UNIVERSITY OF GOTHENBURG

MUNICIPAL MERGER AND LOCAL DEMOCRACY

An assessment of the merger of Japanese municipalities

KOHEI SUZUKI

HYESONG HA

WORKING PAPER SERIES 2017:8

QOG THE QUALITY OF GOVERNMENT INSTITUTE
Department of Political Science
University of Gothenburg
Box 711, SE 405 30 GÖTEBORG
July 2017
ISSN 1653-8919

Municipality Merger and Local Democracy: An assessment of the merger of Japanese municipalities
Kohei Suzuki
Hyesong Ha
QoG Working Paper Series 2017:8
July 2017
ISSN 1653-8919

ABSTRACT

Municipal mergers have been widely used as a tool for administrative reform (Fox and Gurley-Calvez 2006; OECD 2014). While municipal mergers have been planned or implemented with the hope of increasing efficiencies in service provisions, their impacts on local democracy have been neglected (Hansen 2013, 2015; Kjaer, Hjelmar, and Leth Olsen 2010). In particular, little is known as to how mergers affect performance of local legislatures. In filling these gaps, this study uses a dataset of 754 Japanese city-level governments from 2008 to 2014 to examine how mergers influence legislative performance. After controlling for potential confounding factors, the analysis shows that municipal merger is negatively correlated to legislative performance. Specifically, new local councils created through merger are less likely to propose municipal bylaws than non-merged councils. This study contributes to the existing studies by examining the neglected dimension of merger effects in an understudied Asian developed country: Japanese local governments.

Key Words: *Administrative Reform, Municipal Merger, Legislative Performance, Panel Analysis*

Kohei Suzuki
The Quality of Government Institute
Department of Political Science
University of Gothenburg
kohei.suzuki@gu.se

Hyesong Ha
School of Public and Environmental Affairs
Indiana University
hyeha@indiana.edu

Introduction

Scholars in the field of public administration and urban affairs have investigated how mergers of municipalities affect their performance (Allers and Geertsema 2016; Dollery, Byrnes, and Crase 2007; Kjaer, Hjelmar, and Leth Olsen 2010; Reingewertz 2012; Steiner and Kaiser 2016; Suzuki and Sakuwa 2016). Municipal mergers have been carried out in many developed countries mainly for the purpose of increasing efficiency in the provision of municipal service and spending (Fox and Gurley-Calvez 2006; OECD 2014). However, what has been often neglected is their impacts on local democracy (Gendźwiłł and Swianiewicz 2016). Although previous studies examine how mergers affect citizens' political interest and efficacy (Lassen and Serritzlew 2011; Steiner and Kaiser 2016), political trust (Hansen 2013), and satisfaction with local government (Hansen 2015), very few studies assess the relationship between mergers and legislature performance. Kjaer, Hjelmar, and Leth Olsen (2010) is the single study, to the best of the authors' knowledge, that examines the impacts of mergers on local legislative activity. However, the study mainly relies on subjective perceptions of local councilors regarding their influences on policy making based on survey data. We still do not know how mergers affect actual performance of local legislatures, such as the proposal and passage of bills. By shedding light on this relatively neglected aspect of merger effects, this study seeks to fill this gap in the literature and contribute to the literature on local government size and performance (Andrews and Boyne 2009; Avellaneda and Gomes 2015; Christenson and Sachs 1980; Boyne 1996; Newton 1982) as well as studies of municipal consolidation (Allers and Geertsema 2016; Dollery, Byrnes, and Crase 2007; Andrews 2013; Holzer et al. 2009; Drew, Kortt, and Dollery 2014; Kjaer, Hjelmar, and Leth Olsen 2010; Reingewertz 2012; Steiner and Kaiser 2016).

Municipal mergers have been widely used as a tool for administrative reform at the municipal level in developed countries. By combining two or more municipalities, mergers reduce the number of total municipalities and increase their scale in terms of geography and population. Generally, the main purpose of merging municipalities is to build more efficient and effective local governments with greater administrative capacities by consolidating fragmented municipalities. While municipal fragmentation has been pursued often in developing countries, mergers through the consolidation of municipal bodies are more common in developed countries (Fox and Gurley-Calvez 2006; OECD 2014). While the promoters of consolidation often emphasize the merger's benefits of increasing efficiency or effectiveness through greater economies of scale or economies of scope, they

often overlook its drawbacks such as the negative impacts on local democracy. Mergers may improve efficiency in municipal spending and service delivery by the administrative body. Such a restructuring, however, may not always be beneficial for legislative activities of local councils in the short run because of 1) reduced citizen interest and participation in politics and lower satisfaction with local governments in bigger municipalities (Dahl and Tufte 1973; Hansen 2013, 2015; Lassen and Serritzlew 2011; Mouritzen 1989; Newton 1982); 2) reduction in councilor-citizen proximity in merged municipalities (Newton 1982); 3) increased bureaucratic professionalization and specialization (Carr and Feiock 1999; Fox and Gurley-Calvez 2006; Vojnovic 2000; Kjaer, Hjelmar, and Leth Olsen 2010); and 4) the negative impact of profound organizational change on performance(Bhatti, Gørtz, and Pedersen 2015; Pettigrew, Woodman, and Cameron 2001).

This study tests the impacts of municipal mergers on local legislative performance by using a dataset of 754 post-merger Japanese municipalities from 2008 to 2014. The central government of Japan carried out a nationwide municipal merger reform from 1999 to 2006. Due to the unavailability of legislative data before 2007, this study relies only on the post-merger data. Two dimensions of legislative activities are tested: legislative proposal and approval. Each dimension is operationalized by local councils' 1) revisions to mayors' legislative proposals, and 2) proposals for municipal bylaws. After controlling for potential confounding factors, the analysis shows that municipal merger discourages legislative activity. Results suggest that merger is negatively associated with bylaw proposal by local councils. Councils experiencing merger propose fewer municipal bylaws.

This research contributes to the existing studies of municipal merger and administrative reforms in several ways. First, while there have been a number of extensive studies on the impacts of merger reform on financial efficiency, there have been few studies that explore how municipal mergers affect the dimensions of local democracy. In particular, studies that assess the impact of municipal boundary rescaling on performance of local legislatures are still scarce. Second, by testing understudied aspects of municipal performance using objective performance data of legislatures this study contributes to the existing studies on municipal size and performance. More specifically, by testing two dimensions of legislative performance (legislation proposal and approval), this research explores whether the effects of merger vary across two dimensions. Third, regarding merger effects on democracy, most previous studies rely heavily on merger cases in European countries (Kjaer, Hjelmar, and Leth Olsen 2010; Hansen 2013; Lassen and Serritzlew 2011; Hansen 2015; Steiner and Kaiser 2016). This study contributes to the recent increased interest in contextual factors in

public management and performance in a cross-national setting (Meier, Rutherford, and Avellaneda 2017; O'Toole and Meier 2014) by investigating a relatively understudied developed democratic setting: Japanese local governments.

This study is organized into five sections. The first section reviews what has been studied about the impacts of municipal mergers and the relationship between municipal size and local democracy, and provides the rationale for testing the merger effects on legislative performance by local councils. The second section provides background information on municipal mergers and legislative activities of local councils in Japan. The third section describes the research design and variable operationalization, followed by a fourth section containing results and analysis. The fifth section presents conclusions and limitations of this research.

Municipal Merger and Legislative Performance of Local Councils

Municipal merger/consolidation/amalgamation is one type of administrative and structural reform of municipalities, whose implementation can be either mandatory or voluntary. Consolidation means "[t]he action or process of combining a number of things into a single more effective or coherent whole" (Oxford University Press 2016). In other words, the number of municipalities is reduced by combining two or more municipalities. The resulting consolidated units will be enlarged municipalities in terms of area and population. While transitional economies have generally opted for fragmentation (Avellaneda and Gomes, 2015), municipal amalgamation has been common in developed countries such as Australia, Denmark, Finland, the United States, and Japan. In fact, half of OECD (Organization for Economic Co-operation and Development) countries have planned or implemented municipal consolidations in the last 15 years (OECD 2014). [i]

The promoters of consolidation contend that aggregating small units improves service coordination and produces economies of scale or scope (Christenson and Sachs 1980; Hirsch 1968; Lomax 1952; Shepherd 1990; Whetten 1978). These arguments assert that larger organizations (1) have greater control over the external environment (Pfeffer and Salancik 1978); (2) spread administrative costs across a larger set of services (Stigler 1958); (3) avoid administrative duplication (Andrews and Boyne 2009; Lomax 1952); and (4) lower input prices through their greater purchasing power (Andrews and Boyne 2009). Therefore, municipal consolidation should lead to efficiency in administrative/operational costs.

