Government choice between contract termination and contract expiration in re-municipalization: A case of historical recurrence?

Running: Choice between contract termination and contract expiration in re-municipalization

Daniel Albalate[†], Germà Bel[†] and Eoin Reeves[φ]
[†] Universitat de Barcelona; [φ] University of Limerick

(Forthcoming *International Review of Administrative Sciences*)

Abstract: Since the early 2000s the terms 're-municipalization' and 'reverse privatization' entered the lexicon as several examples emerged of governments taking ownership of assets and services that had previously been privatized or outsourced. Various methods are used to implement re-municipalization decisions and differences are observed across countries and sectors. The approaches most frequently adopted are re-municipalization through contract termination and contract expiration. We utilize a wide database of re-municipalizations worldwide to analyze the factors that influence government's choice between these two approaches. The results from our multi-variate analysis find a pattern of historical recurrence in the characteristics of the current re-municipalization process.

Keywords: re-municipalization, contracts, expropriation, expiration, privatization.

Practitioner points

1. Most governments wait for contracts to expire but the number of contract terminations is sizable.

2. Re-municipalization in larger cities, network sectors (particularly water) and implemented by municipal governments have a positive association with termination

3. Re-municipalization of energy utilities and conducted in countries of French legal origin is positively associated with contract expiration.

4. Patterns or contemporary re-municipalization closely resemble those witnessed in the 'Progressive Era'.

Acknowledgments: This research received financial support from the Spanish Ministry of Science and Innovation (PID2019-104319RB-I00).

Government choice between contract termination and contract expiration in re-municipalization: A case of historical recurrence?

Introduction

The provision of local public services is undergoing substantial change. Whereas reforms such as privatization and marketization dominated the last quarter of the twentieth century, alternative reforms such as intermunicipal cooperation (Bel and Sebő, 2021) and corporatization of public services (Andrews et al., 2020) have gained prominence since the turn of the century. Re-municipalization has also become widespread, in both developed and developing countries, and in different service sectors. Following pioneering studies by Hefetz and Warner (2004, 2007), an increasing number of multivariate empirical studies have been recently analyzed the drivers of re-municipalization (Chong, Saussier and Silverman (2015), Campos-Alba et al. (2020), Gradus and Budding (2020), Gradus, Schoute and Budding (2021), Warner and Aldag (2021), Albalate and Bel (2021), Schoute, Gradus and Budding, 2021).

In a recent study, Albalate, Bel and Reeves (2021) analyze factors that influence whether the re-municipalization decision is actually implemented, and the time taken to complete implementation. However, studies into aspects of the implementation of re-municipalization policies that follow adoption decisions are still extremely scarce. This article addresses this gap in the literature by analyzing the choice between contract termination (which often involves expropriation of assets) and contract expiration, when re-municipalization is implemented. Implementing re-municipalization can be expensive if governments are required to compensate investors for private property they expropriate. In addition, the costs of negotiating the termination of contracts are likely to be high. Governments are therefore incentivized to wait for contracts to expire if they choose to re-municipalize. However, the

most recent international data on re-municipalization indicates that the number of re-municipalizations by contract termination is appreciable. This raises the question we seek to address in this paper. What determines whether re-municipalization follows contract termination or expiration?

This question has received attention in the debate concerning re-municipalizations in earlier periods of History (Gómez-Ibáñez, 2003), especially in the Progressive Era (Lough, 2016), but as far as we know it has not been the subject of robust empirical analysis. By empirically analyzing this issue we add to the literature by illuminating the relative power of theories of re-municipalization in terms of explaining the most recent wave of this phenomenon.

We take advantage of an extensive worldwide database of re-municipalizations (Kishimoto, Steinfort and Petitjean, 2020) and use logit estimations to discern the factors driving the choice between contract termination and contract expiration. Our main findings are that larger cities, network services -particularly water- and decision making at the municipal level are positively associated with contract termination, whereas energy re-municipalization and French Legal Origin are negatively associated with contract termination. In light of our findings, we reconcile the current re-municipalization process with earlier historical processes.

Theories of re-municipalization and historical empirical evidence

Theories of re-municipalization

Notwithstanding the burgeoning literature on re-municipalization and reverse contracting (contracting in), the literature on public sector contracting is dominated by contracting out. Nevertheless, a working knowledge of contracting in both directions is required for a fuller understanding of the overall contracting process (Hefetz and Warner, 2004). For this reason,

our review of the relevant theoretical literature draws on studies covering both contracting-in and contracting-out.

Our first proposition regarding re-municipalization by termination relates to municipality size. Bel and Fageda (2017) review the contracting literature and conclude that, generally, both more contracting out and contracting back-in, is expected among larger governments. This is attributed to the wider range of services that larger municipalities typically provide as well as their greater capacity for managing the contracting process.

An important related proposition, that can be drawn from the economies of scale literature, is that smaller municipalities are more likely to contract-out because their production capacity is too small to permit exploitation of economies of scale (Bel and Fageda, 2017). The logic of this argument therefore suggests that the probability of re-municipalization is expected to be higher in larger jurisdictions. Furthermore, when considering the relationship between a municipality's size and whether it re-municipalizes after contract termination or expiration, the administrative and technical capacity of the municipality should be considered. As the transaction costs arising from the management of contract termination are likely exceed those after expiry, it is expected that larger municipalities are better resourced to manage the relatively complex termination process and re-establish public production (Brown and Potoski, 2003; Foged, 2016). These observations provide the basis for our first hypothesis.

H1: Re-municipalization by termination is positively associated with population.

Public interest theory provides a powerful framework for understanding the changing choices between private and public ownership and management of public infrastructure and services (Bel, 2020). This approach provides a rationale for public intervention in the economy to protect and foster public interest and to remedy the impact of market failures (Stiglitz, 1986;

den Hertog, 2010). Sources of such failure include monopolistic conditions in public services and externalities; that is, effects of the service delivery (positive or negative) that private firms cannot internalize (via revenues or costs).

