"Easier said than done: Understanding the implementation of re-municipalization decisions and associated delays."

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Abstract

In recent years there has been growing evidence of a reversal of earlier privatizations at the municipal level. We use data on over 800 cases of re-municipalization worldwide to examine propositions drawn from theory on the choice between public versus private sector delivery and policy implementation. We find that sectors with strong network characteristics are associated with lower probabilities of implementation. Also, it takes longer to implement re-municipalization policies in network sectors. On the other hand, re-municipalization is more likely to be implemented and implemented faster in the case of personal services including health and education. The results do not find that greater clarity about re-municipalization policy is associated with the level of implementation. There is some support for the hypothesis that the quality of government is positively associated with the probability of implementing policy but not the time taken to complete the task. However, other institutional factors such as legal traditions are found to be significant determinants of policy implementation and its finalization. The great recession was found to have increased the probability of implementing reforms and there is some evidence of faster implementation in the post-recession period. However, we fail to find evidence that policy implementation is more efficient over time and policy learning in this regard is not evident.

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Introduction

In recent years there has been growing evidence of a reversal of the widespread trend towards privatization that took hold in the late 1980s and 1990s. Reverse privatization and nationalization has occurred at the level of state-owned enterprises (SOEs), municipal enterprises and local government (sometimes municipal) services. At the level of SOEs the global financial crisis and subsequent great recession led to significant levels of nationalization especially in the financial sector. Voszka (2017) estimated that between 2007 and 2009 the value of nationalization was in the range of $230-$325 billion and that the nationalization of assets and companies gained momentum after the crisis. Various methods have been used to implement these changes including the re-purchase of privatized assets (e.g. the energy system in Lithuania) as well as increasing state ownership by 'silent methods' including increased public stakes in partly privatized companies (e.g. France and Germany)

At the local level evidence has gradually emerged of numerous cases of reverse privatizations where local services are returned to public production thereby ending privatization arrangements such as contracting out, concessions and public-private partnerships (PPPs). Such reversals of earlier privatization measures are commonly referred to as 're-municipalization' and include high-profile cases such as Atlanta and Paris where concessions for water supply were terminated in 2003 and 2010 respectively. In addition, there have been several cases of municipalization where local governments establish new municipal companies in liberalized markets. For example, in the German energy sector, 63 new *stadtwerke* (local public utilities) were established between 2007 and 2012 (Hall, 2012).[1]

Recent data provided by Kishimoto and Petitjean (2017) provides evidence of over 800 cases in over 40 countries where it was decided to return services to municipal control since the early 2000's. That data shows that the decision to re-municipalize may or may not be implemented. Moreover, where decisions are implemented there is significant variation in the period between the decision and implementation across cases. The time taken to implement re-municipalization decisions can have important implications for public policy as protracted durations are suggestive of obstacles to the achievement of policy objectives. In economic terms, guiding decisions through the implementation process is likely to create non-trivial transaction costs and consequent efficiency losses.

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[1] This was a noteworthy development as Germany and Frances were European pioneers in terms of encouraging private management of the electricity sector (Battaglio and Legge, 2009, p. 700).

In this paper we use the data provided by Kishimoto and Petitjean (2017) to empirically examine two key questions concerning the re-municipalization phenomenon. First, we examine the factors that explain whether re-municipalization was effectively (fully) implemented, or not. Second, we also examine the lag between the decision to re-municipalize and full completion of the re-municipalization process. As this decision involves, in most cases, the reversal of an earlier decision to privatize it is likely to result in subsequent negotiation around issues such as contracts, property rights and organizational change, which can influence the duration of the implementation period.

Whether the practical implementation of the decision is relatively straightforward or protracted is an issue that has received little attention in the literature. We are not aware of other studies that deal with the implementation of re-municipalization decisions. We address the issue by utilizing the data to explore the factors that determine the effective implementation, and the duration of implementation when it happened.

Our paper makes two significant contributions to the existing literature. On one hand, it provides new analysis and insights on the effectiveness of re-municipalization, which is still an under-researched topic. On the other, it provides new, robust empirical evidence on the issue of policy implementation and the factors that explain delays between deciding and finalizing public policy reform. Our analysis utilizes a novel international data set, which provides the opportunity to adopt an empirical approach that sheds light on differences between countries in terms of the implementation of policies that are bringing about significant changes in the ownership and production of public services worldwide.

Related Literature

Our analysis builds on two different strands of the literature: (1) public versus private choice for public service delivery and (2) policy implementation. The following sections discusses how we use these strands to frame our analysis.

Public versus private choice for delivery of public services

The literature on factors explaining privatization and its effects has grown extensively since the early 1980s as more robust theoretical and empirical approaches were used to analyze privatization. Seminal works by Donahue (1989) and later studies by Brown and Potoski (2003, 2004), Hefetz and Warner (2012) and Levis and Tadelis (2010) have shown that privatization will be more likely if transaction costs are low and if quality is measurable and not crucial for policy

makers. While fiscal constraints and partisan political interests are drivers of privatization, ideology tends not to be a key factor for technical public services -such as waste collection, wastewater, etc. (Bel and Fageda, 2007, 2009, 2017). However, ideology is found to be more relevant for social services more closely related to welfare mechanisms -such as education, elder care and child care (i.e. Elinder and Jordahl, 2013; Petersen, Houlberg and Christenssen, 2015; Guo and Willner, 2017).[2]

Our analysis of drivers of re-municipalization draws from the existing literature on privatization but robust multivariate studies in this literature are still scarce. Preliminary multiservice studies for the US find reverse privatization to be a pragmatic decision (Hefetz and Warner, 2004, 2007, 2012) with politics or ideology having little influence (Warner and Aldag, forthcoming). Several studies based on European countries have been published in recent years. In the water sector, Chong, Saussier and Silverman (2015) find that prices tend to be higher under private management and this can explain re-municipalization in large municipalities with overpriced services, while ideology does not appear to be relevant. Campos-Alba et al (2017) analyze several local services in Spain. They find that technical services are less frequently re-municipalized compared to personal/social services, and also that re-municipalization decisions do not appear to be ideologically driven. However, Gradus and Budding (forthcoming) study re-municipalization of solid waste collection in the Netherlands and find that ideological factors have some albeit limited influence.

Other literature covering public and private choices for service delivery has analyzed the delays in the tendering processes in public-private partnerships (PPPs). Complex procurement models such as PPP are characterized by lengthy tendering periods that can impact public sector investment efficiency and impose higher social costs on citizens (HM Treasury, 2010, KPMG, 2010; CCPPP, 2015). Reeves et al. (2015, 2017) used duration analysis to examine the extent to which PPP tendering periods in Ireland and the United Kingdom are explained by factors such as project size (i.e. capital value), project sector, procurement authority, and the timing of contract notice. They found that Irish tendering periods have decreased over time but were not significantly associated with project capital value (Reeves et al., 2015). UK evidence suggests substantial sectoral variation, and projects with higher capital values, as well as those overlapping with general elections, were also associated with significantly longer tendering periods, after controlling for other factors (Reeves et al., 2017). Further evidence on Canada (Casady et al,

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[2] This is consistent with data in Battaglio (2009) showing that by mid 1990s privatization enjoyed stronger opposition in personal-services sectors such as hospitals, than in technical services such as electricity.

forthcoming) find that tendering periods in Canadian PPPs are slower when risk transfer is important, and faster with administrative efficiency.