One significant criticism against municipal merger has been raised from the perspective of local democracy. The ancient Greeks considered as appropriate for a successful democracy jurisdictions that were large enough to be self-sufficient but small enough that citizens could get to know one another (Blom - Hansen, Houlberg, and Serritzlew 2014; Larsen 2002). It has been pointed out by opponents of municipal merger that people lose accessibility to local elected representatives and the bureaucracy in larger municipalities (Vojnovic 2000). Such reduction in citizen access may negatively influence citizen interests in politics, political participation, political trust, political efficacy, citizen satisfaction, and functions of local councils (Hansen 2015; Kjaer, Hjelmar, and Leth Olsen 2010; Steiner and Kaiser 2016; Vojnovic 2000). Thus, opponents of mergers claim that municipal consolidation might lead to declines in the quality of local democracy.

Scholars in political science have mainly debated over jurisdiction size and the quality of local democracy (Dahl and Tufte 1973; Newton 1982; Denters et al. 2014). In the context of this ongoing debate, scholars who seek to assess municipal mergers evaluate how mergers influence local democracy. In doing so, most previous studies have been concerned about how municipal size affects individual political behavior and attitudes such as political participation, political competence, confidence in government, and satisfaction with government performance (Denters et al. 2014; Newton 1982; Hansen 2015; Larsen 2002; Gendźwiłł and Swianiewicz 2016; Lassen and Serritzlew 2011; Hansen 2013; Steiner and Kaiser 2016). Previous studies generally suggest two competing arguments regarding jurisdiction size and political behavior. The first argument claims that municipal size negatively affects individual behavior and attitudes. In small municipalities, citizens have a higher sense of community and social cohesion, which leads to more concern about public affairs and political participation (Newton 1982). Therefore, increasing the scale of municipal government negatively affects individuals' political orientations and their willingness to be involved in politics (Denters et al. 2014). Moreover, smaller municipalities tend to produce local policies that satisfy citizen preferences because of the small separation between local officials and citizens and high homogeneity, which translate into higher citizen satisfaction with local government (Hansen 2013, 2015; Mouritzen 1989). On the other hand, the second argument is that municipal size positively affects individual political orientations and behavior. Larger municipalities have higher capacities and more resources to deliver municipal services more effectively and efficiently. Since larger municipalities are able to provide more, citizens are able to control more aspects of their environment which in turn leads to more incentives for political participation, stronger political efficacy, and greater satisfaction with municipal government (Hansen 2013; Mouritzen 1989). In addition, larger

municipalities tend to have more vibrant and diverse associational life, which leads to a more competitive democratic system. In such a competitive system, citizens are more likely to be interested in politics (Dahl and Tufte 1973; Denters et al. 2014).

Empirical results seem to support arguments for the negative impacts of municipal size on citizen behavior. Hansen (2013) shows that changes in municipal size negatively affect citizens' trust in local politics by using Denmark's experiences with municipal mergers. Gendźwill and Swianiewicz (2016) show that municipal size reduces political interest, political efficacy, and civic engagement in Poland. In his study of Danish municipalities, Hansen (2015) finds that increases in population size by municipal mergers have a negative impact on citizen satisfaction on local democracy and local services. Likewise, by using the case of municipal merger reform in Denmark, Lassen and Serritzlew (2011) find that municipal mergers have negative impacts on citizens' internal political efficacy. While results of these studies seem to generally suggest an inverse relationship between municipal size and citizens' political orientations and participation, there have been very few studies that examine how mergers affect the performance of local councils. To the best of the authors' knowledge, Kjaer, Hjelmar, and Leth Olsen (2010) is the only empirical study that examines merger impacts on local councils. However, the purpose of their study is to analyze how changes in jurisdiction size affect local councilors' perceived influence in policy making by using survey data. There is no empirical study that assesses merger impacts on local council performance by using objective data.

The question, then, is how do municipal mergers affect the legislative productivity of local councils? Unfortunately, scholars have not provided a single theory that provides a direct link between rescaling of municipal jurisdiction and government and legislative performance. However, drawing on existing studies in jurisdiction size, municipal merger, and public management, we identify below several reasons for both positive and negative impacts of municipal mergers on performance. Therefore, our aim here is to build a theoretical link between merger of municipalities and council performance. First of all, mergers can positively affect performance of the local legislature. The primary source for such arguments comes from the concentration of available resources in merged municipalities. One of the purposes of merger is to build municipalities with more capacities and resources for service provision by consolidating fragmented municipalities. Mergers enable municipalities to have more legal power and status and to have more resources (Fox and Gurley-Calvez 2006). Thus, local councils in larger municipalities may have more available resources such as a

professional staff, a larger council budget and greater support for legislative activities. Such enhanced resources empower legislatures and enhance their legislative productivity (Ferraz and Finan 2009; Grissom and Harrington 2013). More professional legislatures are also likely to promote more policy diffusion (Shipan and Volden 2006), which also promotes legislative activity.

However, previous studies also suggest reasons to expect negative merger impacts. First, evidence from previous studies suggests that mergers reduce citizen interests in politics, internal efficacy, and participation(Hansen 2015, 2013; Lassen and Serritzlew 2011), which may in turn reduce responsiveness of local leaders to citizens (Denters et al. 2014; Dahl and Tufte 1973). Secondly, municipal mergers enlarge the size of population with which local councilors must deal. Compared to the pre-merger municipality in which local councilors account for a relatively small size of population, local councilors in the post-merger municipality need to deal with a larger population and more diverse needs of local citizens. In particular, in Japanese municipal settings, local council members are elected by the single nontransferable vote rule in a municipality-wide, at-large district with some small exceptions (Yamada 2016). This means that local councilors need to represent more voters in the post-merger municipalities than in the pre-merger municipalities. Therefore, citizen's experience decreased access to elected councilors in the post-merger municipalities. Such reduction in councilor-citizen proximity may hinder local councilors' responsiveness. Thirdly, municipal mergers aim at building more professional and specialized bureaucracies that cannot be acquired easily by smaller municipalities (Dollery, Byrnes, and Crase 2007; Fox and Gurley-Calvez 2006; Carr and Feiock 1999; Vojnovic 2000). In addition, professionalization of bureaucracies enhances innovation in public policy (Teodoro 2009; Bhatti, Olsen, and Pedersen 2011). Furthermore, such advancement in the administrative body may increase more specialized administrative casework and reduce transparency in administrative process. Therefore, such advancement in the degree of professionalization and specialization of administrative bodies may weaken the roles of local legislators (Kjaer, Hjelmar, and Leth Olsen 2010). In other words, local councilors experiencing merger will encounter increased complexities of administrative work, which hamper a more active role of councilors in the legislative process (Kjaer, Hjelmar, and Leth Olsen 2010). Finally, municipal mergers cause profound organizational changes that may cause short-term disruption in organizational performance. In merged organizations, it may take time to establish new organizational cultures and norms. Organizational managers need to manage employee resistance against such unsettling changes and employee stress (Denhardt, Denhardt, and Aristigueta 2015). Organizational changes may negatively affect employee health and increase stress, which may negatively affect organiza-

tional performance (Dahl 2011; Takagishi, Sakata, and Kitamura 2012). Our study of Japanese municipalities covers a seven-year period (2008-2014) that begins only three years after the peak period of merger waves (2005).ii Therefore, because only a short time had elapsed since the bulk of these mergers were finalized in Japan, they might be more likely to continue to suffer from these short-term negative impacts of consolidation.

In sum, in this study we hypothesize that municipal merger discourages legislative performance. This hypothesis is based on the reasons given above--which correspond to the arguments emphasizing the negative effects of municipal merger--as well as the empirical evidence of the negative correlation between municipal size and individual democratic behaviors. We test this hypothesis using a dataset of 754 Japanese municipalities.

Case Selection: Japanese Local Governments

This study uses a case of Japanese municipalities. Japan is a suitable case for analysis for the following reasons. First, and most importantly, the Japanese experience of nationwide municipal mergers provides ample cases to assess the impact of municipal mergers on legislative performance, covering all municipalities. Second, Japanese local governments have similar administrative structures regardless of their geographic location and municipal size, thus allowing us to control for institutional factors. Furthermore, Japanese regions are less diverse with respect to culture, ethnicity, and economy, compared to other developed countries. For instance, regional disparities in unemployment rate were the lowest, and regional differences in GDP per capita were the fifth lowest among OECD countries (OECD 2014). Therefore, such homogeneity helps us to control for other factors that may potentially influence our dependent variables. Finally, despite the fact that Japan is an advanced democratic country, Japanese local governments have been less studied in the English literature of public administration compared to those in Western European and North American countries. Examining this understudied setting helps us to build better theories of the municipal size-performance relationship and municipal merger, which responds to the recent increasing interest in contextual factors in public management (Meier, Rutherford, and Avellaneda 2017) and comparative and international perspectives in public administration (Jreisat 2002; Fitzpatrick et al. 2011; Raadschelders and Lee 2011; Jreisat 2005; Hou et al. 2011).