Such characteristics are present, for instance, in water distribution, where urban water systems involve huge sunk costs with networks characteristics that involve significant returns to scale, particularly economies of density (Bel, 2013). In this context, competition is largely absent, as duplicating water networks does not make economic sense. However, as monopolistic conditions can result in lower quantities and higher prices relative to a competitive regime, a rationale for public intervention arises (Peterson and Hendricks, 2016). Furthermore, water distribution is characterized by positive externalities particularly in relation to public health and potential epidemics (Olmstead, 2010). Both the monopolistic nature of the service and positive externalities provide a rationale for public intervention as a mechanism to expand services, and generate positive external effects, particularly in relation to environmental pollution and health (Casado-Pérez, 2017).

With respect to re-municipalization, the strength of public interest considerations can strengthen the motivation to reverse earlier privatization decisions by termination. Potential problems arising from abuse of a monopolistic position or consequences in the domain of public health (e.g. problems related to water quality) can add a sense of urgency to the implementation of the re-municipalization decision. Instead of waiting for contracts to expire, contract termination offers a potentially quicker mechanism for governments to take over a given service. This provides the justification for our second hypothesis based on public interest theories:

H2: Re-municipalization by termination is positively associated with monopolistic conditions.

The influence of service-related transaction costs on the privatization decision is addressed in several theoretical analyses (Williamson, 1979, Sappington and Stiglitz, 1987). Many studies have empirically analyzed the issue, frequently relying on indicators of transaction costs such as asset specificity and the difficulties of contract management (Brown and Potoski, 2005; Hefetz and Warner, 2012). These studies frequently find that the probability of privatization is higher for services with lower transaction costs (Brown and Potoski, 2003; Rodrigues, Tavares, and Araújo, 2012; Schoute, Budding and Gradus, 2018).

Recent studies confirm the negative relationship between transaction costs and contracting in (e.g. Gradus. Schoute and Budding, 2021). These authors explain their results in terms of higher costs of organizational change in asset specific services. With respect to the question of contract termination versus expiration they find that the higher the degree of asset specificity of the service, the higher the financial costs incurred due to termination. In such cases, governments are more likely to let contracts expire before taking over the service in order to reduce the costs of organizational change. Therefore, as sources of high transaction costs are more likely in network industries characterized by asset specificity, we form the following hypothesis:

H3: Re-municipalization by termination is negatively associated with service-related transaction costs

Recent scholarship shows that the broad institutional environment including legal systems have implications for reforms such as privatization and its reverse. Gomez Ibáñez (2003) emphasizes that the viability of regulatory arrangements based on private ownership and markets depends on prevailing political and legal systems. Common law systems are often considered to provide more protection for individual property rights than civil law systems

and may be expected to be more favorable for private ownership (La Porta, Lopez-de-Silanes and Shleifer, 2008). Nevertheless, the implementation of significant change such as privatization or its reverse requires a "sound institutional environment [that] can reduce administrative and bureaucratic barriers for terminating contracts" (Díaz, 2020). Civil law systems are generally associated with rigid and protracted disputes in the sphere of concessions and privatization for reasons including a lack of precedent and administrative inefficiency (Shaw, 1998). Kickert (2005: 548) notes that in the French civil law system "[a]dministrative law has hindered administrative reforms with its abundance of laws and regulations". In this context we expect that re-municipalization is less likely to happen by contract termination in countries categorized under the French civil law legal origin. Our fourth hypothesis therefore states:

H4: Re-municipalization by termination is negatively associated with French legal origin.

Historical evidence of re-municipalization

Hirschman's (1982) seminal study on the oscillation between public and private solutions to economic and social problems suggests that public or private solutions alternate in a cyclical fashion. Wollmann (2018) also observed a degree of historical oscillation between public and private delivery of services, mainly influenced by the the dominant political beliefs and narratives. Therefore, a review of the history of the municipalization wave that occurred around the turn of the twentieth century can usefully contextualize aspects of the empirical exercise undertaken in this paper.

While private companies initially provided many important local public services, such as water distribution and waste collection, and later energy utilities, the end of the nineteenth century witnessed the expansion of public intervention in these sectors. Beginning in the

1850s, local governments in the US increasingly chose public delivery for newly created services. As the end of the century approached, local governments embarked on the delivery of new public services and increasingly engaged in expropriation of private concessions and assets. The latter became a defining characteristic of what became known as the Progressive Era, a period in US history when local governments heavily increased their intervention in local public services (Lough, 2016). Between 1895 and 1915, the number of public urban water networks in the US increased by 40% whereas that of private networks decreased by 6%, and a similar trend was observed for solid waste collection services in the US (Gómez-Ibáñez, 2003).

The documented history of municipalization in Europe resembled that in the US insofar as most available information covers the water distribution sector. In the United Kingdom, local public services were initially developed by private companies (Millward, 2007). After an outbreak of cholera in 1848, public ownership progressively expanded, and the nationalization of the private companies delivering water in London in 1902-1903 was a landmark in public delivery expansion.

Public intervention -in ownership and management- was the dominant approach adopted in Scandinavian countries from the mid-1800's (Bel, 2020). In addition, the growth of water networks in German cities (promoted by English engineers) was developed under public ownership and management (Barraqué and Kraemer, 2014). The city of Berlin, where a private concession for water service was awarded in 1856, was however a notable exception.

Municipalization in the case of France and countries under French influence followed a different path. Similar to Anglo-Saxon countries, the initial development of water networks was promoted by private investors and legal contract failures sharply increased in the second half of the nineteenth century. However, while public investment and ownership of networks increased, management tended to remain private through lease and management contracts

thus avoiding full expropriation of networks that were already completed by the end of the nineteenth century (Pezon, 2012). Instead, newly created networks tended to be owned and managed by governments. Belgium and Spain followed a similar path to that of France. This is consistent with hypothesis 4 above, which posits that contract termination is less likely in countries with legal systems of the French Legal origin.