These studies show that the lag between deciding and implementing new forms of public service (or asset) production or delivery can vary across jurisdictions and can depend on institutional arrangements, legal frameworks, political commitments, and financial factors. Such issues have not been examined in the context of re-municipalization. This gap in the literature is addressed in this paper. Based on the existing theory and evidence on public versus private choice of public service delivery, we formulate the two following hypotheses.

H_1: Effective implementation and speed of re-municipalization is negatively related to technical services characterized by greater asset specificity and higher transaction costs.

H_2: Effective implementation and speed of re-municipalization is higher in social/personal than in technical services, as ideological factors can be more influential and give more strength to the policy.

Public policy implementation.

Implementation is an important part of the policy process (Lane, 1987, Winter 2006). Research on the implementation of public policies gained momentum after the seminal work by Pressman and Wildasvky (1973) which was based on cases of implementation failures and was soon followed by increasing emphasis on the need for more theory-building (Van Meter and Van Horn, 1975). Subsequent studies such as those by Sabatier and Mazmadian (1979, 1980) in the US and Hogwood and Gunn (1984) in the UK laid the theoretical foundations for the top-down approach to analyzing public policy implementation. This approach focuses on upper-level policy making and an influential articulation of its main characteristics can be found in O'Toole (1986). However, other scholars (Elmore 1979; Lipsky, 1980; Hull and Hern, 1987) challenged the up-down approach and suggested a bottom-up approach, which places a special focus on street-level bureaucracy for the analysis of implementation of public policies.

More recent research on policy implementation has sought to overcome the contradictory duality between the top-down and bottom-up approaches. Particularly influential in that regard has been the work by Winter (2006) which calls for de-emphasizing the analysis of goal achievement and outcomes, more related to policy evaluation, and instead places a stronger focus on the analysis of implementation outputs; that is whether the policy has been effectively implemented, and the variation in outputs. In this way, the de-limitation of implementation outputs follows Montjoy

and O'Toole's (1979) distinction between implementation as decisions made in carrying out a policy, and impact as the effect on the ultimate target. It also followed O'Toole's (2000) later position that implementation refers to the completion of actions needed to carry out a policy, that is, before efforts to evaluate it impacts and social effects -implementation outcomes- (Hill and Hupe 2014; Sætren and Hupe, 2018). In this way, the precursory suggestion by Lane (1983, 1987) that the real issue was not to evaluate if implementation was successful (outcomes), but rather if it was effective, has gained much ground.

Following that path, Winter (2006:156) suggests an Integrated Implementation Model, which, rather than a causal model, is a framework of analysis that presents crucial factors affecting outputs and permits specification of hypotheses that can be empirically tested. Emphasis on outputs as dependent variables as suggested by Winter helps to connect implementation analysis with empirical research (Hupe, Hill and Nangia, 2014).

Promoting further (and more robust) empirical analysis of policy implementation has been a widespread recommendation in the literature, based on early studies by Goggin (1986, 1987), and Goggin et al (1990). Recent studies (e.g. Hupe and Sætren, 2015: 94-95; Sætren, 2014:86) have identified a number of desirable features of empirical research, specifically: 1) Clearly defined variables (dependent as well as independent); 2) Theoretically derived hypotheses; 3) Use of statistical analysis with quantitative data; 4) More comparison across policy sectors and units of analysis and; 5) Longitudinal research. Furthermore, Hupe and Sætren (2015: 96) add that cross-national comparison is especially important to furthering the development of theory in implementation research.

These are precisely the features of the empirical exercise we undertake for this paper, in which we consider the effective implementation of government control of service delivery as the policy output and delays in implementing the policy as the variation in policy outputs. Importantly, policy outcomes are not considered as this is beyond the scope of this study. Also, as sufficient data (beyond case studies) is not available we do not evaluate re-municipalization.

Several factors covered in our study are identified in policy implementation research. First, clarity with respect to what needs to be implemented will reduce the variation in interpretation (Matland, 1995), because task ambiguity is negatively related to implementation performance (Montjoy & O'Toole, 1979; Sabatier and Mazmanian, 1979; Mazmanian and Sabatier, 1983; Matland, 1995). Evidence in this regard has been provided by Meier and McFarlane (1995), Keiser and Meier (1996), Chun and Rainey (2005a, 2005b) and Vancoppenolle, Saetre and Hupe (2015). Another relevant factor affecting implementation performance is the quality and

effectiveness of government (Matland, 1995; Bozeman, 2013). In that regard, administrative efficiency will enhance implementation performance whereas procedural complexity will have the opposite effect (Meier and O'Toole, 2009; König and Luetgert, 2009; Toshkow 2010).

Changing economic conditions and external shocks are another factor that can influence implementation performance (Sabatier and Mazmanian, 1979; Matland, 1995). Our research focuses on the impact of the great recession, which in general, raised skepticism about the role of the private sector in the economy and increased the demand for government intervention (Engelen et al. 2011; Grugel and Riggirozzi, 2102; Hodges and Lapsley, 2016; Levy, 2017).We therefore examine how the great recession influenced policy implementation performance in the context of re-municipalization. Finally, another time-related factor is that of policy learning, which can contribute to improve the performance of policy implementation (Sabatier, 1986; McLaughlin, 1987; May, 1992; Sabatier and Jenkins, 1993; Matland, 1995; Moyson, Scholten and Weible, 2017).

Based on the existing theory and evidence on policy implementation, we formulate the four following hypotheses.

H3: Ambiguous definition of policy goals and tasks has a negative effect on the probability of the policy being effectively implemented, and also on the time required for implementation.

H4: Government effectiveness is positively related to the probability of the policy being effectively implemented, and also to the speed of implementation.

H5: Re-municipalization decided after the beginning of the great recession has a higher probability of being effectively and quickly implemented.

H6: The probability of effective implementation and speedy implementation will increase over time due to policy learning.

Empirical Approach

Data

The lack of a reliable database on re-municipalization has been addressed in two recent publications by a coalition of trade unions and other organizations (Kishimoto *et al.*, 2015; Kishimoto and Petitjean, 2017).[3] Our empirical analysis draws on the dataset assembled by

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[3] These publications are made available online by the Transnational Institute (www.tni.org) which describes itself as an "international research and advocacy institute committed to building a just,

Kishimoto and Petitjean (2017), which covers information on 834 cases of re-municipalization worldwide since year 2000. The authors collect data on the country/region/city where it happened, the population affected (inhabitants), the specific service and sector where the re-municipalization was decided, the government level of taking back control (state/province/city) and the private company related to the re-municipalization. Also, there is information on how it occurred (e.g. contract expired, contract was terminated, shares were sold by private operators). In order to establish our main hypotheses, we take particular advantage of the information provided on the timing of re-municipalization. Kishimoto and Petitjean (2017) distinguish between the date of the decision to re-municipalize and the date re-municipalization was actually implemented. This facilitates the determination of the time lapse between decisions and implementations. Furthermore, it allows us to identify those decisions that are yet to be implemented.