Japan adopted a unitary political and administrative system with a two-tier local government system: prefecture as regional government units and municipality as local government units. Munici-

palities, in turn, are categorized as cities, towns, and villages. As of April 2014, Japan has 47 prefectures and 1,718 municipalities, and of these 790 are cities, 745 are towns, and 183 are villages (MIC 2014). Although some municipalities have additional responsibilities depending on population size, basically all municipalities have the same powers and similar responsibilities such as provisions of social relief, nursing insurance; national health insurance, etc(MIC n.d.-a).[iii]

Japanese local government structure consists of the legislative branch and the executive branch. The relationship between the legislative and executive bodies is classified as a "strong mayor" system in the United States. The chief executive holds the exclusive power over all executive agencies (CLAIR 2013; Kawasaki 2000). Japanese local governments have adopted a presidential system, in which both the mayor and the local assembly members are directly elected by voters. The mayor and the local assembly are separate and independent entities. Unlike the diversity of local government structures in the U.S., this Japanese structure has been adopted uniformly across municipalities (CLAIR, 2013) Mayors' rights include enacting regulations, preparing budgets, proposing bills, and appointing or dismissing staff. Local assemblies have voting rights in matters including budget and ordinances, and can conduct a no-confidence vote with respect to mayors.

Japanese local councils have played a surprisingly weak role in legislative performance (Hirose and Local Council Reform Forum 2014). Although local councils have rights to establish or amend bylaws and revise the mayor's legislative proposals, it is unusual that local councils play an active role as a legislative body. For instance, only 9.6 % of local councils rejected legislation proposed by a mayor in 2013. The percentage of local councils that submitted revisions to mayoral proposals was only 18.6 % in 2013. Only 11.0 % of local councils submitted a bylaw proposal in the same year. Thus, most Japanese local councils largely depend on the strong role of the mayor as a lawmaker and are considered as a rubber stamp for the administrative body (Hirose and Local Council Reform Forum 2014). Such passive roles of local councils are due to several factors such as the strong mayor system and overregulation of functions and authority of local councils by law (Imasato 2005). However, the recent decentralization reform begun-in 1999 has provided local councils with more discretionary power. In addition, the passive role of local assemblies has recently attracted wider public attention. These factors have led to encourage councils to play a more active legislative role in municipal policy making.

Japanese Municipal Structural Context: Municipal Merger

Declining birthrate and severe financial conditions are among the drivers that led the Japanese central government to promote nationwide consolidation reform (Yokomichi 2007). Municipal mergers were conducted on a voluntary basis. However, the central government set 1,000 as the total number of municipalities when all the consolidation was done and asked prefecture/regional governments to promote consolidation within their jurisdictions (Yokomichi 2007) by providing strong financial and economic incentives. For many municipalities, a major reason for merger was to improve their finances by gaining a larger tax base. For example, municipalities with a large population and high per capita revenues were generally less likely to join mergers on account of the financial incentives (Yamada, 2016). Once merger was chosen, a merger council was formed comprising decision-makers, legislators and residents of the merging municipalities, as required by law. Typically, agreements on merger were written and signed by the council. The councils were eventually dissolved after the mergers were completed (Suzuki and Sakuwa 2016). During the period of the Great Heisei Municipal Consolidation, the number of Japanese municipalities decreased from 3,229 in 1999 to 1,821 in 2006 (Yokomichi 2007), and this number continued to decrease gradually to 1,718 in 2014 (MIC 2014).

Two types of merger have been adopted: (1) municipal absorption, in which a core municipality absorbs other partners; and (2) the creation of a new municipality by merging units (Miyazaki 2014). Through absorption, the core municipality retains both its mayor and legal status, while the absorbed municipalities forego theirs. In many cases, names of core municipalities are maintained, and city offices of core municipalities continue to serve as the headquarters for the consolidated unit. Newly created municipalities, by contrast, are granted a new legal status, and the comprising units have to decide on both a new name and office location for the created municipality (Ehime Prefecture n.d.). The same principles generally apply for the composition of the municipal council, with members of the core municipality retained in the case of annexation, while with a new municipality, a new council was formed. From April 1999 to April 2014, there were 649 cases of municipal consolidation: 461 cases of creation of a new municipality, and 188 cases of municipal absorption.

Data Collection and Variable Operationalization

The unit of analysis is the municipality-year. We target all city-level municipalities because of data availability. Our analysis includes 754 city-level municipalities from 2008 to 2014 in the post-merger period.[iv] As the local council term is four years, the panel dataset covers data from two local coun-

cil terms. Towns and villages were excluded because of the unavailability of certain variables. Local council's performance data, which is the dependent variable, is obtained from White Paper on Local Council Reform 2009-2014 (Hirose and Local Council Reform Forum 2009-2014). This white paper, first published in 2009, provides a unique dataset of all Japanese local councils regarding their legislative activities based on survey data for councils.[v] To the best of the authors' knowledge, there is no publicly available dataset that contains all individual local council's data in the pre-merger period. Therefore, analysis with a panel dataset that contains both pre-and post-merger municipalities is unattainable. The data for municipal merger are from MIC (n.d.-c). Mayoral political data are obtained from List of Local Chief Executives (2007-2012 editions) (Chihō Jichi Sōgō Kenkyūjo 2007-2012) and Profiles of Governors and Mayors in Japan (2007-2012 editions) (Chihō Gyōzaisei Chōsakai 2007-2012). Independent variables and other control variables are collected from MIC (2015b) and Settlement of Municipality Finances (MIC 2014-2015).

Measuring Legislative Performance

This study focuses on the following two dimensions of legislative activities: legislative proposal and approval. In Japan, proposing a bill or requesting an amendment to a proposed bill requires a concurring vote of one twelfth or more of all local council members (MIC 2015a). However, approving a bill requires a concurring vote of a majority of council members (Nara City Office n.d.). Thus, legislative approval requires more votes from council members and needs more coordination efforts among council members. As an object of local council legislation, we particularly look at two different types of legislation objects: 1) municipal bylaws and 2) amendments to mayoral proposals. With respect to municipal bylaws, we look at a certain type of bylaw: the one addressing policy issues within a municipal jurisdiction. Bylaw policy proposals that can directly affect citizens' life and enhance the local council's ability to check the executive body are typically included in this category. Other bylaw proposals that are only related to local council matters such as remuneration of councilors, information disclosure of council activities, and organization of the council secretariat are excluded (Fukuoka City Council Secretariat 2015).[vi] We focus on this type of policy bylaw because of data availability and, more importantly, it is considered a measurement of legislative performance of local councils in Japan (Hirose and Local Council Reform Forum 2014). While a municipal bylaw proposal is a measurement that captures local councilors' ability to make a bill independently, amendment bill proposals highlight local councilors' ability to modify and amend a mayor's bill proposal. The latter requires less effort for local councilors than the former because

they do not need to draft a bill from scratch in the latter case. Amendment proposals to any type of bill proposed by a mayor are counted.

This study looks at both the legislative proposals and approvals for municipal bylaws and amendments to mayors' proposals. This led us to create four dependent variables: 1) municipal bylaw proposal; 2) amendment proposal; 3) bylaw approval; and 4) amendment approval. As explained previously, traditionally local councils in Japan play only a passive role as a legislature. However, due to several legal and regulatory changes in local council activities by the central government since 1999 (MIC 2015a), local councils have received more autonomy and discretionary power. That has led to encourage legislative activity at local councils. However, there are still only a small number of local councils that are engaged either in legislative proposals or approval of policy bylaws or amendments as reported in Table 1 & 2. Due to the small number of local councils that actually proposed or approved municipal bylaws or amendments to mayoral bills, we use both dichotomous and continuous variables. Specifically, the first type is a dummy variable, which gives "1" for those municipalities that submit at least one amendment proposal to mayoral legislation and "0" otherwise. We created a dummy variable for council's approval of amendment proposals to mayoral legislation as well. In addition, we repeated the same procedure to create a dummy variable for proposal and approval of municipal bylaws. The second dependent variable is a continuous variable, which shows the number of local council's revision proposals to mayoral legislation. This variable is standardized by the number of councilors in each municipality. We repeated the same procedure for approval of local council's amendment proposals to mayoral legislation, proposals of bylaws, and approval of bylaws.

Independent Variable

The most important variable of this study is municipal merger. We use a categorical variable for merger, consisting of three groups. The first category is the baseline, denoting the municipalities that experienced no merger after 1999. The second category describes whether a municipality has experienced any consolidation through absorption. That is, if a locality absorbed at least one municipality after 1999, it falls within this category. Finally, the third category represents municipalities that were created as a new municipality through consolidation of two or more units at any point after 1999. We use a categorical variable rather than a binary variable which indicates whether or not a merger took place. This is because we expect that merger effects might differ depending on merger type. In merger through creation of new municipality, merging partners have equal status

and need to establish a new organizational culture, norms, and informal institutions, which require more coordination efforts and time. On the other hand, in municipal absorption, larger municipalities in terms of population absorb smaller municipalities, and they tend to remain the central governmental entity in merged municipalities.

