in others: the coefficients on both the one- and two-year lags of IAFF are positive and statistically significant in both models.

Table A6: IAFF lags and leads (1900-1940)

	(1)	(2)	(3)	(4)	(5)
IAFF (1-year lag)	0.2***			0.089***	0.026**
	(0.020)			(0.018)	(0.011)
IAFF (2-year lag)		0.201***			0.074***
		(0.022)			(0.019)
IAFF (5-year lag)			0.184***		
			(0.025)		
IAFF (1-year lead)				0.128***	0.02**
				(0.017)	(0.009)
IAFF (2-year lead)					0.116***
					(0.016)
Population (logged)	-0.023*	-0.023*	-0.023*	-0.022*	-0.022*
	(0.012)	(0.012)	(0.012)	(0.012)	(0.012)
R-squared (within)	0.2	0.2	0.19	0.21	0.21
Observations	49,101	49,101	49,101	49,101	49,101

Notes: Models include city and year fixed effects. *p<0.1, **p<0.05, ***p<0.01.

In Table A7, we estimate separate models for the 1910s, the 1920s, and the 1930s (through 1940) to assess whether the association between IAFF organization and civil service adoption was roughly the same throughout this long time period. All cities are included in these models, but only for the years spanning the particular decade. The results show clear positive relationships between IAFF and civil service adoption during the 1910s and 1930s. For the decade of the 1920s, however, there is no clear relationship between the two, which is most likely because as we discuss and show in the paper, the 1920s was a slow decade for both employee activism and civil service adoption.

Table A7: Estimates by decade

	(1) 1910s	(2) 1920s	(3) 1930s
IAFF	0.066**	-0.011	0.111***
	(0.028)	(0.008)	(0.020)
Logged population	-0.052***	-0.020*	0.019
	(0.018)	(0.012)	(0.032)
R-squared (within)	0.07	0.02	0.11
Observations	11,752	12,410	14,018

Notes: Standard errors clustered by city in parentheses. Model 1 includes 1910-1919, model 2 includes 1920-1929, and model 3 includes 1930-1940.

In the last few years, scholars have identified problems with the use of two-way fixed effects regressions for estimating the causal effect of a policy (or treatment) on an outcome of interest. In order for a two-way fixed effects estimator to be unbiased for an average treatment effect, not only must the parallel trends assumption hold (although see Roth et al. (2022) for discussion), but the treatment effect must be constant over time and between groups (see de Chaisemartin and D'Haultfoeuille 2022). Recognizing that the latter assumption often does not hold, in the last

few years, a large number of methodological papers have proposed alternative estimators. For example, Goodman-Bacon (2021), de Chaisemartin and D'Haultfoeuille (2020), and Imai and Kim (2018) consider staggered adoption of a binary treatment, and for applications such as this, de Chaisemartin and D'Haultfoeuille (2020) develop the DID_M estimator. Callaway and Sant'Anna (2021) and others have also developed estimators for dynamic treatment effects. All of these heterogeneity-robust estimators are developed to address problems with using two-way fixed effects regression to estimate the causal effect of a treatment, and all depend on some form of a parallel trends assumption holding (e.g., Callaway and Sant'Anna (2021) allow for a conditional parallel trends assumption).

While our main independent variable (IAFF) does change in different years for different cities, and while its relationship to civil service adoption seems to have changed over time (and is different for different types of cities, as we discuss in the paper), we stress that the coefficient estimates in Tables 2 and 3 should not be interpreted as an average treatment effect. We consider it likely that in some cities, civil service promoted IAFF development (or that some cities had characteristics that led to both civil service and IAFF establishment). At the same time, it is clear that in many cities, the organization of firefighters helped to push forward the adoption of civil service. What we show in the paper, then, is that places with organized employees were more likely to adopt civil service—that there is a strong empirical link between the two. Moreover, we provide cases of both types. In Iowa, many cities got civil service early (e.g., 1907 and 1908) because of a successful municipal reform effort, and IAFF locals began to form a few years later—perhaps with the help of civil service, but also perhaps (as we discuss below) because of the presence of mining in the state. In Washington, Wyoming, and West Virginia, however, civil service was pushed heavily by municipal employee organizations.