Although the dataset includes re-municipalizations in 44 countries, figure 1 shows that the aggregate incidence of re-municipalization is dominated by a few countries, namely, Germany (346), France (152), United States (67) United Kingdom (64) and Spain (56). In sectoral terms, energy (346), water (269) and other local government services (140) rank the highest.

The data shows that in the majority (68 per cent) of cases, re-municipalization occurred following the decision not to renew contracts after they expired.[4] Waiting for existing contracts to expire before (re)municipalizing is to be expected given the high level of costs likely to be incurred if contracts are terminated. Nevertheless, it is noteworthy that contract terminations did occur in 132 (21 per cent) of cases for which data are available with two thirds of terminations occurring in the water services sector. In the remainder of cases (re)municipalization occurred after private companies sold their shares or took the decision to withdraw from contracts. The data also includes a further category labelled de-privatizations. These are defined as decisions to re-municipalize that were taken without a clear indication on how and when this should be executed and they account for 34 cases in the database.

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democratic and sustainable planet". In this dataset, municipalization also includes where governments create a new public service to meet citizen's needs.

[4] The German energy sector accounts for over 64 per cent of cases where re-municipalization occurred after contracts expired.

Figure 1. Frequency of remunicipalizations by country (2000-2017).
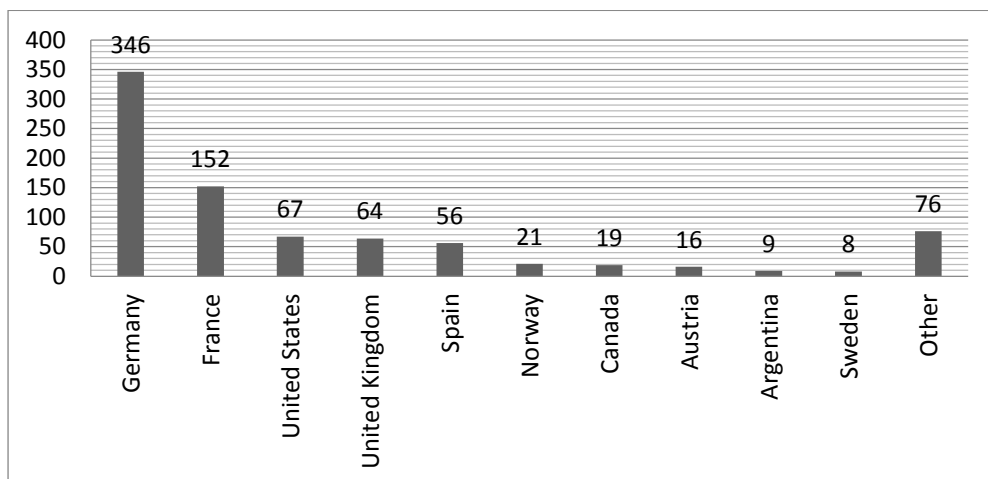
Figure 2. Frequency of remunicipalizations by sector (2000-2017).
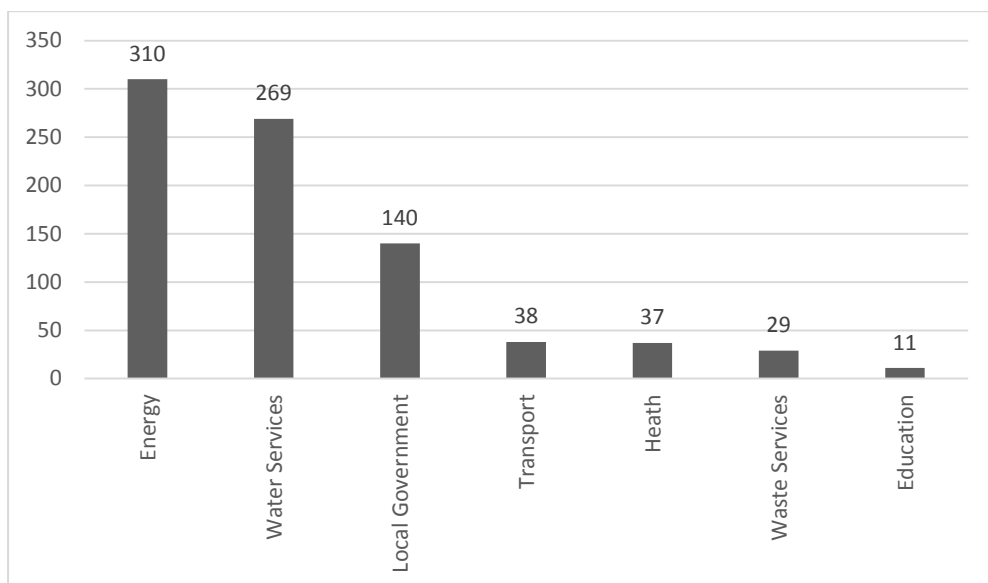
Another interesting feature of our data is the information on the timing of re-municipalizations. Figure 3, which covers all cases between 2000 and the last complete year (2016) in the database, shows that over time, the incidence of decisions to re-municipalize followed an increasing trend. It also shows an important structural change between years 2007 and 2009, which coincides with

the first years of the great recession. The number of decisions prior to 2008 was just 141 (20% of sample), whereas this increased to 566 (80% of sample) between 2009 and 2016.

Importantly, the data shows that just 54% of decisions were actually implemented over the period 2000-2017. The percentage of decisions implemented before 2009 was very low (31%) but this increased significantly thereafter reaching an average of 59% between 2009 and 2017. Focusing on cases where decisions were implemented, the data shows that for the full sample, the average time period between making the decision to implementation e was 1.25 years. Figure 4 shows that while the delays in most cases were concentrated in the two years after the decision several cases experienced significant delays, the maximum of which was 8 years. The average delay does not show any significant change between the pre- and post-great recession.