Control Variables

This study controls for other factors expected to influence legislative performance. Such factors include resources for local councils, political context, and socio-economic conditions. Previous studies suggest that legislative productivity depends on available resources for local councils (Ferraz and Finan 2009; Grissom and Harrington 2013; Yoon and Jeong 2016). Such resources include council budget, salary, legislative staff, hours in committee meeting, and legislative days. In this study, we focus on local council's budget per councilor and councilor's salary due to the unavailability of other data. Political controls include 1) mayors' vote share; 2) number of political parties supporting the elected mayor in mayoral elections; and 3) percentage of local councilors that supported mayors during mayoral elections. Mayors' vote share is a continuous variable, reported in percentage. As many mayoral candidates run without party affiliation, we control for the number of political parties that publicly support the elected mayor. It is a continuous variable, ranging from 0 to 6. The percentage of local councilors supporting mayors is a continuous variable. The first variable indicates the political power of the mayor and the second and third variables measure an ideological distance between mayor and local councilors. Higher values for these variables mean that mayor-council distance is close, which is expected to discourage legislative initiative by local councilors. We also controlled for socio-economic factors, including population size (logged), unemployment rate (%), and percentage of senior citizens (%). Finally, we also include a dummy variable for each year, leaving year 2008 as the excluded category, namely a base year.

Table 3 provides the descriptive statistics for all the variables. Table 4 reports the correlations matrix for all the variables. The correlation matrix shows a high correlation between some control variables within the same model such as population and local councilor salary (0.74), and population and local council budget (0.72), and mayor's political party support and councilors supporting mayor (0.71). However, the variance inflation factors (VIF) for the regression are below 6.69, suggesting that multicollinearity is not an issue in our models. In addition, as a robustness check, we rerun the same models without population, which has high correlation with other control variables,

to see if we still obtain same results. Local council salary and budget records high correlation, however, these two variables are not used in the same model.

Empirical Strategy

The goal of this paper is to estimate any (negative) effects of municipal merger (or municipal merger type) on local council's performance by using a panel data of 754 city-level municipalities from 2008 to 2014 in Japan. Please note that this dataset is a short panel with each municipality (i) having 7-year time points (t). Please also note also that the main explanatory variable of interest, municipal merger, is a categorical variable, which indicates 0 if there is no merger, 1 if a municipality absorbed a smaller municipality(ies), and 2 if a new municipality was created through merger. The dependent variable measuring legislature performance has two types. One is dichotomous with 1 if a municipality proposed or approved at least one bylaw or amendment, or 0 otherwise. The other is continuous, which is measured by the total number of bylaws/amendments proposed or approved that is divided for standardization by each municipality's total number of councilors. Due to these differences in the dependent variables, we need to utilize different panel analyses depending on the type of dependent variable. For the binary dependent variables, we use random effects (RE) models with panel-robust standard errors due to several reasons.[vii] First, we prefer random errors component models to pooled logit models because the binary dependent variable has enough volatility not only between variations but also within variation as reported in Table 5. Second, and most importantly, among the random error models, fixed-effects (FE) models are not possible in this study since our main explanatory variable of interest, municipal merger, is time-invariant (see Table 5), which is automatically excluded from analysis when we run fixed-effects logistic models by using *xtlogit* command with *fe* option in STATA14. As a remedy for this issue, even though we cannot correct for the unit fixed effects, we tried to control for any regional fixed effects by using prefecture (an administrative jurisdiction higher than municipality in Japan) dummy variables. Thirdly, among all the control variables, the local councilor salary per councilor (both in raw or logged values) and population in logged (which are grayed in table 5) have very small within standard deviation. In other words, for those regressors, most of the variation is between-municipality variation rather than within-municipality variation. This implies that FE estimators are not very efficient because they rely on within-observation variation(Cameron and Trivedi 2010, 621). In addition, short panels are not appropriate for consistently estimating FE models in some standard non-linear models such as binary probit(Cameron and Trivedi 2010, 615). Lastly, the binary dependent variables are considerably persistent from year to year as in Table 6. For example, 91.4% of municipali-

ties who did not propose any bylaws one year also did not propose any bylaws the next year while only 37.3% of those who proposed a bylaw one year also did the next. This asymmetric persistence is applied to other dependent variables such as revision proposed, bylaw approved, and revision approved. Furthermore, correlations in the dependent variables vary little with lag lengths as shown in Table 7. Therefore, we need to correct for error correlation over time for a given unit, that is, in our case, the municipality. In sum, given these reasons and the fact that pre-merger data is not available, the most appropriate model among the non-linear panel models should be RE models with panel-robust standard errors.

We conduct three types of robustness check. We run the same models 1) using local council budget/ councilor instead of local council salary/ councilor as a control variable; 2) adding regional fixed-effects; and 3) dropping a variable of high correlation (population). Population variable has a high correlation with local council salary or budget, therefor we run the same models without population in order to see whether or not we obtain the same results.

Analysis and Results

Table 8 reports results of random-effects logit models with a panel-level variance component. Panel-robust standard errors are calculated by using the *vce(bootstrap)* option in STATA, following Cameron & Trivedi's(Cameron and Trivedi 2010, 623) recommendation. The rho, which is measuring the fraction of total variance due to the panel-level variance component or the within variation, is statistically significant (P-value < 0.001). For example, among the total variance in bylaw proposal, 25.7% is due to the panel-level variance component, which is statistically significant from the result of the Likelihood Ratio (LR) test on rho=0. When rho is zero, the panel-level variance component is unimportant and the panel estimator such as the RE model is not different from the pooled estimator such as the pooled logit one. Therefore, the significance of rho is evidence that an RE model is more appropriate than a pooled model.

Table 8 shows that the municipalities merged through absorption or creation significantly decrease the log odds ratio of proposing bylaws by 0.396 (P-value < 0.05) or 0.776 (P-value <0.001) respectively, compared to non-merged municipalities. Also, municipalities merged through absorption significantly decrease the log odds ratio of proposing or approving amendments by 0.42 (P-value <0.05) or 0.510 (P-value <0.05) respectively, compared to those unmerged. However, municipalities merged through creation of a new municipality do not show statistically significant difference

from those unmerged in terms of amendment proposal or approval, or bylaw approval. Among the control variables, population size (logged) is the most important and significant factor positively affecting legislative performance, ranging from 0.366 for amendment approval to 0.75 for bylaw proposal. For sensitivity checks on these results, we additionally estimated the same models by changing a control variable or considering a regional-fixed effect. Appendix 1 displays the results with local council budget, rather than local council salary. Appendix 2 conveys the results with regional-fixed effects. Municipalities merged through the creation of a new municipality still record a significant negative effect on bylaw proposal even if the magnitudes are decreased. Furthermore, we reran the same models dropping the population variable, which causes high correlation with local council salary or budget. However, the results in Appendix 3 do not differ from those from the main models. These results show the robustness of our results.

Finally, Figure 2 shows the predicted probability of average councilor's legislative activity by merger type with 95% Confidence Interval (CI). Noticeably, only municipal merger through new creation significantly decreases average councilor's probability of proposing bylaw by 5% from 11% (non-merged) to 6% (new creation). [viii]

Regarding the continuous dependent variables, we chose a panel tobit model. This is because big portions of their values are zero as seen in Figure 1. Table 5 shows that the continuous dependent variables have within and between variations with similar magnitude except bylaw approval/councilor. A random-effects panel tobit model was estimated by *xttobit* with *re* option in STATA. We fit a panel tobit model for legislative performances on merger type and various controls including year-fixed effects. The only available panel estimator is *xttobit* with *re* option since a panel tobit with fixed effects is not applicable (Cameron & Trivedi, 2010, p. 631). Table 9 conveys the results from the RE panel tobit models. Note that *sigma_u*, the estimated standard deviation for the RE portion or within variation, is statistically significant. This implies that an RE tobit model is more appropriate than a pooled one. The fraction of total variance contributed by the within variance, rho, ranges from 12% (bylaw approval) to 37.8% (amendment approval). Table 8 shows that municipalities merged through the creation of a new municipality significantly decrease legislative performance by 0.036 (p-value< 0.001). It also reports that merged municipalities through absorption record lower performance of amendment proposal by 0.026 (p-value < 0.05) and amendment approval by 0.031 (p-value<0.05). This means that local councilors in the municipalities that experienced merger through new municipality creation perform lower than those in non-merged munici-

palities when assessed by bylaw proposals as well as proposal and approval of amendment bills. Size of population in log is also the most significant effect on municipal legislative activity, as in cases of the binary dependent variables. We repeated the same procedures for robustness check and find that the main results do not significantly change (see Appendix 4-6).

Discussions and Limitations

This study assesses how municipal merger affects legislative performance by using a dataset of 754 Japanese city-level governments from 2008 to 2014. We hypothesized that municipal merger discourages performance of legislative activity by local councils. Results suggest that municipal merger is negatively associated with bylaw proposals by councils. Local councils experiencing municipal merger propose fewer municipal bylaws. This result supports our hypothesis.

More specifically, the results suggest that only the effect of merger through creation of new municipality, not merger through absorption, is statistically significant. This might be because the former may require more coordination efforts among merger partners than the latter. In the case of municipal absorption, one central municipality absorbs other small municipalities. Typically, the new unit does acquire a new name, but preserves the name of larger municipality. Organizational culture and the norms of the larger municipality and local council may tend to dominate in cases where smaller municipalities are absorbed. On the other hand, in the case of mergers through the creation of a new municipality, merger partners need more effort to coordinate in establishing procedures, norms, and organizational culture in merged municipalities. Therefore, such differences in efforts required to manage municipalities after merger may affect differences in outcomes.