The examples in the paper help to bolster this account, but it is difficult to establish the causal effect of IAFF with the quantitative data. We find that when we divide cities into cohorts based on whether they never established an IAFF local before 1940, established an IAFF local between 1900 and 1919, established an IAFF local between 1920 and 1929, or established an IAFF local between 1930 to 1940, the null hypothesis of parallel trends "pre-treatment" (meaning before IAFF establishment) is rejected ($p<0.01$), including when we condition on logged city population. Perhaps most simply, looking at levels rather than trends, we find that compared to cities that got IAFF later or not at all, cities that got IAFF earlier were already *somewhat* more likely to have civil service before they got IAFF. See Table A8 below. Because of this, we do not employ the alternative estimators developed in recent literature referenced above, and we do not interpret the coefficient estimates as an average treatment effect.

Table A8: Pretrends

Period during which city established an IAFF local (city cohorts)	Proportion with civil service in 1899	Proportion with civil service in 1919	Proportion with civil service in 1929
1900-1919	0.079	0.444	0.524
1920-1929	0.053	0.368	0.421
1930-1940	0.016	0.16	0.21
No IAFF local by 1940	0.002	0.04	0.06

Notes: Proportions exclude cities in NY, MA, and OH.

This empirical pattern makes sense in the context we are examining, as we discuss in the paper: First, there are theoretical reasons to think that civil service in some cases helped employees form organizations. Second, there could be unmeasured, time-varying differences between cities that did and did not organize IAFF early that are correlated with civil service adoption. Third, our IAFF indicator is a measure of employee agency, but there were almost certainly instances of employee agency that are not captured with this variable. Even so, the new dataset we analyze in the paper establishes that there is a strong association between early employee organization and civil service adoption in American cities, which has not been recognized or established in past research.

Relationship with Municipal Reform and Political Machines

In this section we look to see whether the relationship between the IAFF and civil service adoption is muted or absorbed by the presence of municipal reform or patronage-based political machines. We measure municipal reform by noting the adoption of city manager or commission government charters, the share of council seats elected at-large, and the presence of nonpartisan elections. These institutions do not correlate strongly with the presence of IAFF locals. See Table A9.

Table A9: Correlations, IAFF and reform institutions in 1940

	IAFF	Commission or council-manager	% At Large	Nonpartisan
IAFF	1			
Commission or council-manager	0.1127	1		
% At Large	0.0265	0.5147	1	
Nonpartisan	0.0344	0.3477	0.2619	1

In Table A10, column 1, we add these reform institutional measures to our base model from Table 2. In model 2 we combine these institutions to denote cities that had all three reform institutions. In model 3 we include a measure of machine organizations in the city (for a more limited sample of cities for which the data were available). Across all models, the coefficient on IAFF remains strong and positive. Interestingly, reform institutions are not significant predictors of cities having civil service by 1940. The presence of a political machine is negatively associated with civil service (as the literature suggests it should be).

Table A10: Adoption of Municipal Civil Service by 1940 & Reform

	(1)	(2)	(3)
IAFF	0.262***	0.262***	0.305***
	(0.051)	(0.054)	(0.086)
Reform Government	0.025		
	(0.071)		
% At Large	-0.041		
	(0.070)		
Nonpartisan	0.024		
	(0.080)		
All Reform Institutions		-0.066	
		(0.040)	
Machine			-0.269*
			(0.145)
Population (logged)	0.152***	0.160***	0.110***
	(0.023)	(0.022)	(030)
% Foreign born	-0.167	-0.237	-0.195
	(0.284)	(0.305)	(0.577)
% Illiterate	-1.030**	-0.995**	-0.420
	(0.414)	(0.430)	(0.714)
% Black	-0.316	-0.336	-0.300
	(0.222)	(0.220)	(0.484)
State civil service law	0.166*	0.165*	0.148
	(0.089)	(0.084)	(0.092)
R-squared	0.31	0.31	0.254
Observations	1,065	1,065	190