Figure 3. Time trends of decisions to Re-municipalize.
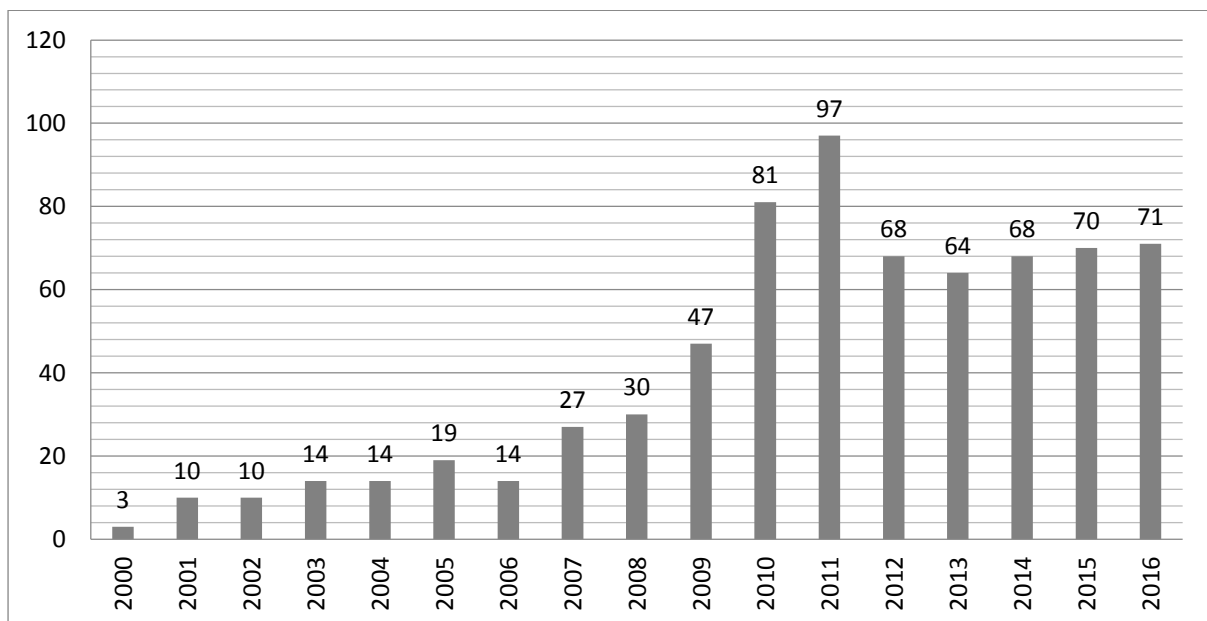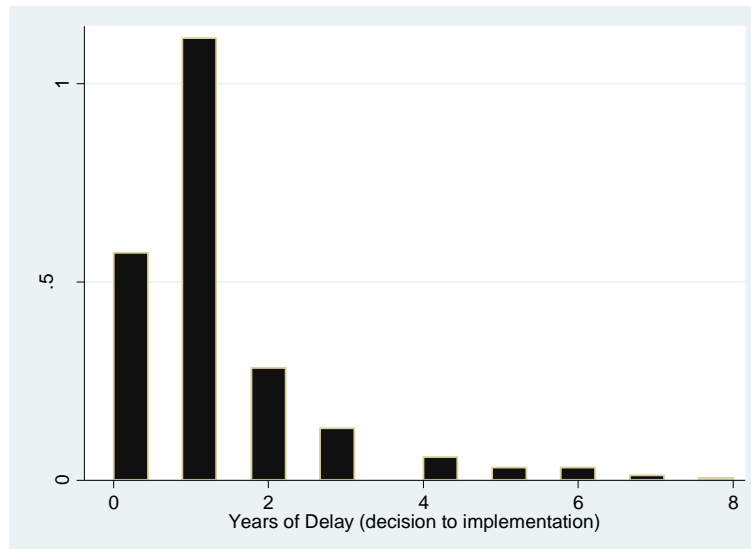

Figure 4. Distribution of implemented re-municipalizations by years of delay since decision.

In order to further examine implementation rates and their delay we provide some descriptive statistics in table 1, which displays rates and delays by economic sector and by the channels through which the re-municipalization was decided. The first three columns focus on the economic sectors, showing that the highest percentage of implemented decisions is found in the energy sector (89%). This is followed by personal oriented services, such as health and education (76% and 64%, respectively). Transportation, waste and other local government services, which may involve technical but also personal services, are the next group (55%, 46% and 45%, respectively).[5] Water, which is generally consider a technical infrastructure-based service presents by far the lowest implementation rate. Regarding delays, we find that the lowest delays are associated with personal services, such as health (0.52 years) and education (0.75 years), followed by other local government services (0.70 years). More technical services seem to take longer to implement with energy (1.57 years), transportation (1.26 years) and water (1.14 years) showing the longest delays.

This analysis can also be replicated focusing on the channel of re-municipalization presented in the last three columns. Public-led decisions enjoy a low implementation rate of 46% and an average delay of 1.28 years. Instead, private-led reasons (namely, the private sector selling shares or withdrawing from the service) show a much higher implementation rate (68%) and a much shorter average delay (0.48 years).

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[5] Other local government services include a miscellanea of activities such as parking, sports, cleaning, security, bike rental, maintenance of public space, housing, funeral services, parks and gardens, municipal crane, sidewalk, contact centers, police station, cinema, school catering, IT services, support services, and human resources.

Table 1. Average rates of implementation and delays

Sector	Implemented	Delay	How	Implemented	Delay
Education	64%	0.75	***Public-led***	48%	1.28
Health	76%	0.52	De-privatization	50%	1.66
Waste	46%	0.93	Expired	53%	1.38
Transportation	55%	1.26	Terminated	28%	0.52
Energy	89%	1.57			
Water	17%	1.14	***Private-led***	68%	0.48
Other services	45%	0.70			

Methods and variables

The empirical approach in this study comprises two different analyses of the implementation of re-municipalization decisions. On the one hand, given the low implementation rate of re-municipalization decisions, we are interested in assessing the factors that determine the probability of implementation. Thus, we consider all decisions in the database and identify whether they have been actually implemented or not. Our dependent variable for this analysis is a binary variable (*Implemented*) which is assigned a value of 1 if decisions are actually implemented and with 0 for those not implemented yet. Because our analysis is based on a probability model with a binary outcome variable, we apply logistic regressions with robust to heteroskedasticity errors, or clustered errors either by country or by economic sector. We transform coefficients into odds ratios (OR) in order to facilitate their interpretation.

On the other hand, we are also interested in evaluating the variables that extend or shorten the delay between the re-municipalization decision and its implementation. This analysis is applied only to the sample of the database in which decisions have been implemented, leaving aside those decisions not implemented. Because our dependent variable follows a distribution similar to count data – (see figure 4) – for which the normality assumption of OLS is not reasonable, we apply negative binomial regressions, for which we also correct errors by clustering them either at country level or by economic sector.

Both approaches use a common set of explanatory variables. First, we use demographic variables such as population (in thousands) and its square, to account for the size effects. The square is introduced in the equation on the probability of implementation in order to capture possible non-linearities between the likelihood of implementation and the size of the jurisdiction when this offers a better fit than including population alone. The variable *Local* is also a binary variable that takes a value of 1 if the government involved in the decision is a local government, and 0 if it is a supra-municipal government.

An important source of variation is the economic sector in which the re-municipalized service belongs. As mentioned above, economic sectors are characterized by different levels of transaction costs that the literature establishes as an important factor in public service reform. As the energy sector has the highest frequency in our data base with more than 300 cases, we use this sector as a reference category when we include all binary variables denoting economic sector. Coefficients are therefore interpreted with reference to the energy sector. However, as we are testing two hypotheses derived from the private-public literature and comparisons it is necessary to go beyond testing with respect to just one sector. To address this when testing H1 we introduce a binary variable denoting economic sectors characterized by network features (high transaction costs). Secondly, to test H2 we introduce a binary variable denoting personal services with 1, and 0 otherwise. Most personal services belong to two sectors: education and health. However, we revised the category 'other local government sectors' to add services such as school catering, local food supply, homelessness and housing advice to personal services (vs. technical services).