The results also suggest that only bylaw proposal achieves statistically significant results, not revision proposal, bylaw approval, and revision approval. Regarding the difference between proposal and approval, as explained previously, the number of bylaw or revision approvals per council is notably smaller than that of bylaw or revision proposals, respectively. Also, the number of municipalities who approve at least one bylaw or revision is notably smaller bylaw or revision is notably smaller than that of municipalities who propose at least one bylaw or revision, respectively. Table 4 shows these different distributions in binary as well as continuous where the mean and standard deviation of bylaw or revision approvals are lower than those of bylaw or revision proposals, respectively. Such lack of variation may have led to the result. With respect to bylaw and revision, there are differences in discretion of local councilors between them. Local councilors can have

more initiative in the proposal of bylaws because they do not require recommendation or approval of mayors for the councilors to do so. On the other hand, whether or not local councilors propose revisions to mayors' proposals for bylaws depends on the quality of the proposals and other factors that affect mayor-council relations. If local councilors are satisfied with the bylaw proposed by the mayor, they do not necessarily propose revisions. Furthermore, if a mayor and local councilors belong to the same political party, local councilors may have less incentive for submitting a revision proposal. Therefore, such gaps in discretion of local councilors may have affected the differences in our results.

The finding of our study is in line with studies that report negative impacts of jurisdiction size on citizens' political behavior (Hansen 2013; Gendźwill and Swianiewicz 2016; Hansen 2015; Lassen and Serritzlew 2011) and influence of local councilors (Kjaer, Hjelmar, and Leth Olsen 2010). Our study shows that enlarging municipal size through merger is also negatively associated with other dimension of local democracy: legislative performance. Municipal mergers have been carried out in many developed countries. However, their drawbacks, especially from a perspective local democracy, have not been fully considered by policy makers. Results of this study imply that politicians and policy makers should consider such potential negative impacts of administrative reforms on local democracy. Our study is not without limitations. Our study mainly focuses on short-term impacts of municipal merger as our dataset covers a seven-year period (2008-2014), which begins only three years after the peak period of merger reform (2005). The effects of municipal mergers on local democracy might differ if we include more time period in the analysis. Furthermore, data unavailability impedes us from comparing legislative performance in the pre-merger municipalities with one in the post-merger municipalities. While we control for several factors that are likely to affect our dependent variables, we may have omitted other factors that simultaneously could affect both merger and the dependent variables. These weaknesses should be further compensated for by further data collection efforts through municipal surveys and testing the external validity in other contexts and countries.

REFERENCES

Allers, Maarten A, and J Bieuwe Geertsema. 2016. "The effects of local government amalgamation on public spending, taxation, and service levels: evidence from 15 years of municipal consolidation." *Journal of Regional Science* 56 (4):659-682.

Andrews, Rhys. 2013. "Local government amalgamation and financial sustainability: the case of England and Wales." *Public Finance and Management* 13 (2):124.

Andrews, Rhys, and George A Boyne. 2009. "Size, structure and administrative overheads: An empirical analysis of English local authorities." *Urban Studies* 46 (4):739-759.

Avellaneda, Claudia N, and Ricardo Corrêa Gomes. 2015. "Is Small Beautiful? Testing the Direct and Nonlinear Effects of Size on Municipal Performance." *Public Administration Review* 75 (1):137-149.

Bhatti, Yosef, Mette Gørtz, and Lene Holm Pedersen. 2015. "The Causal Effect of Profound Organizational Change When Job Insecurity Is Low—A Quasi-experiment Analyzing Municipal Mergers." *Journal of Public Administration Research and Theory*:muv006.

Bhatti, Yosef, Asmus L Olsen, and Lene Holm Pedersen. 2011. "Administrative professionals and the diffusion of innovations: The case of citizen service centres." *Public Administration* 89 (2):577-594.

Blom-Hansen, Jens, Kurt Houlberg, and Søren Serritzlew. 2014. "Size, democracy, and the economic costs of running the political system." *American Journal of Political Science* 58 (4):790-803.

Boyne, George A. 1996. "Scale, performance and the new public management: an empirical analysis of local authority services." *Journal of Management Studies* 33 (6):809-826.

Cameron, Adrian Colin, and Pravin K Trivedi. 2010. *Microeconometrics using stata*. Vol. 5. College Station, TX: Stata press.

Carr, Jered B, and Richard C Feiock. 1999. "Metropolitan government and economic development." *Urban Affairs Review* 34 (3):476-488.

Chihō Gyōzaisei Chōsakai. 2007-2012. "Profiles of Governors and Mayors in Japan (Zenkoku Chiji, Shichōsonchō Meibo)."

Chihō Jichi Sōgō Kenkyūjo. 2007-2012. "List of Local Chief Executives (Zenkoku Shucho Meibo)."

Christenson, James A., and Carolyn E. Sachs. 1980. "The Impact of Government Size and Number of Administrative Units on the Quality of Public Services." *Administrative Science Quarterly* 25 (1):89-101.

CLAIR. 2013. "Local Government in Japan 2012." In. http://www.clair.or.jp/j/forum/pub/pdf/jichi12_en.pdf.

Dahl, Michael S. 2011. "Organizational change and employee stress." *Management Science* 57 (2):240-256.

Dahl, Robert Alan, and Edward R Tufte. 1973. *Size and democracy*. Vol. 2. Stanford, Calif.: Stanford University Press.

Denhardt, Robert B, Janet V Denhardt, and Maria P Aristigueta. 2015. *Managing human behavior in public and nonprofit organizations*. Thousand Oaks, CA: Sage Publications.

Denters, Bas, Michael Goldsmith, Andreas Ladner, Poul Erik Mouritzen, and Lawrence E Rose. 2014. *Size and local democracy*: Edward Elgar Publishing.

Dollery, Brian, Joel Byrnes, and Lin Crase. 2007. "Is bigger better? Local government amalgamation and the South Australian rising to the challenge inquiry." *Economic Analysis and Policy* 37 (1):1-14.

Drew, Joseph, Michael A Kortt, and Brian Dollery. 2014. "Economies of scale and local government expenditure: evidence from Australia." *Administration & Society* 46 (6):632-653.

Ehime Prefecture. n.d. "Ehimeken Shichoson Gappei Q&A [Municipal Consolidation in Ehime Prefecture, Q&A]." Accessed May 18. http://www.pref.ehime.jp/h10800/gappei/faq/documents/faq_all.pdf.

Ferraz, Claudio, and Frederico Finan. 2009. Motivating politicians: The impacts of monetary incentives on quality and performance. National Bureau of Economic Research.

Fitzpatrick, Jody, Malcolm Goggin, Tanya Heikkila, Donald Klingner, Jason Machado, and Christine Martell. 2011. "A new look at comparative public administration: Trends in research and an agenda for the future." *Public Administration Review* 71 (6):821-830.

Fox, William F, and Tami Gurley-Calvez. 2006. Will consolidation improve sub-national governments? *World Bank policy research working paper* (3913).

Fukuoka City Council Secretariat. 2015. "*Gikai Chousa Repouto: Giin Teian Seisaku Jourei ni tsuite* [Local Council Report-Policy recommendation ordinance]." Accessed April 21. http://www.city.fukuoka.lg.jp/data/open/cnt/3/1374/1/tyousareport_No15.pdf.

Gendźwiłł, Adam, and Pawel Swianiewicz. 2016. "Does Local Democracy Perform Better in Smaller Jurisdictions? Survey Evidence from Poland." *Lex localis-Journal of Local Self-Government* 14 (4).

Grissom, Jason A, and James R Harrington. 2013. "Local Legislative Professionalism." *American Politics Research* 41 (1):76-98.

Hansen, Sune Welling. 2013. "Polity Size and Local Political Trust: A Quasi-experiment Using Municipal Mergers in Denmark." *Scandinavian Political Studies* 36 (1):43-66.

Hansen, Sune Welling. 2015. "The democratic costs of size: How increasing size affects citizen satisfaction with local government." *Political Studies* 63 (2):373-389.

Hirose, Katsuya, and Local Council Reform Forum. 2009-2014. *Gikai Kaikaku Hakushi 2009-2014 [White Paper on Local Council Reform 2009-2014]*. Tokyo, Japan: Seikatsusha.

Hirose, Katsuya, and Local Council Reform Forum. 2014. *Gikai Kaikaku Hakushi 2014 [White Paper on Local Council Reform 2014]*. Tokyo, Japan: Seikatsusha.

Hirsch, Werner Z. 1968. "The Supply of Urban Public Services." In *Issues in Urban Economics*, edited by Harvey Perloff and Lowdon Wingo, 477–526. Baltimore: Johns Hopkins University Press.

Holzer, Marc, John Fry, Etienne Charbonneau, Gregg Van Ryzin, Tiankai Wang, and Eileen Burnash. 2009. "Literature Review and Analysis Related to Optimal Municipal Size and Effi ciency. Report prepared for the Local Unit Alignment, Reorganization, and Consolidation Commission."