Notes: OLS estimates with standard errors clustered by state in parentheses. Models include regional fixed effects. *p<0.10, **p<0.05, ***p<0.01 (two-tailed)

Variation in IAFF organization

As we explain in the paper, a natural question that arises from our presentation of these new data on early municipal employee organizations is what explains the geographic and over-time variation in that independent variable. For the question and causal pathway proposed in the paper, this is a good question to ask because one might be concerned that there could be some omitted variable that explains both whether a city's firefighters established an IAFF local and whether the city had civil service. However, this is also an entirely novel line of inquiry—and one that stems from one of the empirical contributions we are making in the paper: our finding that in many parts of the United States, local government employees had agency, were active in politics, and formed unions and organizations decades earlier than is often recognized. Describing this empirical pattern raises new questions about why city employees organized early in some cities and not others, and what dynamics explain that variation. We consider this an important question and one worthy of further research. It is also a big question, and as it stands, there are no existing theories of what explains this variation, and thus existing research from which we can draw.

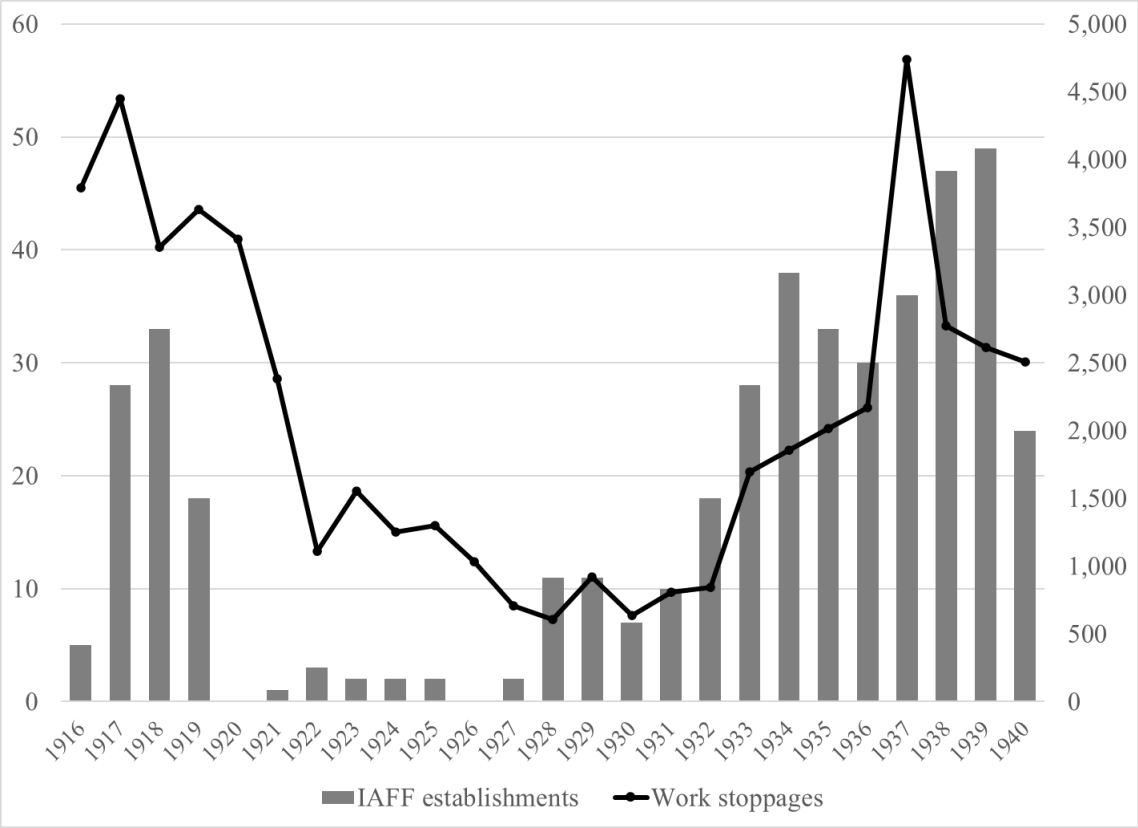
One possibility is that early firefighter agency and organization were more likely in larger cities than in smaller cities. In models presented in Table A11 below, we show that this is the case. In column 1 of Table A11, we model whether cities established an IAFF local by 1940, with regional fixed effects. Column 2 includes state fixed effects. Column 3 models IAFF establishment by city-year with city fixed effects. All of the estimates show a positive relationship between population size and the likelihood of a city having an IAFF local.