The history of water municipalization in the US sheds significant light on the relationship between municipalization and the city dimension. Jacobson (2000) shows that the earliest examples of municipalization of water services occurred in large cities such as Boston, San Francisco and Seattle. These cases were followed by other cities such as Baltimore, Houston Los Angeles and New York. By 1900, water services were delivered by the public sector in ten of the eleven most populated cities in the US. This observed pattern of larger cities pioneering municipalization is consistent with hypothesis 1 above, which suggests that population is positively related to termination of contracts.

When considering differences between service sectors, the evidence shows that by the end of the nineteenth and beginning of the twentieth centuries, water networks and solid waste collection were the sectors where re-municipalization was most common and public ownership and management was hegemonic (Gomez Ibáñez, 2003). However, public intervention was much less frequent in energy services. According to Troesken and Geddes (2003), by the end of the progressive era, public ownership was below 30% in the electricity sector and below 10% in the gas services sector.

Two explanations have been put forward for this contrast between water and waste services versus energy services. Gómez-Ibáñez (2003) suggests that governance related transaction costs for public intervention without expropriation (e.g. public subsidies to private firms, technical expertise) were high for water and waste, as these were locally regulated services. Notwithstanding their local nature, these costs were lower for energy services as regulation

was more frequently the responsibility of supra-municipal authorities especially (for example, state-level regulation). Hence, expropriation was more common in water and waste whereas regulatory changes were more frequent in the energy sector.

Furthermore, Bel (2020) emphasizes that while network characteristics were similar for water and energy, monopolistic conditions were stronger in the water sector due to lack of available substitutes. In contrast, electricity and gas were often substitutes for each other particularly in street lightning, which was the most demanded service. This limited the seriousness of the competition failure in energy compared to the water sector. This account is consistent with hypothesis 2 above, which suggests that monopolistic characteristics are positively related with contract termination. Furthermore, it provides the rationale for a fifth hypothesis (H5) which states:

H5: Contract termination is positively related to water services and negatively related to energy services.

Available Data on Re-Municipalization Worldwide

Private participation in public service delivery expanded after extensive adoption of privatization policies in the 1980s. Privatization affected the public services most commonly provided by local governments worldwide, such as water distribution, sewage, waste collection and local transportation. Privatization was also important in other public services for which local provision is less frequent (e.g. energy in Germany and Scandinavia). In the last decade however, evidence has emerged of widespread reversal of privatization measures in all these sectors in countries at different stages of economic development.

Until recently, a lack of detailed data has hampered empirical evaluation of the diffusion, drivers, types and performance of re-municipalization measures. Clifton et al. (2021) observe

the difficulties with quantifying the extent of re-municipalization as the concept is not clearly defined and longitudinal data is scarce. They note that such data has only been recorded for the US by Warner and Hefetz (2020), who used national survey data to show trends of contracting out and contracting in over time. They found that when measured as a percentage of public service delivery, the level of reversals varied from period to period and stood at the 10-11% range since 2007.

The paucity of international data on re-municipalization has been addressed in recent publications by Kishimoto and Petitjean (2017) and Kishimoto, Steinfort and Petitjean (2020). These publications, which provide the only international dataset on re-municipalization of which the authors are aware, provide new information on the extent of re-municipalization that occurred between 1996-2020. Their data includes information on where re-municipalization occurred, the specific sectors and services affected, and the years in which reform decisions were taken and implemented.

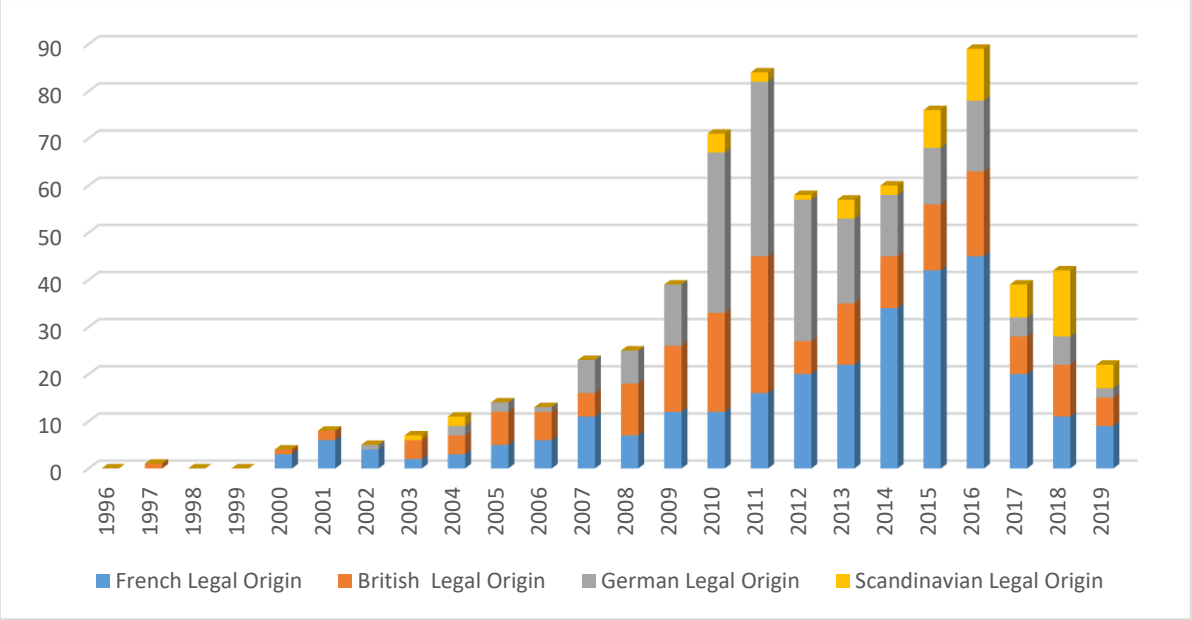
Kishimoto, Steinfort and Petitjean (2020) describe how sixteen organizations worked jointly to gather the data through a participatory survey distributed in trade union and civil society networks in two phases between 2015 and 2019. The collected data was verified by follow-up desktop research. The survey identified 922 cases of re-municipalization processes, where the following methods were used: (a) contract expiration; (b) contract termination; (c) private operator withdrew and (d) shares were sold by private operators. These cases are distinguished from 484 recorded cases of municipalization where new public services were created. Overall, they found that public services have been brought under public control (municipalization and re-municipalization) in 59 countries. Figure A1 shows a breakdown of the incidence of municipalization and re-municipalization by country. Table A-1 shows data of remunicipalization by sectors and population involved.