Accessed August 9. http://www.nj.gov/dca/affiliates/luarcc/pdf/final_optimal_municipal_size_&_efficiency.pdf.

Hou, Yilin, Anna Ya Ni, Ora-orn Poocharoen, Kaifeng Yang, and Zhirong J Zhao. 2011. "The case for public administration with a global perspective." *Journal of Public Administration Research and Theory* 21 (suppl 1):i45-i51.

Imasato, Shigeru. 2005. "Chiho Gikai to Jichitai [Local assemblies and their governance in Japan]." *Doshisha University policy & management* 7 (1):1-11.

Jreisat, Jamil E. 2002. *Comparative public administration and policy*: Westview Press.

Jreisat, Jamil E. 2005. "Comparative public administration is back in, prudently." *Public Administration Review* 65 (2):231-242.

Kawasaki, Nobufumi. 2000. "Urban democracy in Japan." In *Urban Democracy*, edited by Oscar Gabriel, Vincent Hoffmann-Martinot and Hank V Savitch, 397-429. Springer.

Kjaer, Ulrik, Ulf Hjelmar, and Asmus Leth Olsen. 2010. "Municipal amalgamations and the democratic functioning of local councils: the case of the Danish 2007 structural reform." *Local government studies* 36 (4):569-585.

Larsen, Christian Albrekt. 2002. "Municipal size and democracy: a critical analysis of the argument of proximity based on the case of Denmark." *Scandinavian Political Studies* 25 (4):317-332.

Lassen, David Dreyer, and Søren Serritzlew. 2011. "Jurisdiction size and local democracy: Evidence on internal political efficacy from large-scale municipal reform." *American Political Science Review* 105 (02):238-258.

Lomax, KS. 1952. "A criterion of efficiency in local administration." *Journal of the Royal Statistical Society. Series A (General)* 115 (4):521-523.

Meier, Kenneth J, Amanda Rutherford, and Claudia N Avellaneda, eds. 2017. *Comparative Public Management: Why National, Environmental, and Organizational Context Matters*: Georgetown University Press.

MIC. 2014. "*Shichouson Suu no Hensen to Meiji Showa no Daigappei no Rokucho* [Numbers of local goverments and Meiji and Showa Great Merger]." Accessed July 2. http://www.soumu.go.jp/gapei/gapei2.html.

MIC. 2014-2015. Shichoson Betsu Kessan Joukyou Shirabe Heisei 25-26 nendo [Settlement of Municipality Finances: 2013-2014].

MIC. 2015a. "Chihou Gikai Seidotou Ni Tsuite. [Local Council System]." Accessed April 20. https://www.google.se/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&cad=rja&uact=8&ved=0ahUKEwialrrluLPTAhVNPVAKHbVDCbsQFgglMAA&url=http%3A%2F%2Fwww.soumu.go.jp%2Fmain_content%2F000390643.pdf&usg=AFQjCNF1-wTljoHsXoGNL0yykDt4YUp-tw&sig2=GNCYOTmRHFFFHEkxw_ecbw.

MIC. 2015b. Regional Statistics Database.

MIC. n.d.-a. "Chihou Koukyou Dantai Ga Ninau Jimu. [Main affairs that are handled by local governments]." Accessed May 18, 2015. http://www.soumu.go.jp/main_content/000088794.pdf.

MIC. n.d.-b. "*Nendobetsu Gappei Kensu*. [Number of Municipal Mergers]." Accessed April 15. http://www.soumu.go.jp/main_content/000283314.pdf.

MIC. n.d.-c. "*Shichoson Gappei Shiryoshu.* [Information Packet of Municipal Consolidations]." Accessed May 18. http://www.soumu.go.jp/gapei/gapei.html.

Miyazaki, Takeshi. 2014. "Municipal consolidation and local government behavior: evidence from Japanese voting data on merger referenda." *Economics of Governance* 15 (4):387-410.

Mouritzen, Poul Erik. 1989. "City size and citizens' satisfaction: two competing theories revisited." *European Journal of Political Research* 17 (6):661-688.

Nara City Office. n.d. "Gikai Yougo Shu. [Local Council Glossary]." Accessed April 20. http://www.city.nara.lg.jp/www/contents/1408084920610/index.html.

Newton, Kenneth. 1982. "Is small really so beautiful? Is big really so ugly? Size, effectiveness, and democracy in local government." *Political studies* 30 (2):190-206.

O'Toole, Laurence J, and Kenneth J Meier. 2014. "Public management, context, and performance: In quest of a more general theory." *Journal of Public Administration Research and Theory*:muu011.

OECD. 2014. "OECD Regional Outlook 2014 Regions and Cities: Where Policies and People Meet." In. Paris: OECD Publishing. http://dx.doi.org/10.1787/9789264201415-en.

Oxford University Press. 2016. "Oxford Dictionaries." http://www.oxforddictionaries.com/.

Pettigrew, Andrew M, Richard W Woodman, and Kim S Cameron. 2001. "Studying organizational change and development: Challenges for future research." *Academy of management journal* 44 (4):697-713.

Pfeffer, Jeffrey, and Gerald R Salancik. 1978. *The external control of organizations: A resource dependence perspective*. New York: Harper & Row.

Raadschelders, Jos CN, and Kwang-Hoon Lee. 2011. "Trends in the study of public administration: Empirical and qualitative observations from Public Administration Review, 2000–2009." *Public Administration Review* 71 (1):19-33.

Reingewertz, Yaniv. 2012. "Do municipal amalgamations work? Evidence from municipalities in Israel." *Journal of Urban Economics* 72 (2):240-251.

Shepherd, William G. 1990. *The Economics of Industrial Organization*. Englewood Cliff s, NJ: Prentice Hall.

Shipan, Charles R, and Craig Volden. 2006. "Bottom-up Federalism: the diffusion of antismoking policies from US cities to states." *American journal of political science* 50 (4):825-843.

Steiner, Reto, and Claire Kaiser. 2016. "Effects of amalgamations: evidence from Swiss municipalities." *Public Management Review*:1-21.

Stigler, George J. 1958. "The Economies of Scale." *Journal of Law and Economics* 1:54-71.

Suzuki, Kohei. 2016. "Politics of Municipal Consolidation." In *Global Encyclopedia of Public Administration, Public Policy, and Governance*, edited by Ali Farazmand, 1-7. Cham: Springer International Publishing.

Suzuki, Kohei, and Kentaro Sakuwa. 2016. "Impact of municipal mergers on local population growth: an assessment of the merger of Japanese municipalities." *Asia Pacific Journal of Public Administration* 38 (4):223-238. doi: 10.1080/23276665.2016.1258887.

Takagishi, Yukihiro, Masatsugu Sakata, and Toshinori Kitamura. 2012. "Influence of the Municipal Merger on Local Government Employees' Stress Response in Japan." *Industrial health* 50 (2):132-141.

Teodoro, Manuel P. 2009. "Bureaucratic job mobility and the diffusion of innovations." *American Journal of Political Science* 53 (1):175-189.

Vojnovic, Igor. 2000. "The transitional impacts of municipal consolidations." *Journal of Urban Affairs* 22 (4):385-417.

Whetten, David A. 1978. "Coping with incompatible expectations: An integrated view of role conflict." *Administrative Science Quarterly*:254-271.

Yamada, Kyohei. 2016. "From a Majority to a Minority How Municipal Mergers in Japan Changed the Distribution of Political Powers and the Allocation of Public Services Within a Merged Municipality." *Urban Affairs Review*:1078087416669603.

Yokomichi, Kiyotaka. 2007. The development of municipal mergers in Japan.

Yoon, Jong Bin, and Hoi Ok Jeong. 2016. "Developing a measure of legislative professionalism for local assemblies in South Korea." *Philippine Political Science Journal*:1-17.

[i] See OECD (2014) and Suzuki (2016).

[ii] There was 1 merger case in 1999, 2 in 2000, 3 in 2001, 6, in 2002, 30 in 2003, 215 in 2004, 325 in 2005, 12 in 2006, 6 in 2007, 12 in 2008, 30 in 2009, 6 in 2011, and 1 in 2014(MIC n.d.-b).

[iii] Municipalities provide services which include social relief; the establishment and management of nursing homes for the elderly; elementary and middle schools; nursing insurance; national health insurance; urban design; construction and management of municipal roads, bridges, water, and sewerage; collection and disposal of general waste; fire-fighting operations; medical emergency support; and resident registration (MIC, n.d.-a).

[iv] 46 municipalities that experienced merger after 2007 are dropped from our sample. The boundaries of the municipalities that experienced merger during the period of our dataset (2007-2012) are not identical before and after the merger. Such inconsistency in the unit of analysis during our dataset period makes these municipalities less comparable across time.

[v] The white paper is published by a group of scholars and practitioners that promote reform of local councils.

[vi] For instance, bylaw policy proposals address policy issues such as preventing damage caused by the collapse of an abandoned house, securing public transportation means for elderly citizens and people with disabilities, and penalizing street solicitation for adult entertainment shops (Fukuoka City Council Secretariat, 2015).