Table A11: Modeling IAFF

	(1)	(2)	(3)
Population (logged)	0.205***	0.201***	0.099***
	(0.018)	(0.019)	(0.008)
% Foreign born	-0.046	-0.174	
	(0.247)	(0.187)	
% Illiterate	-0.163	-0.068	
	(0.231)	(0.215)	
% Black	-0.088	-0.012	
	(0.158)	(0.196)	
State civil service law	-0.064		
	(0.056)		
Midwest	0.181*		
	(0.098)		
Northeast	-0.214**		
	(0.092)		
South	-0.061		
	(0.106)		
Model	By 1940, region fixed effects	By 1940, state fixed effects	1900-1940, city fixed effects

As we explain in the paper, another possible contributor to where and when IAFF was likely to establish locals was the strength of the private-sector labor movement. Most research on the labor movement and its history focuses on private-sector unions (see, e.g., the discussions in Slater 2004, Walker 2020), perhaps in part because the two operate under very different legal regimes. However, as Walker (2020, chapter 2) explains, the private and public-sector labor movements had closer connections before the NLRA than is often acknowledged. Firefighters' locals, police, and some teachers (those affiliated with the AFT) had organizations that were recognized and chartered by the AFL. When the CIO split from the AFL, it supported government unions as well (Walker 2020). Thus, while the NLRA of 1935 gave public- and private-sector unions different legal status, it is not clear that unions or workers themselves saw important distinctions between the two. Even before IAFF was established in 1918, the AFL chartered firefighters' locals in a number of cities–which eventually were included in IAFF once it was created.

Figure A3: IAFF establishments and total number of work stoppages, 1916-1940



While the relationship between establishment of firefighters' locals and private-sector union strength has not itself been examined in the literature, Figure A3 below shows that the temporal pattern of firefighters' local establishments we showed in Figure 3 of the paper tracks closely the ebb and flow of work stoppages, which were mostly private-sector strikes. For Figure A3, we draw data from the US Bureau of Labor Statistics (1947) on the number of work stoppages by year and overlay those numbers (with a separate axis on the right) with the IAFF establishments data. Both were high during the late 1910s, then slowed during the 1920s, and surged again in the 1930s. This suggests that periods of labor movement strength and activism in the United States, as captured by strike activity, roughly coincide with the most active periods of IAFF organization in US cities.

In addition, economic historian Thomas Holmes (2006) has found evidence that geographic regions that had large mining and steel establishments mid-century tend to have relatively high unionization rates today—even in perhaps surprising areas like Alabama, and even in industries that were not prominent or unionized mid-century. Holmes proposes that unions have spillover effects: that once unions are established and have high membership in certain areas, there is a tendency for those unions to seek to organize other workers in the same area, and thus for unionization to spread in geographically proximate places, especially during this time period. Holmes in particular notes that close to 100% of workers in large mines and steel mills were in unions by the 1950s. He presents evidence that in recent decades, even as those mining and steel

establishments have shrunken or disappeared, workers in healthcare and grocery stores have higher unionization rates in those areas, such as around Birmingham, Alabama.

This theoretical insight has not yet been proposed as a possible explanation for patterns of public-sector unionization, but we think it plausible that these early unions in mines and steel mills could also have helped firefighters' locals to organize. As we explain in the paper, of the nine cities in our dataset that were the first to establish firefighters' locals affiliated with the AFL (which became IAFF locals a few years later), all were in close proximity to mining and steel operations. The earliest were in Pittsburgh, PA, and Chicago, IL—both large cities, but also cities with large, prominent steel mills. Pittsburgh organized the first firefighters' local in 1903, AFL Local 11461, which later became IAFF Local 1.[2] Chicago firefighters established AFL No. 12270, which later became IAFF Local 2. On its Facebook page, IAFF Local 2 notes the following in its account of its history: "The association with the AFL allowed the Chicago Firefighters to work within the trade Union movement in Chicago and nationally to bring attention to the long hours and minimum pay that Firefighters received."[3] Mckeesport, PA, in the Pittsburgh metro area and a steel town as well (Noakes 2021), also established an IAFF local in 1916.