Concentrating on re-municipalization, which is the focus of this paper, the data shows that this type of reverse privatization occurred most frequently in the water and energy sectors. Most re-municipalizations are decided after contracts expired thereby avoiding the costs of terminating contracts, but the proportion of re-municipalizations that followed contract termination was nonetheless sizeable. The next section describes the relevant data in more detail and the methodological approach adopted to address our main research question.

Empirical Approach

We use the data assembled by Kishimoto, Steinfort and Petitjean (2020) to identify the determinants of how re-municipalization took place. The dataset provides information on 840 cases where re-municipalization happened through contract expiration or contract termination (this including public acquisition of shares). Our final sample includes 748 observations for which the database includes full information on institutional and demographic characteristics. In aggregate, the trend of reversals has been upward. Figure 1 shows the incidence of re-municipalization in countries classified by legal origin. It shows a sharp increase in reversals after the global financial crisis (GFC) of 2008. Although the annual incidence of re-municipalization has fallen since 2016 the overall incidence after the GFC has been several times higher than the annual number of cases recorded before 2008.

Figure 1: Incidence of re-municipalization in countries classified by legal origin.



Whereas the majority of observations of re-municipalization were recorded in the water and energy sectors other examples were recorded in transport, waste, health, education and a range of other local government services. A total of 485 observations (65%) involve decisions by municipal governments with all other decisions taken at other sub-national levels (including, inter-municipal, regional and state/province). It is important to keep this diversity of jurisdictions in mind and to note that for simplicity reasons the label re-municipalization is applied to all cases.

To address our main research question, we employ a probabilistic model. Specifically we use logistic regression analysis in which our dependent variable (*Terminated)* is a binary variable that is assigned a value of 1 for those re-municipalizations that involved the termination of the contract which governed service provision and a value of 0 for those re-municipalizations implemented after contracts expired.

The covariates included in our model are chosen in order to test the main hypotheses described in previous sections. Observations on most of our co-variates were drawn from the database we use. First, we test the hypothesis (H1), that a positive correlation exists between population and contract termination. We use the log transformation of population (*ln_pop*) to

account for possible non-linearities in this relationship and to mitigate the effects of outliers on the estimated probabilities.

Second, we test the hypothesis (H2) which states that services with monopolistic characteristics are positively associated with the probability of termination. However, as services with monopolistic features are often provided in industries with network characteristics, we also hypothesize (H3) that the transaction costs associated with contract termination are high in network sectors and the probability of termination is thereby lower. To test this hypothesis, we include the variable *Network*, which is denoted by a value of 1 in services with network characteristics (mainly energy, water and transportation). This variable is assigned a value of 0 for all other services. As we are testing two competing hypotheses, we expect our empirical results on the specific impact of network services to indicate the factor (transaction costs or monopolistic characteristics) that is dominant.

Furthermore, our data shows that re-municipalized network services are dominated by two sectors, namely energy and water. We test the hypothesis (H5) that water distribution is positively associated with termination whereas the relationship between the energy sector and termination is negative. Therefore, we estimate a separate model where we substitute the *Network* variable with two binary variables. First, we include the variable *Energy*, which is assigned a value of 1, if observations involve the energy sector and 0 otherwise. We also include the variable *Water*, which is given a value of 1 for water services and 0 otherwise.

We also analyze the relationship between re-municipalization by termination and legal systems. We hypothesize (H4) that terminations are less probable in legal systems that are generally regarded as less flexible, particularly the French civil law system. To test this hypothesis we follow the legal origin classification proposed by La Porta, López de Silanes and Shleifer (2008) and create four binary variables denoting the legal origin assigned to the

country where the re-municipalization occurred, namely: *LegOrUK; LegOrFR; LegOrGer; and LegOrScan.*

Finally, as other control variables, we include a binary variable named *Municipal*, to capture differences between municipal governments compared to those at higher (sub-national) levels such as inter-municipal and regional. We also account for time effects by including year-specific binary variables in all our regressions. Our first model is therefore:

$$\text{Probability}(\text{Terminated}_i=1) = \alpha + \beta_1\text{LnPopulation}_i + \beta_2\text{Network}_i + \beta_3\text{Municipal}_i + \\ + \beta_4\text{LegOrUK}_i + \beta_5\text{LegOrGer}_i + \beta_6\text{LegOrScan}_i + \beta_7\text{Year}_i + \varepsilon_i \quad (1)$$

where i = 1, …, 748 denotes observed re-municipalizations, and ε is a heteroscedasticity-robust error term.

Later we decompose the network variable between the energy and water sectors and estimate the following model:

$$\text{Probability}(\text{Terminated}_i=1) = \alpha + \beta_1\text{LnPopulation}_i + \beta_2\text{Energy}_i + \beta_3\text{Water}_i + \beta_4\text{Municipal}_i + \\ + \beta_5\text{LegOrUK}_i + \beta_6\text{LegOrGer}_i + \beta_7\text{LegOrScan}_i + \beta_8\text{Year}_i + \varepsilon_i \quad (2)$$

Table 1 displays the descriptive statistics of the variables employed in the logistic regression models which we discuss in the next section.

Table 1. Descriptive statistics.

	Mean	Std. Dev.	Min	Max
Ln_Pop	10.83	2.17	3.78	17.59
Network	0.59	0.49	0	1
Energy	0.24	0.43	0	1
Water	0.32	0.47	0	1
Municipal	0.64	0.48	0	1
LegOrUK	0.24	0.43	0	1

LegOrGer	0.30	0.46	0	1
LegOrScan	0.08	0.26	0	1
Year	2012	4.05	1996	2020

Results

In table 2 we display our results for five separate logistic regressions. Models (1) to (4) include the full sample of observations. These models are applied to test our hypotheses as well as differences between how re-municipalization is implemented at the municipal government level compared to those at higher (sub-national) levels. Model (5) is used to separately analyze the sub-sample of municipal governments and is estimated using observations on re-municipalizations at this level of government.