The origin of the decision is captured in our specification by incorporating a binary variable assigned a value of 1 if the decision is privately led. This covers cases in which the private sector sold shares or withdrew from the service. This should be interpreted relative to publicly-led decisions including de-privatizations and contracts that expired and were terminated. Privately-led decisions are beyond the boundaries of the public sector decision process but require a public sector response in order to guarantee the delivery of the service. We expect this variable to affect re-municipalization implementation rates and their time efficiency. Furthermore, we test H3 by including a dummy variable denoting a specific group of publicly-led decisions, namely de-privatizations. These decisions are less defined than the all other approaches (terminations, contract expired and private withdrawal). This overarching term includes those cases where the decision to move to public service delivery was made, but no specific action or method was chosen. This connects to the issue of goal and task ambiguity discussed in our theoretical framework that allowed us to establish our third hypothesis (H3).

We also use country-specific dummy variables to distinguish the observations of the most frequent countries in the dataset: Germany, France, United States and United Kingdom. This may offer insights into the average behavior of decisions in these countries relative to all other countries. We explore inter-country differences further by including several institutional variables at country level in order to test H4. The first of these variables is a proxy for government effectiveness, obtained from the database of the Quality of Government Institute (University of

Gothenburg). The second is a variable indicating the country-specific regulatory burden (from several editions of the Annual Global Competitiveness Report published by the World Economic Forum). We expect opposite outcomes from these two variables. Government effectiveness should be expected to increase implementation rates and reduce the time lapse between decisions and implementations. However, regulatory burden should be expected to hinder both the implementation of decisions and the time efficiency in executing them. The other institutional binary variables included indicate the legal origin of the country's administration. We use the classification by La Porta, López de Silanes and Shleifer (2008) to distinguish the German, British, French and Scandinavian legal origins of the countries included in our dataset.[6]

Finally, the effects of time are captured by two different strategies. First, we introduce a binary variable that distinguishes the period before the great recession (until 2007) and the period after the great recession (from 2008) to test H5. After this approach we substitute the binary variable by specific year dummies for each year, which is a preferred strategy as it enables us to account for trend effects and year-specific shocks. This last strategy also allows us to evaluate H6, as it is expected to capture the learning process over time. Table 2 displays the descriptive statistics of the variables employed.

Table 2. Descriptive statistics of variables employed.

Variable	Mean	Std dev.	Min	Max
Implemented	0.55	0.50	0	1
Delay	1.26	1.32	0	8
Population	580.30	120.94	0.269	72,147
Local	0.60	0.49	0	1
Energy	0.33	0.47	0	1
Education	0.01	0.11	0	1
Health	0.04	0.20	0	1
Transportation	0.04	0.20	0	1
Waste	0.04	0.20	0	1
Water	0.28	0.45	0	1
Other	0.15	0.36	0	1
Privately_led	0.05	0.22	0	1
Recession	0.88	0.33	0	1
Network	0.61	0.49	0	1
Personal	0.08	0.27	0	1
Gov_effective	1.59	0.67	-1	2
Regulation	-3.21	0.48	-5	-1.9
German_legor	0.45	0.49	0	1
French_legor	0.31	0.46	0	1
British_legor	0.20	0.40	0	1
Scandiv_legor	0.05	0.21	0	1

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[6] Note we do not have countries with socialist legal origins in our sample.

Results

Probability of Implementing Re-municipalization Decisions

Table 3 displays our main results on the probability of implementation. Model (1) includes the basic specification with dummies for all economic sectors and for the countries with the highest incidence of decisions to re-municipalize (Germany, France, United States and United Kingdom). We also control for the structural change created by the great recession with the binary variable 'post-great recession'. In model (2) we replace binary variables for economic sectors with the network variable in order to test the transaction cost hypothesis H1. A similar approach is followed in Model (3) where we test for personal services (instead of network-based services) related to H2.[7] Model (4) adds the variable de-privatization in order to test H3 (concerning ambiguity of policy goals). For the purpose of testing H4 regarding government effectiveness, we replace country-dummies with the institutional variables (namely, Gov_effective, Regulation, and the different legal origins) in Model (5). We use Model (6) to test the learning over time hypothesis, H6, by replacing the variable capturing the structural change produced by the great recession with year-specific binary variables. Three additional models were run to improve the robustness of the analysis. Models (7) and (8), retain the year-specific time effects and present results with clustered errors by country and by economic sector respectively. Finally, we present results for a restricted sample Model (9) in which we include only re-municipalization decisions taken up to and including 2013.

Our results provide some evidence of an inverted U-shape relationship between the likelihood of implementation and population size. It should be noted that our results show odds ratios instead of coefficients, so values below 1 indicate a lower probability and values over 1 a higher probability. In most models the probability increases with population until a certain threshold after which the probability starts to decrease in very large jurisdictions. This result is consistent for the most robust and preferred models (6-9) (which include year-specific fixed effects, institutional variables and clustered errors). It reveals a characteristic that re-municipalizations share with privatization reforms but the magnitude of the effect of a one thousand population change is not appreciable (odds ratios very close to 1). Whether the reforming government is local or supra-municipal and whether the decision is privately or publicly led, does not seem to affect the probability of implementation of a re-municipalization decision.

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[7] Note these two binary variables are not included together in order to avoid collinearity.

Focusing on economic sectors, we find, in model 1, that compared to the energy sector (our reference category) the probability of implementation in the water sector – the second most frequent sector in the dataset is negative and statistically significant. Also, waste services and 'other government services' display statistically significant coefficients below 1, indicating that the likelihood of implementing a re-municipalization decision in these sectors is statistically different and lower than in the energy sector. Transportation services and personally-oriented sectors, such as education and health, do not show significant differences compared to energy. However, in order to relate these findings to theoretical propositions we explore further by replacing sector-specific binary variables with two different groupings of sectors. First, in Model (2) we distinguish between sectors on the basis of network characteristics in order to proxy for transaction costs and test H1. Second, in Model (3) we distinguish personal services - from technical services - to test H2. Our results support both hypotheses. Sectors with network characteristics are associated with lower probabilities of implementation – about half of the likelihood (odds ratio of 0.50), while personal services are associated with higher probabilities – more than three times higher than technical services (odds ratio of 3.4). These results are consistent across all models.

As the models that keep the distinction between personal versus technical services provide a (marginally) better fit compared to other models we keep this distinction to test our remaining hypotheses. In Model (4) we include a binary variable denoting de-privatizations in order to test H3. This variable refers to public-led re-municipalization decisions that are more task-ambiguous compared to other publicly-led decisions. Using publicly-led decisions (linked to contract expiration and termination) as a reference category our results indicate that de-privatizations are not statistically different from the rest of publicly-led decisions. We therefore fail to accept H3 which states that ambiguity about the re-municipalization policy had a negative impact on the probability of implementation. This result holds when we include this variable in the more robust Models (5-9).