Another early firefighters' local was established in Pueblo, CO, in 1912, which by the 1880s was engaged in processing iron ores that were mined in nearby Leadville. Pueblo also had a large steel mill, the Colorado Coal & Iron Company. Pueblo was selected as the site of the steel mill because of its close proximity to coal, limestone, and the railroad.[4]

Three other cities that established IAFF locals by 1916 were in Iowa: Des Moines (1913), Cedar Rapids (1916), and Council Bluffs (1916). As we discuss in the paper, several cities in Iowa, including these three, adopted civil service early, around 1908, alongside the full package of reform-style institutions. This, then, is an example of a state where civil service was spread in large part because of reform efforts. That said, the state also had cities that had early IAFF locals, and there was also considerable coal mining in the state at the time. Coal production in Iowa peaked just before 1920 and then began to decline as the railroads began to buy coal from other states, such as Kentucky.[5]

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[2] See "International Association of Fire Fighters (IAFF): A History of Firefighter Unions," Marin Professional Firefighters, https://iaff1775.org/our-union/iaff-affiliation/2202-a-history-of-firefighter-unions (accessed March 23, 2023).

[3] "Chicago Fire Department Firefighters Union - Local 2," https://m.facebook.com/ChicagoFireDepartment/photos/a.113748248962317 4/505315438472261 2/ (accessed March 23, 2023).

[4] History Colorado, Colorado Encyclopedia, "Pueblo," https://coloradoencyclopedia.org/article/pueblo-0 (accessed March 23, 2023); City of Pueblo, Colorado, "History of Pueblo," https://www.pueblo.us/119/History-of-Pueblo (accessed March 23, 2023).

[5] Malcolm Price Laboratory School, University of Northern Iowa, Cedar Falls, Iowa, 2003, "Coal Mining in Iowa, 1870-1940," Explorations in Iowa History Project, https://iowahist.uni.edu/Social_Economic/CoalMining_inIowa/coal_mining_in_iowa.htm (accessed March 28, 2023).

The other two cities that were among those that had established IAFF locals by 1916 were Great Falls, MT, and Wheeling, WV. Great Falls, MT, was home to a smelter called the "Big Stack" that refined raw minerals that were extracted from Butte (which also established an IAFF local early, in 1918, and was connected to Great Falls by the railroad).[6] Wheeling, WV, was a steel city, part of the iron and steel region called the "Middle District." In 1897, there was a national labor convention in Wheeling where a nationwide coal strike was discussed, and one of the speakers was Samuel Gompers, founder of the AFL (see White 1932).

1917 and 1918 also saw a surge in IAFF local establishments around the country, including in cities like Bellingham, WA, and Birmingham, AL, which were also mining centers.

These examples suggest this could have been one possible contributor to patterns of the establishment of IAFF locals in the earliest years: proximity to mining and steel production, which had high rates of unionized workers. To explore this possibility quantitatively in a preliminary matter, in the paper, we describe how we have used data from the 1940 Census on the number of workers in each county employed in mining. We note that this only approximates what we are interested in. For example, we would rather have data on mining employment in 1920, because in many regions where mining was prominent in 1920, such as in Bellingham, WA, and Iowa, the mining industry had already declined substantially by 1940. However, the Census data from earlier years such as 1920 do not have mining employment data broken down by county, which we rely on for our analysis in the paper. Even with this caveat considered, however, there does appear to be a connection between mining employment and where the earliest IAFF locals were established.

[6] "Tenacity: The Miners of Great Falls," Visit Great Falls, Montana, https://visitgreatfallsmontana.org/2017/07/20/tenacity-miners-great-falls/ (accessed March 23, 2023).

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