As the key variables in our analysis are binary, we transform coefficients into odds ratios (OR) which permits the interpretation of our estimates and the evaluation of their magnitude with respect to their relevant benchmark. ORs greater than one imply a positive correlation between the variable and the termination of contracts, whereas ORs below one indicate the opposite. Robust to heteroskedasticity standard errors are presented in parentheses for model (1). Model (2) presents standard errors clustered by service, whereas other models present errors clustered by country. The latter is considered the preferred model and is used in model (5) which includes the sub-sample of municipal governments.

The specification test *linktest* test was performed in order to identify specification errors. The test shows satisfactory outcomes in all models presented. Variance inflation factors and pair correlation matrix were also examined, and these tests did not raise concerns about multicollinearity. High pair correlation (72%) was only found between the *Energy* and *LegalOrGer* variables. (see correlation matrix in Table A2). This is attributable to the fact that most re-municipalizations in the energy sector occurred in countries with German legal

origins (mainly Germany). The influence of this correlation is discussed in the context of our other results below.

Our full sample models (1-4) display very stable results. Population is positively correlated with contract termination, confirming H1. This result is consistent across models. The *Network* variable shows consistent results with OR values of 2, indicating that termination is twice as likely in network services compared to all others. Given our competing hypotheses regarding the *Network* variable (transaction costs versus monopoly characteristics) this result points to the strength of the latter. This leads us to accept H2 (instead of H3) and conclude that concerns about the monopoly property of network services, which are associated with a higher probability of termination, outweigh the influence of transaction costs which in theoretical terms may discourage contract termination.

Table 2. Logistic regression estimates. Coefficients transformed into Odds Ratios.

	Full Sample (1, 2, 3,4)				Municipal Sample (5)
	(1)	(2)	(3)	(4)	(5)
Ln_Pop	1.287***	1.287***	1.287***	1.268**	1.238***
	(0.0639)	(0.0724)	(0.1165)	(0.1181)	(0.0896)
Network	2.036**	2.036**	2.036*		
	(0.5083)	(0.5473)	(0.7617)		
Energy				0.2885**	0.1205***
				(0.1495)	(0.0525)
Water				2.917***	2.739***
				(1.015)	(0.8687)
Municipal	2.468***	2.468***	2.468***	2.009**	
	(0.7705)	(0.7756)	(0.6273)	(0.5069)	
LegOrUK	3.178***	3.178***	3.178***	3.621***	2.324*
	(.7705)	(0.5227)	(1.311)	(1.480)	(1.142)

LegOrGer	0.740	0.740	0.740	2.054**	2.255*
	(0.1927)	(0.5309)	(0.3773)	(0.7611)	(1.076)
LegOrScan	2.268**	2.268**	2.268*	2.517**	1.961
	(0.8872)	(0.9228)	(1.061)	(1.084)	(1.133)
Clusters	No	Yes (Service)	Yes (Country)	Yes (Country)	Yes (Country)
# observations	747	747	747	748	485
Average VIF	1.25	1.25	1.25	1.63	1.44
Log.likelihood	-363.41	-363.41	-363.41	-352.32	-261.77
Wald Chi2	132.15***	-	1044.65***	897.54***	647.98***
Pseudo R2	0.17	0.17	0.17	0.19	0.15

Note: *** Statistical significance at 1%, ** at 5% and * at 10%.

In models (1) to (3) one observation is lost because one year-specific binary variable predicts failure perfectly. All models include year-specific binary variables.

When we substitute the *Network* variable with separate variables for the energy and water sectors model (4), we find evidence of different effects in both sectors. Our results indicate that energy is negatively associated with contract termination whereas the opposite holds for the water sector. These results confirm both H5 and H2. The probability of contract termination is positively associated with the network characteristics of the water sector. In addition, the degree of association with contract termination is greater in the water sector which has stronger monopoly characteristics (compared to energy). In terms of magnitude, we find that re-municipalizations in water services are almost three times (2.9) more likely to occur through contract termination, relative to other services (excluding energy). On the other hand, re-municipalization in the energy sector is over three times (0.28) less likely to happen through contract termination relative to all other sectors (excluding water). This means that re-municipalizations in water services are six times more likely to occur through terminating the contract compared to re-municipalizations in the energy sector.

Legal origins are also found to be associated with re-municipalization by contract termination (compared to expiry). Our results indicate that in common law countries and those included in the Scandinavian legal origin, remunicipalizations are more strongly associated with terminated contracts compared to civil law countries (French legal origin), consistent with H4. The evidence suggests that common law countries are over three times more likely to terminate contracts whereas Scandinavian legal origin countries are over twice as likely to re-municipalize by termination compared to the French legal origin.

These results are consistent across models with small changes in odds ratios recorded when the *Network* variable is replaced by the two main sector variables: *Energy* and *Water*. However, it is worth noting that the difference between German and French legal origin countries is not found to be statistically significant in models (1) to (3) although model (4) does find a positive correlation at the 5% significance level.

We test whether this change may occur due to the high pair correlation between this variable and the binary variable *Energy*. Our model is run twice excluding each of the variables one at a time. We find that when the *Energy* variable is excluded the coefficient associated with *LegOrGer* variable retains its non-statistical significance. However, the coefficient of the *Energy* variable maintains its statistical significance when the variable *LegOrGer* is excluded. This result suggests that the statistical significance of the *LegOrGer* variable in model (4) is due to this pair correlation. Average variance inflation factors remain small even when the two coincide in the same model (1.63, and 1.44; see bottom row in table Y). All other ORs remain mostly unaffected when we exclude either of these two variables.