Country dummies in models (1-4) also offer some anecdotal information regarding country-specific implementation rates. Using 'all other' countries as the reference category the results from Models (1-4) indicate that Germany is the country associated with the highest probabilities of implementation – about 6 or 7 times. France, the UK and the US are associated with lower implementation rates compared to 'other countries'.

Next, to better understand the differences we find between countries, we substitute country dummies with institutional variables in Models (5-9). According to our results, government

effectiveness is only relevant and positively related to the implementation probability in Model 5 as the odds ratio is not statistically significant when we add time dummies (Models 6-9). A similar pattern is found for the regulatory burden of the country although the direction of the relationship is negative in Model 5. Overall, we find only weak support for H4 in relation to government effectiveness and regulatory burden as our preferred and most robust models do not confirm the hypothesis.

However, legal origins consistently report statistically significant coefficients for some specific legal heritages in all models. Using the German legal origin as the reference category, we find that the British, French and Scandinavian legal origins are associated with much lower implementation probabilities thereby confirming the traditional view of the effectiveness of the German administration.

Table 3. Logistic regression estimates on probability of implementation (Coefficients transformed to Odds Ratios).

	Logit Full Sample (1)	Logit Full Sample (2)	Logit Full Sample (3)	Logit Full Sample (4)	Logit Full Sample (5)	Logit Full Sample (6)	Logit Full Sample (7)	Logit Full Sample (8)	Logit Restricted Sample (9)
Population	1.000 (0.0000)	1.000 (0.0000)	1.000 (0.0000)	1.000 (0.0000)	1.000* (0.0000)	1.000* (0.0000)	1.000** (0.000)	1.000* (0.0001)	1.000** (0.0001)
Population^2	0.999** (2.51e-09)	0.999 (0.0000)	0.999* (2.95e-09)	0.999* (2.97e-09)	0.999* (2.54e-0)	0.999* (2.87e-09)	0.999* (3.01e-09)	0.999* (3.18e-09)	0.999*** (9.48e-10)
Local administration	1.081 (0.2403)	0.8202 (0.1708)	0.7764 (0.1634)	0.7765 (0.1625)	0.9144 (0.1788)	0.9722 (0.2055)	0.9722 (0.3190)	0.9722 (0.3360)	0.8629 (0.4152)
Private_led	1.782 (0.8010)	1.379 (0.6161)	1.391 (0.6338)	1.351 (0.6170)	1.356 (0.7148)	1.279 (0.6846)	1.279 (0.3762)	1.279 (0.3611)	1.513 (1.185)
Deprivatisation	-	-	-	0.6059 (0.3038)	-	-	-	-	-
Sector (vs. Energy)									
Education	0.5821 (0.3932)	-	-	-	-	-	-	-	-
Health	0.9040 (0.5173)	-	-	-	-	-	-	-	-
Other services	0.2646*** (0.0895)	-	-	-	-	-	-	-	-
Transportation	0.5887 (0.3002)	-	-	-	-	-	-	-	-
Waste	0.2206*** (0.0973)	-	-	-	-	-	-	-	-
Water	0.0779*** (0.0268)	-	-	-	-	-	-	-	-
Service characteristics									
Network (vs no network)	-	0.4967*** (0.1199)	-	-	-	-	-	-	-
Personal (vs technical)	-	-	3.405*** (0.9950)	3.346*** (0.9809)	2.516*** (0.8106)	2.982*** (1.086)	2.982*** (0.8736)	2.982*** (0.9765)	3.229** (1.847)
Post great recession	2.237 (0.5832)	3.267*** (0.8746)	3.231*** (0.8296)	3.345*** (0.8649)	3.027*** (0.7385)				
Frequent Countries									
Germany	2.311***	7.681***	7.019***	6.800***					

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9
	(0.7195)	(2.100)	(1.745)	(1.704)					
France	0.4338***	0.3026***	0.2797***	0.2694***	-	-	-	-	-
	(0.1279)	(0.0824)	(0.0745)	(0.0736)					
UK	0.1507***	0.1653***	0.1940***	0.1842***	-	-	-	-	-
	(0.0524)	(0.0661)	(0.0723)	(0.0693)					
United States	0.1710***	0.1505***	0.1303***	0.1251***	-	-	-	-	-
	(0.0787)	(0.0728)	(0.0610)	(0.0589)					
Institutional variables									
Gov_effective	-	-	-	-	1.504*	1.330	1.330	1.330	1.550
					(0.3238)	(0.3844)	(0.4935)	(0.2560)	(0.4458)
Regulation	-	-	-	-	0.4440***	1.692	1.692	1.692	0.9315
					(0.1350)	(0.7598)	(0.9913)	(0.0122)	(0.6923)
Legor_uk	-	-	-	-	0.0221***	0.0254***	0.0254***	0.0254***	0.0138***
					(0.0066)	(0.0082)	(0.0069)	(0.0334)	(0.0082)
Legor_fra	-	-	-	-	0.1255***	0.0435***	0.0435***	0.0435***	0.0410***
						(0.0251)	(0.0348)	(0.0435)	(0.0409)
Legor_sc	-	-	-	-	0.1428***	0.1874***	0.1874	0.1874***	0.3082**
					(0.0790)	(0.1164)	(0.2213)	(0.0664)	(0.1453)
Year Dummies	No	No	No	No	No	Yes	Yes	Yes	Yes
Clustered errors (by country)	No	No	No	No	No	No	Yes	No	No
Clustered errors (by sector)	No	No	No	No	No	No	No	Yes	Yes
N. observations	825	825	825	825	818	696	696	696	484
Pseudo R2	0.38	0.32	0.32	0.32	0.36	0.34	0.34	0.34	0.46
Wald Chi2	281.12***	227.53***	233.78***	233.62***	250.69***	229.91***	229.91***	229.91***	-
Log-likelihood	-350.28	-387.96	-384.44	-383.74	-359.26	-316.98	-316.98	-316.98	-180.80

Notes: Significance levels 1%, 5% and 10% denoted by ***, ** and *, respectively. In parentheses standard errors, which are robust to heteroscedasticity in Models 1-6. Parentheses in Models 7-9 display standard errors clustered by country or by economic sector.

Time differences are found to be associated with implementation probability. Our dummy variable 'post-great recession' records a positive and statistically significant coefficient in the models in which it is employed (1-5)- as odds ratios (OR) are greater than 1. This indicates that the probability of implementation increased by approximately 3-fold after 2008. – OR (3.3)- compared to the previous period, thereby confirming H5. The analysis therefore indicates that there were more re-municipalizations in the 'post-great recession' period and that their implementation rates increased. Models (6-9) in which this variable is replaced with year-specific dummies also indicate a similar path. All coefficients are negative and statistically significant when compared with the reference category (base year 2000). Also, odds ratios increase over time indicating that the probability of implementation is higher in later years. This increase in the implementation rate over time leads us to accept the 'learning over time' hypothesis H6.