[vii] Note that non-linear panel models, unlike linear panel models, cannot apply model specification tests such as BP (Breusch and Pagan), LM test for random errors model vs. Pooled logits, or modified Wald test for groupwise heteroskedasticity.

[viii] Please note the predicted probabilities are computed when the merger type changes from 0 (non-merged) through 1 (absorption) to 2 (new creation), by setting all other variables at means. Please note that this prediction might be underestimated since within variations are set as 0 ($\alpha_i=0$), which can be a non-representative evaluation point.

TABLES

TABLE 1, LEGISLATIVE ACTIVITY PER YEAR: PROPOSAL

Number of Municipalities

	Bylaws		Amendments	
year	**0**	**≥1**	**0**	**≥1**
2008	635	65	564	138
	(90.7)	(9.3)	(80.3)	(19.7)
2009	651	75	517	209
	(89.67)	(10.33)	(71.21)	(28.79)
2010	674	78	517	235
	(89.63)	(10.37)	(68.75)	(31.25)
2011	661	81	534	205
	(89.08)	(10.92)	(72.26)	(27.74)
2012	654	83	553	194
	(88.74)	(11.26)	(74.03)	(25.97)
2013	629	105	543	189
	(85.69)	(14.31)	(74.18)	(25.82)
2014	633	100	560	175
	(86.36)	(13.64)	(76.19)	(23.81)
Total	4,537	587	3,788	1345
	(88.54)	(11.46)	(73.80)	(26.20)

( ) %

TABLE 2, LEGISLATIVE ACTIVITY PER YEAR: APPROVAL

Number of Municipalities

	Bylaws		Amendments	
year	**0**	**≥1**	**0**	**≥1**
2008	677	24	626	76
	(96.6)	(3.4)	(89.2)	(10.8)
2009	694	32	612	114
	(95.59)	(4.41)	(84.30)	(15.70)
2010	725	27	622	128
	(96.41)	(3.59)	(82.93)	(17.07)
2011	704	38	593	101
	(94.88)	(5.12)	(85.45)	(14.55)
2012	696	43	653	94
	(94.18)	(5.82)	(87.42)	(12.58)
2013	627	63	599	98
	(90.87)	(9.13)	(85.94)	(14.06)
2014	639	64	622	87
	(90.90)	(9.10)	(87.73)	(12.27)
Total	4,762	291	4,327	698
	(94.24)	(5.76)	(86.11)	(13.89)

( ) %

TABLE 3, DESCRIPTIVE STATISTICS

	Mean	Std.Dev.	Min	Max
Dependent Variables (dummy)				
Bylaw Proposal	0.11	0.32	0	1
Amendment Proposal	0.26	0.44	0	1
Bylaw Approval	0.06	0.23	0	1
Amendment Approval	0.14	0.35	0	1
Dependent Variables (continuous)				
Bylaw Proposal/councilor	0.01	0.03	0	0.59
Amendment Proposal/councilor	0.02	0.05	0	0.65
Bylaw Approval/councilor	0.00	0.01	0	0.18
Amendment Approval/councilor	0.01	0.03	0	0.63
Independent Variable				
Municipal merger (0: no merger, 1: absorption, 2: new municipality)	0.86	0.92	0	2
Controls				
Local councilor salary/councilor	6866.92	2237.73	1506.75	23,913.04
Local council budget /councilor	12,331.45	4,308.98	4473.556	37,097.32
Mayors' vote share (%)	59.23	25.06	0	100
Mayor's political party support	0.92	1.27	0	6
Councilors supporting mayor (%)	8.16	15.61	0	88.09
Population	139683	254503	3823	3,644,429
Unemployment rate (%)	6.36	1.67	2.4	18.20
Percentage of senior citizens (%)	24.35	5.45	9.1	43.80
Year dummy (baseline=2008)	3.02	1.99	0	6

TABLE 4, CORRELATION MATRIX

		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1	**Bylaw Proposal Dummy**	1																	
2	**Amendment Proposal Dummy**	0.13	1																
3	**Bylaw Approval Dummy**	0.69	0.07	1															
4	**Amendment Approval Dummy**	0.03	0.66	0.06	1														
5	**Bylaw Proposal/councilor**	0.73	0.14	0.40	0.01	1													
6	**Amendment Proposal/councilor**	0.08	0.69	0.06	0.56	0.08	1												
7	**Bylaw Approval/councilor**	0.62	0.07	0.90	0.07	0.44	0.07	1											
8	**Amendment Approval/councilor**	0.01	0.47	0.04	0.71	0.01	0.75	0.05	1										
9	**Municipal merger**	-0.14	-0.04	-0.05	0.02	-0.13	-0.06	-0.04	-0.01	1									
10	**Local councilor salary/councilor**	0.30	0.10	0.18	0.03	0.21	0.02	0.09	-0.02	-0.38	1								
11	**Local council budget /councilor**	0.31	0.11	0.19	0.04	0.22	0.03	0.10	-0.02	-0.37	0.91	1							
12	**Mayors' vote share (%)**	-0.07	-0.06	-0.07	-0.05	-0.05	-0.04	-0.07	-0.03	0.01	-0.03	-0.07	1						
13	**Mayor's political party support**	0.09	0.01	-0.01	-0.04	0.09	0.00	-0.03	-0.04	-0.19	0.32	0.28	0.09	1					
14	**Councilors supporting mayor (%)**	0.21	0.08	0.01	-0.04	0.23	0.02	-0.01	-0.05	-0.26	0.49	0.47	0.04	0.71	1				
15	**Population**	0.29	0.09	0.24	0.07	0.15	0.00	0.11	-0.01	-0.16	0.74	0.72	-0.04	0.17	0.31	1			
16	**Unemployment rate (%)**	-0.02	-0.01	-0.02	0.01	-0.01	0.01	-0.02	0.00	-0.11	-0.01	0.03	-0.04	-0.01	-0.01	0.00	1		
17	**Percentage of senior citizens (%)**	-0.13	-0.03	-0.05	0.01	-0.10	0.00	-0.03	0.04	0.37	-0.48	-0.42	0.00	-0.25	-0.29	-0.27	0.09	1	
18	**Year dummy (baseline=2008)**	0.04	0.01	0.08	-0.01	0.02	0.02	0.08	0.00	0.00	-0.03	0.18	-0.30	-0.07	-0.07	0.00	0.16	0.19	1

TABLE 5, PANEL DESCRIPTIVE STATISTICS

Variable		Mean	Std. Dev.	Min	Max	Observations		
Dependent Variables (dummy)								
Bylaw Proposal	overall	0.11	0.32	0.00	1.00	N	=	5124.0
	between		0.19	0.00	1.00	n	=	754.0
	within		0.25	-0.74	0.97	T-bar	=	6.8
Amendment Proposal	overall	0.26	0.44	0.00	1.00	N	=	5133.0
	between		0.26	0.00	1.00	n	=	754.0
	within		0.35	-0.60	1.12	T-bar	=	6.8
Bylaw Approval	overall	0.06	0.23	0.00	1.00	N	=	5053.0
	between		0.11	0.00	0.86	n	=	754.0
	within		0.21	-0.80	0.91	T-bar	=	6.7
Amendment Approval	overall	0.14	0.35	0.00	1.00	N	=	5025.0
	between		0.20	0.00	1.00	n	=	754.0
	within		0.28	-0.72	1.00	T-bar	=	6.7
Dependent Variables (Continuous)								
Bylaw Proposal/councilor	overall	0.01	0.03	0.00	0.59	N	=	5110.0
	between		0.02	0.00	0.24	n	=	754.0
	within		0.02	-0.23	0.41	T-bar	=	6.8
Amendment Proposal/councilor	overall	0.02	0.05	0.00	0.65	N	=	5119.0
	between		0.03	0.00	0.21	n	=	754.0
	within		0.04	-0.15	0.57	T-bar	=	6.8
Bylaw Approval/councilor	overall	0.00	0.01	0.00	0.18	N	=	5039.0
	between		0.00	0.00	0.03	n	=	754.0
	within		0.01	-0.03	0.16	T-bar	=	6.7
Amendment Approval/councilor	overall	0.01	0.03	0.00	0.63	N	=	5013.0
	between		0.02	0.00	0.15	n	=	754.0
	within		0.03	-0.14	0.53	T-bar	=	6.6
Independent Variable								
Municipal merger	overall	0.86	0.92	0.00	2.00	N	=	5278.0
	between		0.92	0.00	2.00	n	=	754.0
	within		0.00	0.86	0.86	T	=	7.0
Controls								
Local councilor salary/councilor	overall	6840.83	2224.31	1506.75	23913.04	N	=	5264.0
	between		2190.61	2701.73	22894.70	n	=	754.0
	within		396.77	3574.43	12948.79	T-bar	=	7.0
Local councilor salary/councilor (ln)	overall	8.79	0.29	7.32	10.08	N	=	5264.0
	between		0.29	7.90	10.04	n	=	754.0
	within		0.05	7.97	9.28	T-bar	=	7.0
Local council budget /councilor	overall	12270.67	4288.99	4473.56	37097.32	N	=	5264.0
	between		4069.31	5285.87	33535.86	n	=	754.0
	within		1370.15	6668.72	25966.15	T-bar	=	7.0
Mayors' vote share (%)	overall	59.28	25.06	0.00	100.00	N	=	5271.0
	between		12.21	26.65	95.74	n	=	754.0