Finally, we find that re-municipalizations led by municipal governments are more than twice as likely to be associated with contract termination. As this result is consistent across models 1-4 we investigate further to explore the apparently distinctive role of government at the municipal level. Hence, we replicate model (4) (our 'preferred' model') using the restricted

subsample of re-municipalizations led by municipal governments. Although this restriction reduces the number of observations it permits a robust analysis.

Our results, (see model 5), show consistency with the variables examined in the full sample analysis with the exception of the role of legal origins. The Scandinavian legal origin is not statistically significant in this model. Although common law legal origin still shows a large OR (2.3) the magnitude of this effect is smaller compared to models 1-4. Moreover, the precision of this estimate is lower (statistically significant at the 10% level). The same applies to the German legal origin, but we re-emphasize that if *Energy* is excluded this variable would not be statistically significant. Thus, only common law countries seem to differ from civil law countries in this subsample. We conclude therefore that legal origins have less influence on how municipal governments re-municipalize compared to supra-municipal governments.

Our other hypotheses are confirmed in this smaller sample, with population and water services found to be positively correlated with the termination of contracts whereas *Energy* is negatively correlated. Note that the OR related to *Energy* is now even smaller, while the one related to Water services remains very similar to that obtained in the full sample analysis.

Discussion

This paper contributes to the literature on the implementation of re-municipalization policies. Specifically it focuses on the factors that influence whether re-municipalization occurs through contract termination or expiration and the analysis produces a number of noteworthy results. We consistently find confirmation of the hypothesis that re-municipalization through contract termination is positively associated with municipality size, a finding that is

consistent with the growing volume of case based evidence of re-municipalization in large cities such as Paris, Atlanta and Hamburg (Kishimoto and Petitjean, 2017).

Our findings also highlight the importance of service characteristics and market failure. It is particularly noteworthy that terminations are more probable when services reside in sectors with strong monopolistic characteristics and a strong public interest dimension especially the water sector. This finding lends empirical support to the documented evidence on re-municipalization, which illustrates how disappointment with the results of privatization policies has given impetus to the restoration of the public interest approach that emphasizes the importance of market failures. For example, dissatisfaction with high prices and poor service quality led to campaigns for re-municipalization (through termination and expiration) in Berlin, Hamburg, Stuttgart, Bremen and Frankfurt. High prices and poor transparency around pricing practices have also been important factors in the re-municipalization of water services in France (Hall, Lobina, Terhorst, 2013). These examples, together with the evidence drawn from empirical studies (Chong, Saussier and Silverman, 2015; Porcher, 2017) represent a forceful challenge to the theories of government failure that underpinned pro-privatization recommendations. They highlight the ongoing relevance of public interest perspectives, especially market failure arguments (Bel, 2020).

We find evidence of the importance of legal traditions, which indicate that re-municipalization through termination, is less probable in civil law countries (French Legal origin). This finding should be viewed in terms of the view that the relationship between expropriation and legal traditions is nuanced (Gomez-Ibanez, 2003). Nonetheless our finding is consistent with studies showing that legal regulation of contracts for public service delivery tend to offer stronger guarantees to private investors in civil-law countries compared to other legal regimes (Albalate, Bel, Bel-Piñana and Geddes, 2015; Bel, Bel-Piñana and Rosell 2017).

Our study also produces findings with a noteworthy historical resonance. The rationale for hypothesis 5 (contract termination is positively related to water services and negatively related to energy services) is justified with reference to the historical literature on municipalization in both Europe and the US in the period around the turn of the twentieth century. The confirmation of this hypotheses suggests a symmetry between oscillations from privatist to public paradigms observed at the turn of both the twentieth and twenty-first centuries. In both periods the probability of expropriation (termination) was greater in water services (compared to energy) and evidence from both periods highlight the influence of public interest and market failure concerns in this regard.

More generally, the private sector was the main actor when local public services initially expanded in many countries, for most of the nineteenth century. However, growing concerns about aspects such as accessibility and affordability created dissatisfaction with private production. As market failures gained emphasis in the policy process, the public sector became more involved in the delivery of public services around the turn of the twentieth century. For most of that century, the strength of public interest arguments prevailed, but a shift occurred in the mid-1970s as concerns over government failures (e.g. inefficiency of public production) increasingly influenced the policy process thereby encouraging privatization policies. Several decades after the privatization wave commenced, dissatisfaction with outcomes of private solutions became relevant, particularly in those sectors with stronger monopolistic characteristics where higher prices are paid under private management. Renewed emphasis on market failures has led to support for re-municipalization policies. However, more time is required to allow a fuller assessment of whether this renewed impetus is a hype or a trend (Clifton et al., 2021).

Conclusion

Unlike most of the empirical literature on insourcing of public services, which mainly focus on the adoption decision, we examine how governments choose between terminating contracts versus letting them expire in order to implement re-municipalization. Our findings are therefore of relevance to the developing literature on re-municipalization as well as the established works on expropriation in the context of regulatory reform and disputes.

We note that our data has limitations such as the under-representation of regions including Asia and Africa. Caution should therefore be applied when generalizing findings beyond the sample. As more data becomes available, there should be opportunity for further investigation into aspects of re-municipalization studied in this paper. For example, there is scope for improving our understanding of the relationship between contract termination and private company characteristics, including foreign ownership.

Our study also points to the potential for further research into the implementation of re-municipalization policies. This is an important gap in the literature because policy implementation can influence outcomes such as the sustainability (i.e. how long they last) of decisions such as contracting in and contracting out (Albalate Bel and Reeves, 2021; Damanpour, Magelssen and Walker, 2020).

Overall, our findings are consistent with the most influential narratives on choices regarding expropriation and the type of public intervention in previous re-municipalization processes. In this sense, our research sheds light on the explanatory power of re-municipalization theories and suggests that some sort of historical recurrence is playing out. Whether future empirical studies of re-municipalization confirm the results of our analysis remains to be seen. However, they do point to interesting directions for future research on the dynamics of public sector reform.