Finally, in model (9) we restrict the analysis to decisions taken before 2013. This robustness check allows us to exclude recent decisions that may not have had enough time to be executed, thereby biasing our results. Although this robustness check is made at the expense of a large number of observations, we expect more accurate estimates by removing possible noise arising from more recent decisions. As our main results hold after this robustness check we use the most robust combination by including year-specific dummies, institutional variables and clustered errors.

Delay in Implementing Re-municipalization Decisions

In addition to analyzing the probability of implementation, we also examine the average delay of implemented decisions. For this stage of the analysis we restrict our sample to re-municipalization decisions actually implemented and estimate a model explaining the time lapse between the decision and the implementation. Our results for the negative binomial regressions for such models are displayed in table 4.

Table 4. Negative binomial regression estimates on the delay of implementation.

	Logit Full Sample (10)	Logit Full Sample (11)	Logit Full Sample (12)	Logit Full Sample (13)	Logit Full Sample (14)	Logit Full Sample (15)	Logit Full Sample (16)	Logit Full Sample (17)
Population	-0.0001*	-0.0001*	-0.0001**	-0.0001*	-0.0001*	-0.0001*	-0.0001*	-0.0001**
	(0.0000)	(0.0001)	(-0.0001)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)
Local administration	0.0696	0.0431	0.0376	0.0366	0.0474	0.0628	0.0628	0.0628
	(0.1227)	(0.1082)	(0.1161)	(0.1063)	(0.1047)	(0.1023)	(0.0431)	(0.0707)
Sector (vs. Energy)								
Education	-0.5970***	-	-	-	-	-	-	-
	(0.2229)							
Health	-1.134***	-	-	-	-	-	-	-
	(0.3102)							
Other services	-0.9160***	-	-	-	-	-	-	-
	(0.2100)							
Transportation	-0.7310	-	-	-	-	-	-	-
	(0.5251)							
Waste	-0.6637***	-	-	-	-	-	-	-
	(0.2186)							
Water	-0.5702**	-	-	-	-	-	-	-
	(0.2456)							
Service characteristics								
Network (vs no network)	-	0.6235***	-	0.6272***	0.5999***	0.5218***	0.5218***	0.5218***
		(0.1207)		(0.1113)	(0.1312)	(0.1386)	(0.1327)	(0.1600)
Personal (vs technical)	-	-	-0.5011***	-	-	-	-	-
			(0.1661)					
Private_led (vs. Public_led)	-0.7460***	-0.8395***	-0.9048***	-	-	-	-	-
	(0.2513)	(0.2542)	(0.2422)					
How (vs. Expire)								
Private_led	-	-		-0.8937***	-0.9389***	-0.9922***	-0.9922***	-0.9922***
				(0.2542)	(0.2392)	(0.2548)	(0.1716)	(0.1682)
Deprivatisation	-	-	-	0.2802	0.4549	0.4217*	0.4217	0.4217*
				(0.2719)	(0.3090)	(0.2440)	(0.3356)	(0.2410)
Terminated	-	-		-0.7730***	-0.8536***	-0.8291***	-0.8291***	-0.8291***
				(0.2465)	(0.2242)	(0.2270)	(0.3043)	(0.2373)
Post great recession	-0.3091	-0.3409	-0.1119	-0.3784*	-0.3528*	-	-	-
	(0.2064)	(0.2224)	(0.2290)	(0.2054)	(0.2047)			
Frequent Countries								
Germany	-0.0446	0.2858*	0.4381**	0.1703	-	-	-	-
	(0.2023)	(0.1600)	(0.1752)	(0.1740)				

France	0.7050** (0.3290)	0.7396*** (0.2218)	0.7130*** (0.2430)	0.6039*** (0.2115)	-	-	-	-
UK	0.2633 (0.2832)	0.5270** (0.2460)	0.5491** (0.2557)	0.5927** (0.2394)	-	-	-	-
United States	0.1513 (0.6145)	0.4406 (0.6325)	0.7332 (0.6095)	0.4646 (0.5724)	-	-	-	-
Institutional variables								
Gov_effective	-	-	-	-	0.2845 (0.1862)	0.1376 (0.2005)	0.1376 (0.1888)	0.1376 (0.1847)
Regulation	-	-	-	-	0.5406*** (0.1564)	-0.1332 (0.2885)	-0.1332 (0.1661)	-0.1332 (0.1946)
Legor_uk	-	-	-	-	0.4253 (0.2747)	0.2881 (0.2471)	0.2881* (0.1501)	0.2881* (0.1723)
Legor_fra	-	-	-	-	0.1556 (0.1556)	0.7026*** (0.2701)	0.7026*** (0.2016)	0.7026*** (0.1624)
Legor_sc	-	-	-	-	-0.0613 (0.3301)	-0.4636 (0.3263)	-0.4636** (0.2015)	-0.4636* (0.2763)
Year Dummies	No	No	No	No	No	Yes	Yes	Yes
Clustered errors (by country)	No	No	No	No	No	No	Yes	No
Clustered errors (by sector)	No	No	No	No	No	No	No	Yes
N. observations	339	339	339	339	338	338	338	338
Pseudo R2	0.07	0.07	0.05	0.08	0.09	0.11	0.11	0.11
Wald Chi2	79.48***	62.09***	60.75***	87.16***	97.78***	-	-	-
Log-likelihood	-468.01	-473.33	-474.51	-462.50	-456.94	-443.93	-443.93	-443.93

Notes: Significance levels 1%, 5% and 10% denoted by ***, ** and *, respectively. In parentheses standard errors, which are robust to heteroscedasticity in Models 10-15. Parentheses in Models 16-17 display standard errors clustered by country and by economic sector, respectively.

We run a number of models that reproduce the presentation of results in table 3. Some of our results appear consistent across different models. For instance, we consistently find that population size is negatively related to implementation delay.[8] This suggests that governments of larger municipalities or regions have more capacity to undertake reforms and take over the service compared to governments of smaller jurisdictions. We also consistently find that whether the administration is local or supra-municipal does not change the results in terms of average delay.

Our analysis provides noteworthy results with regard to the economic sectors in which services are located. In Model (10) we find that, compared to energy (the reference category), several services are more efficient in terms of average delay. With the exception of transportation all other sectors display negative and statistically significant coefficients indicating that decisions to re-municipalize are more efficiently implemented (in terms of time) compared to decisions that are fully implemented in the energy sector. In order to test H1 and H2 we replace sector dummies with the variables 'network' and 'personal', respectively. H1 is confirmed in Model (11), given that the average re-municipalization in the network sectors (where transaction costs are higher) takes more time. We also find support for H2 in model (12), as re-municipalization of personal oriented services (for example, health, personal and other local government sectors) are finalized faster than other services. Unlike table 3, we keep the 'network' variable instead of the

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[8] We do not include the square of the population variable in this model as the fit is better when population alone is included.

'personal' variable in order to test the remaining hypotheses as this improves the fit of our models while avoiding multicollinearity.