References

Albalate D and Bel G (2021) Politicians, bureaucrats and the public–private choice in public service delivery: anybody there pushing for remunicipalization? *Journal of Economic Policy Reform* 24(1): forthcoming doi:10.1080/17487870.2019.1685385

Albalate D, Bel G, Bel-Piñana P and Geddes R.R. (2015) Risk mitigation and sharing in motorway PPPs: a comparative policy analysis of alternative approaches. *Journal of Comparative Policy Analysis* 17(5): 481-501.

Albalate D, Bel G and Reeves E (2021) *Easier said than done: Understanding the implementation of re-municipalization decisions and associated delays*. *Public Management Review*, forthcoming doi: 10.1080/14719037.2021.1877795

Andrews R, Ferry L, Skelcher C and Wegorowski P (2020) Corporatization in the Public Sector: Explaining the Growth of Local Government Companies. *Public Administration Review* 80(3): 482-493

Barraqué B and Kraemer RA (2014) Les services publics d'eau en Grande-Bretagne et en Allemagne: origine commune, trajectoires différentes. *Flux* 97-98(3): 16-29.

Bel G (2013) Local government size and efficiency in capital intensive services: What evidence is there on economies of scale, density and scope? In: Lago-Peña S and Martínez-Vázquez J (eds) *The challenge of local size*. Cheltenham: Edward Elgar, pp. 148-170.

Bel G (2020) Public versus private water delivery, remunicipalization and water tariffs. *Utilities Policy* 62 (100982), 1-8.

Bel G, Bel-Piñana P and Rosell J (2017) Myopic PPPs: Risk allocation and hidden liabilities for taxpayers and users. *Utilities Policy* 48: 147-156.

Bel G and Fageda X (2017) What have we learned from the last three decades of empirical studies on factors driving local privatisation? *Local Government Studies* 43(4): 503-511.

Bel G and Sebő M (2021) Does Inter-Municipal Cooperation Really Reduce Delivery Costs? An Empirical Evaluation of the Role of Scale Economies, Transaction Costs, and Governance Arrangements. *Urban Affairs Review* 57(1), 153-188

Brown TL and Potoski M (2003) Managing contract performance: A transaction costs approach. *Journal of Policy Analysis and Management* 20(2): 275–297.

Brown TL and Potoski M (2005). Transaction costs and contracting: The practitioner perspective. *Public Performance and Management Review* 28(3): 326-351.

Campos-Alba CM, De La Higuera Molina EJ, Pérez-López G and Zafra-Gómez JL (2021) Drivers of contracting back in local governments: analysing efficiency, opportunistic political cycles, political corruption and financial factors, *Journal of Economic Policy Reform* forthcoming doi.org/10.1080/17487870.2019.1689359

Casado-Pérez V (2017) *The Role of Government in Water Markets*. Abingdon: Routledge.

Clifton J, Warner ME, Gradus R and Bel G (2021) Re-municipalization of public services: trend or hype? *Journal of Economic Policy Reform* 24(1): forthcoming doi:10.1080/17487870.2019.1691344

Chong E, Saussier S and Silverman B (2015) Water Under the Bridge: Determinants of Franchise Renewal in Water Provision. *Journal of Law, Economics and Organization* 31(suppl. 1): i3–i39.

Damanpour FC, Magelssen R and Walker M (2020) Outsourcing and insourcing of organizational activities: the role of outsourcing process mechanisms. *Public Management Review* 22(6): 1–24.

den Hertog JA (2010). *Review of economic theories of regulation.* Discussion Paper Series 10(18). Tjalling C. Koopmans Research Institute

Díaz GR (2020) What drives the failure of private participation in infrastructure projects? *International Journal of Managing Projects in Business* 13(6): 1167-1185.

Foged SK (2016) The relationship between population size and contracting out public services: Evidence from a quasi-experiment in Danish municipalities. *Urban Affairs Review* 52(3): 348-390.

Gómez-lbáñez JA (2003) Regulating infrastructure. Monopoly, contracts and discretion. Cambridge MA: Harvard University Press.

Gradus R, Budding T. (2020) Political and Institutional Explanations for Increasing Re-municipalization. *Urban Affairs Review* 56(2): 538-564.

Gradus R, Schoute M and Budding T (2021) Shifting modes of service delivery in Dutch local government, *Journal of Economic Policy Reform* 24(1): forthcoming doi: 10.1080/17487870.2019.1630123

Hall D 2012. *Re-municipalising Municipal Services in Europe*. University of Greenwich: Public Services International Research Unit.

Hall D, Lobina E and Terhorst, P (2013) Re-municipalisation in the early twenty-first century: water in France and energy in Germany. *International Review of Applied Economics, 27*(2): 193-214.

Hefetz A and Warner M (2004) Privatization and its Reverse: Explaining the Dynamics of the Government Contracting Process. *Journal of Public Administration Research and Theory* 14(2): 171-190.

Hefetz A and Warner M (2007) Beyond the Market Versus Planning Dichotomy: Understanding Privatisation and its Reverse in US Cities. *Local Government Studies* 33(4): 555-572.

Hefetz A and Warner M (2012) Contracting or Public Delivery? The Importance of Service, Market and Management Characteristics. *Journal of Public Administration Research and Theory* 22(2): 289-317.

Hirschman AO (1982) *Shifting involvements: private interest and public action*. Princeton NJ: Princeton University Press.

Jacobson CD (2000) *Ties that bind. Economic and political dilemmas of urban utility networks 1800-1990*. Pittsburgh PA: University of Pittsburgh Press.

Kickert WJ (2005) Distinctiveness in the study of public management in Europe: A historical-institutional analysis of France, Germany and Italy. *Public Management Review* 7(4): 537-563.

Kishimoto S and Petitjean O (2017) *Reclaiming Public Services: How Cities and Citizens are Turning Back Privatisation.* Amsterdam: Transnational Institute.

Kishimoto S, Steinfort L and Petitjean O (2020) *The Future is Public: Towards Democratic Ownership of Public Services*. Amsterdam: Transnational Institute.

La Porta R, Lopez-de-Silanes F and Shleifer A 2008. The economic consequences of legal origins. *Journal of Economic Literature* 46(2): 285–332

Lough AW (2016) The Politics of Urban Reform in the Gilded Age and Progressive Era, 1870–1920. *American Journal of Economics and Sociology* 75(1): 8-22.

Millward R (2007) La distribution de l'eau dans les villes en Grande Bretagne au XIXe et XXe siècles : le gouvernement municipal et le dilemme des compagnies privées. *Histoire, économie & société* 26(2): 111-128.

Olmstead SM (2010) The Economics of Water Quality. *Review of Environmental Economics and Policy* 4(1): 44-62

Peterson JM and Hendricks N (2016). Economics of water. In; K. Conca K and Weinthal E (Eds.), *The Oxford handbook of water politics and policy*. Oxford: Oxford University Press, pp. 351-376

Pezon C (2012) Public-private partnerships in courts: the rise and fall of concessions to supply drinking water in France, 1875-1928. In: Barraqué B (ed) *Urban Water Conflicts*. London: UNESCO-IHP. CRC Press. Taylor & Francis, pp. 57-68.

Porcher S (2017) The 'hidden costs' of water provision: New evidence from the relationship between contracting-out and price in French water public services. *Utilities Policy* 48: 166-175.

Rodrigues M, Tavares AF and Araújo JF (2012) Municipal service delivery: The role of transaction costs in the choice between alternative governance mechanisms. *Local Government Studies* 38(5): 615-638.

Sappington DE and Stiglitz JE (1987) Privatization, information and incentives. *Journal of Policy Analysis and Management*, 6(4): 567-585.

Schoute M, Budding T and Gradus R (2018) Municipalities' choices of service delivery modes: The influence of service, political, governance, and financial characteristics. *International Public Management Journal* 21(4): 502-532.

Schoute M, Gradus R and Budding T (2021) Drivers of service delivery modes in Dutch local government: an analysis over time and across domains. *International Review of Administrative Sciences*. doi:10.1177/0020852320968906

Shaw FC (1998) Reconciling two legal cultures in privatizations and large-scale capital projects in Latin America. *Law and Policy in International Business* 30: 147-160.

Stiglitz JE (1986) *Economics of the public sector*. New York: W. W. Norton & Co.

Troesken W and Geddes R (2003) Municipalizing American waterworks, 1897-1915. *Journal of Law, Economics & Organization* 19(2): 373-400.

Warner M and Aldag A (2021) Re-municipalization in the US: A Pragmatic Response to Contracting. *Journal of Economic Policy Reform* 24(1): forthcoming doi.org/10.1080/17487870.2019.1646133

Warner ME and Hefetz A (2020). Contracting dynamics and unionisation: managing labour, contracts and markets. *Local Government Studies* 46(2): 228-252.

Williamson OE (1979) Transaction-Cost Economics: The Governance of Contractual Relations. *Journal of Law and Economics* 22(2): 233-261.

Wollmann H (2018) Public and Personal Social Services in European Countries from Public/ Municipal to Private—and Back to Municipal and "Third Sector" Provision. *International Public Management Journal* 21(3): 413-431.

APPENDIX

Table A-1: Distribution by countries, sectors and affected population in the corresponding jurisdictions.

Country	Total Cases	Energy	Water	Waste	Transport	Telecom	Health	Other	Population affected (Million)	% Country Population (2020)
Germany	409	254	20	11	0	36	2	86	43.8	52.3%
United States	231	11	71	0	0	143	2	4	18.6	5.6%
France	156	1	109	2	25	0	0	19	12.9	19.8%
Spain	119	18	39	6	8	0	1	47	19.9	42.6%
United Kingdom	109	13	2	14	14	7	5	54	47.3	69.7%
Canada	51	0	8	7	6	2	14	14	21.1	55.9%
Chile	44	0	0	0	0	0	40	4	4.8	25.1%
Norway	42	0	0	18	0	0	1	23	4.9	90.4%
Denmark	35	3	0	13	1	0	3	15	4.5	77.7%
Netherlands, The.	25	3	0	3	3	7	0	9	6.9	39.8%
Philippines	21	1	7	1	0	0	2	10	3.5	3.2%
Japan	18	3	0	0	0	0	2	13	9.0	7.1%
Malaysia	16	0	1	0	1	1	0	13	6.5	20.1%
Austria	10	0	0	0	4	0	0	6	1.8	20.0%
Other (45)	120	13	58	4	4	0	6	35	320.1	n.a.
Total	1406	320	315	79	66	196	78	352	525.6	n.a.

Notes:

The countries not shown in the table are: Argentina, India, Sweden, Australia, Italy, South Korea, Belgium, Brazil, Egypt, Finland, Hungary, Portugal, Turkey, Colombia, Indonesia, Kazakhstan, Nepal, South Africa, Ukraine, Bolivia, Czech Republic, Greece, Mexico, Mozambique, Russia, Venezuela, Albania, Bulgaria, Central African Republic, Ecuador, Guinea, Honduras, Lebanon, Lithuania, Luxembourg, Montenegro, México, New Zealand, Nicaragua, Paraguay, Peru, Tanzania, Uganda, Uruguay, Uzbekistan.

The figure of population affected in other countries is largely driven by 13 operations in India, Egypt, Brazil, Argentina, Colombia, Indonesia and South Korea, affecting 247 million inhabitants.

Source: Authors', based on Kishimoto and Petitjean (2017) and Kishimoto, Steinfort and Petitjean (2020).

Table A2. Correlation matrix.

	Ln_Pop	Network	Energy	Water	Municipal	LegORUK	LegORGer	LegORScan
Ln_Pop	1							
Network	-0.36	1						
Energy	-0.34	0.47	1					
Water	-0.10	0.58	-0.39	1				
Municipal	-0.04	-0.11	-0.30	0.16	1			
LegOrUK	0.20	-0.14	-0.29	0.07	0.15	1		
LegOrGer	-0.19	0.25	0.72	-0.38	-0.25	-0.37	1	
LegOrScan	0.01	-0.32	-0.16	-0.19	0.11	-0.16	-0.19	1

Figure A-1. Number of remunicipalization operations in each country (n=59)