The channel through which the re-municipalization decision was taken is also found to be a significant determinant of delays in implementation. Our variable distinguishing privately-led from publicly-led decisions reports negative and statistically significant coefficients consistently across all models in which it is considered either by comparing it to all other public-led decisions in Models (10-12) or with respect to contract expire decisions in Models (13-17). These estimates indicate that time lags are shorter when the decision to re-municipalize is prompted by the private sector selling shares or withdrawing from the service (Models 10-12). In these cases, government must take action sooner to return the service to public production. Therefore, even if the origin of the decision is not relevant for implementation rates (table 3) publicly led decisions are associated with delays in implementation.

As we find differences in the delay explained by the origin of the decision (privately-led versus. publicly-led) we examined these differences more deeply by distinguishing between de-privatizations, contract expirations and terminated contracts which are within the publicly-led group. It is reasonable to expect privately-led and terminated contracts to be negatively related to delays, given that the termination of a contract urges the substitution of the private operator. Results for this analysis is presented in models (13-17) where the reference category is 'contract expired'. Our findings suggest that, as expected, privately-led and terminated contracts (publicly-led) are statistically significant and report a negative coefficient. On the contrary, de-privatization – which is a decision taken to re-municipalize without any specific target and method- does not display consistent results. For some models it is not statistically significant – and therefore is not different from 'contract expire' – except for two of our preferred models such as model (15), which includes time dummies and model (17) where we further consider clustered errors by economic sector. Our results show that this diffuse category seems to take more time (positive coefficient) to finalize compared to decisions to re-municipalize that are taken after contract expiration. Thus, we find some evidence supporting H3 concerning policy ambiguity.

Again, we find that the coefficient for the 'post-great recession' binary variable to be a negative and statistically significant but only in models (13 and 14). Re-municipalization decisions were not only more frequent after the great recession as described in our descriptive analysis, but these decisions were also more likely to be implemented compared to the pre-recession period (see table 3). In addition, our results show that (with less consistency however), that the lags between taking the decision and finalizing implementation may have been shorter in the post-

recession period. This provides somewhat weak support for H5 with respect to our analysis of the implementation period. The replacement of this variable by the year-specific dummies does not clarify the situation. Many coefficients are not statistically significant, and it is not possible to find a pattern in relation to time. Thus, we do not find support for the policy learning hypothesis (H6) concerning the delay in implementation.

Country dummies included in Models (10-13) provide some evidence of variation in implementation periods across countries although results vary across models. Compared to the reference category 'average period for other countries', France is found to have longer implementation periods in all models considered. Germany, in models (11 and 12) and UK in models (11-13) also display similar behavior but with less consistency across models. Finally, the US does not seem to behave differently from the reference category. In order to examine differences between countries more deeply we replace these dummies with institutional variables. We find them to be significant determinants of average delays in Models (14-17). For instance, we find that the regulatory burden is positively related to delays in model (14). This suggests that more regulation usually complicates the implementation of a decision and this may extend the period between the decision and completion of the reversal. However, this result is not produced when we replace the 'post great recession structural change' variable with year-specific dummies. Thus, our results on the importance of the regulatory burden appear weak according to our best empirical models.

Moreover, the 'government effectiveness' variable does not appear statistically significant in any of the models considered. On the contrary, different legal origins are found to be good predictors of implementation delays in addition to implementation rates (table 3). Using the German origin as reference category, we again find that the administrations under the British, French and Scandinavian legal origins tend to spend more time implementing re-municipalization decisions compared to jurisdictions where the German legal system applies. These results are consistent for our preferred models with time dummies and clustered errors. Thus, the German legal origin is associated with higher rates of implementation and these implementations appear to be more efficient in terms of delays. All in all, our results provide support for the hypothesis that institutions are important although our variables for government effectiveness and regulatory burdens do not show much explanatory power.

Discussion and Conclusions

In recent years, there has been growing evidence of a reversal of the earlier international trend towards privatization, especially at the level of municipal services. When viewed in historical terms it appears that the new wave of re-municipalization represents another swing in the regulatory pendulum of public service provision that has oscillated between a public sector and privatist paradigms since the mid-nineteenth century (Hall et al, 2013:193).

As the incidence of re-municipalization increases we can expect several questions to be asked about different aspects of a reform that represents a significant re-configuration of public service delivery and which appears to have taken hold on a global level. This paper takes advantage of the first international dataset that provides information on re-municipalization (i.e. reverse privatization at the local government level). It uses the data to empirically examine two principal questions. First it examines the factors that determine whether the decision to re-municipalize services is effectively implemented (finalized). Second, as the raw data indicates that over 40 per cent of decisions have yet to be implemented we analyze the factors that determine the lag between the decision to re-municipalize and actual implementation.

Our findings provide strong empirical support for hypotheses drawn from public versus private choice literature. Service characteristics matter in terms of policy implementation and execution. Sectors such as water and waste services which possess strong network characteristics are associated with lower probabilities of implementation. Also, it takes longer to implement re-municipalization policies in network sectors. On the other hand, re-municipalization is more likely to be implemented in personal services including health and education. Moreover, re-municipalization is finalized faster for these services.

Support for hypotheses drawn from policy implementation literature is more nuanced. The results do not find that greater clarity about re-municipalization policy is associated with the level of implementation. But there is some support for the proposition that less ambiguity is associated with lower delays in implementation. There is some support for the hypothesis that the quality of government is positively associated with the probability of implementing policy but not the time taken to complete the task. However, other institutional factors such as legal traditions are found to be significant determinants of policy implementation and its finalization. Specifically, countries following the German legal tradition are associated with higher probabilities of implementing and completing reforms compared to other legal traditions. The level of regulatory burden also has a degree of impact and there is some support for the hypotheses that higher burdens are negatively associated with implementation and reforms take longer to complete in jurisdictions where burdens are greater.

External economic conditions, specifically the great recession, are found to have increased the probability of implementing reforms and there is some evidence of faster implementation in the post-recession period. However, we fail to find evidence that policy implementation is more efficient over time. Although the level of policy implementation increases over time the speed of implementation does not improve. This result indicates that policy learning is not evident but this may be attributable to the fact that re-municipalization is a relatively recent development.

Overall, when our analysis of the re-municipalization phenomenon is considered in terms of relevant theoretical frameworks we find support for propositions from theory that considers choices between public and private sector delivery of services. However, support for propositions derived from the literature on the implementation of public policy measures in more limited.

Our analysis also produces noteworthy results in relation to other aspects of re-municipalization policy. We find that when reform is prompted by the private sector withdrawing from service provision or selling shares, the change is implemented with less delay compared to publicly led change in situations such as when contracts to expire. Similarly, implementation is more quickly finalized when the decision is taken to terminate contracts.

Overall, our analysis makes an original contribution to the literature on public service delivery by conducting the first empirical analysis of re-municipalization of which the authors are aware. The scale of re-municipalization revealed by the data we use shows that the push to reverse earlier privatizations and to restore government control of public services has gathered momentum and is extending its reach in international terms. It remains to be seen if this trend will continue but the scale of re-municipalization to date is an important phenomenon and this study goes some way towards illuminating the factors associated with its full implementation and the time-efficiency of its finalization.

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