	within		21.89	-22.42	123.70	T-bar	=	7.0
Mayor's political party support	overall	0.91	1.26	0.00	6.00	N	=	5274.0
	between		1.04	0.00	4.86	n	=	754.0
	within		0.71	-2.52	5.19	T-bar	=	7.0
Councilors supporting mayor (%)	overall	8.00	15.43	0.00	88.09	N	=	5278.0
	between		13.82	0.00	85.93	n	=	754.0
	within		6.89	-48.25	71.62	T	=	7.0
Population (ln)	overall	11.29	0.90	8.25	15.11	N	=	5278.0
	between		0.90	8.36	15.10	n	=	754.0
	within		0.02	11.18	11.40	T	=	7.0
Unemployment rate (%)	overall	6.37	1.68	2.40	18.20	N	=	5278.0
	between		1.59	2.54	17.17	n	=	754.0
	within		0.54	2.80	8.23	T	=	7.0
Percentage of senior citizens (%)	overall	24.34	5.43	9.10	43.80	N	=	5278.0
	between		5.25	10.96	42.63	n	=	754.0
	within		1.41	19.48	26.28	T	=	7.0
Year dummy (baseline=2008)	overall	3.00	2.00	0.00	6.00	N	=	5278.0
	between		0.00	3.00	3.00	n	=	754.0
	within		2.00	0.00	6.00	T	=	7.0

TABLE 6, YEAR-TO-YEAR TRANSITIONS IN COUNCILOR ACTIVITY

Bylaw Proposed	Bylaw Proposed	
	0	1
0	91.4	8.6
1	62.7	37.3

Amendment Proposed	Amendment Proposed	
	0	1
0	80.6	19.4
1	51.0	49.0

Bylaw Approved	Bylaw Approved	
	0	1
0	94.6	5.4
1	80.5	19.6

Amendment Approved	Amendment Approved	
	0	1
0	89.2	10.8
1	63.7	36.4

TABLE 7, CORRELATIONS IN DEPENDENT VARIABLES

Bylaw Proposed	0	L1	L2	L3	L4
0	1.00				
L1	0.25	1.00			
L2	0.28	0.30	1.00		
L3	0.27	0.29	0.33	1.00	
L4	0.23	0.27	0.31	0.32	1.00

Amendment Proposed	0	L1	L2	L3	L4
0	1.00				
L1	0.31	1.00			
L2	0.27	0.29	1.00		
L3	0.23	0.25	0.27	1.00	
L4	0.21	0.20	0.22	0.27	1.00

Bylaw Approved	0	L1	L2	L3	L4
0	1.00				
L1	0.14	1.00			
L2	0.12	0.17	1.00		
L3	0.09	0.09	0.15	1.00	
L4	0.04	0.05	0.08	0.08	1.00

Amendment Approved	0	L1	L2	L3	L4
0	1.00				
L1	0.26	1.00			
L2	0.29	0.23	1.00		
L3	0.22	0.25	0.25	1.00	
L4	0.17	0.16	0.19	0.26	1.00

TABLE 8, EXPLAINING LEGISLATIVE PERFORMANCE: 2008-2014 (DUMMY VARIABLE: XTLOGIT MODEL)

	DV: Legislative Proposal		**DV: Legislative Approval**	
	Bylaw	**Amendment**	**Bylaw**	**Amendment**
	M1	M2	M3	M4
Independent variables: (baseline=No merger)				
Municipal absorption	-0.396*	-0.420*	0.036	-0.510*
	(0.175)	(0.170)	(0.201)	(0.209)
New municipality	-0.776***	-0.108	-0.257	0.014
	(0.178)	(0.169)	(0.202)	(0.167)
Controls				
Local councilor salary (ln)	0.573	-0.035	1.126*	-0.097
	(0.510)	(0.370)	(0.541)	(0.474)
Mayors' vote share (%)	-0.009***	-0.004*	-0.008**	-0.005*
	(0.003)	(0.002)	(0.003)	(0.002)
Mayor's political party support	-0.223**	-0.161*	-0.041	0.008
	(0.073)	(0.070)	(0.084)	(0.107)
Councilors supporting mayor(%)	0.0195**	0.0131*	-0.0157*	-0.0219*
	(0.007)	(0.007)	(0.008)	(0.010)
Population (ln)	0.753***	0.385**	0.550**	0.366*
	(0.171)	(0.120)	(0.182)	(0.168)
Percentage of senior citizens (%)	0.028	0.017	0.031	0.028
	(0.018)	(0.011)	(0.021)	(0.021)
Unemployment rate (%)	-0.086	-0.016	-0.0936*	0.012
	(0.051)	(0.043)	(0.039)	(0.042)
Constant	-15.88***	-5.869**	-19.32***	-6.244
	(3.133)	(2.234)	(3.468)	(3.215)
Year fixed effects	Yes	Yes	Yes	Yes
lnsig2u	0.129	0.583***	-0.607	0.773***
	(0.178)	(0.089)	(0.360)	(0.117)
rho	0.257***+	0.353***+	0.142***+	0.397***+
	(0.034)	(0.020)	(0.044)	(0.028)
N	5106	5115	5035	5009
AIC	3055.1	5339.7	2023.7	3686.3
BIC	3166.3	5450.9	2134.6	3797.2

( ) Bootstrap Standard Error, using vce(bootstrap) in Stata

** p<0.05, ** p<0.01, *** p<0.001*

+ LR test of rho=0

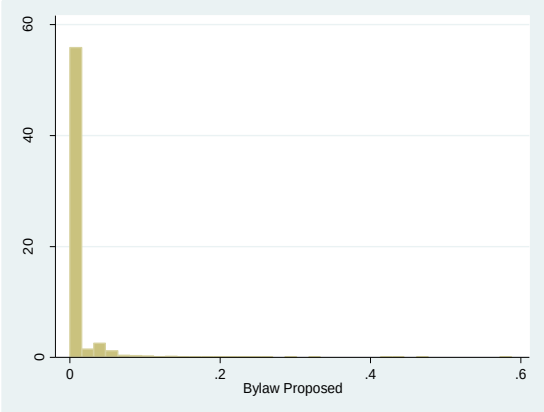
TABLE 9, EXPLAINING LEGISLATIVE PERFORMANCE: 2008-2014 (CONTINUOUS VARIABLE: TOBIT MODEL)

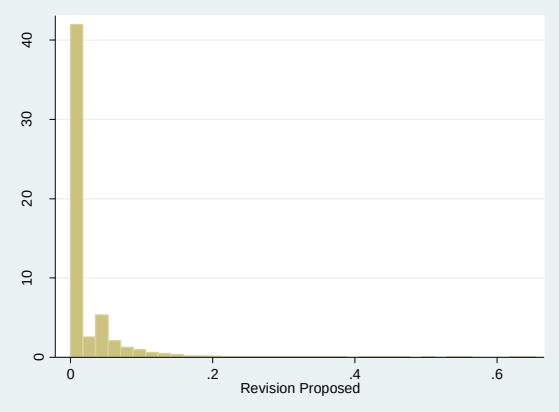
	DV: Legislative Proposal		DV: Legislative Approval	
	Bylaw	Amendment	Bylaw	Amendment
	M1	M2	M3	M4
Independent variables: (baseline=No merger)				
Municipal absorption	-0.017	-0.026*	0.002	-0.031*
	(0.010)	(0.011)	(0.008)	(0.014)
New municipality	-0.036***	-0.013	-0.008	-0.005
	(0.009)	(0.009)	(0.007)	(0.011)
Controls				
Local councilor salary (ln)	0.043	0.009	0.052**	0.007
	(0.022)	(0.021)	(0.019)	(0.026)
Mayors' vote share (%)	-0.0004***	-0.0002	-0.0003**	-0.0003*
	(0.000)	(0.000)	(0.000)	(0.000)
Mayor's political party support	-0.011**	-0.005	-0.003	0.002
	(0.004)	(0.003)	(0.003)	(0.004)
Councilors supporting mayor (%)	0.001***	0.000	-0.0005	-0.001***
	(0.000)	(0.000)	(0.000)	(0.000)
Population (ln)	0.025***	0.009	0.013*	0.010
	(0.007)	(0.007)	(0.006)	(0.009)
Percentage of senior citizens (%)	0.001	0.001	0.001	0.002
	(0.001)	(0.001)	(0.001)	(0.001)
Unemployment rate (%)	-0.004	-0.001	-0.004	0.000
	(0.002)	(0.002)	(0.002)	(0.002)
Constant	-0.778***	-0.278*	-0.733***	-0.343
	(0.152)	(0.141)	(0.128)	(0.178)
Year fixed effects	Yes	Yes	Yes	Yes
sigma_u	0.058***	0.072***	0.029**	0.082***
sigma_e	0.091***	0.097***	0.078***	0.106***
rho	0.288	0.355	0.120	0.378
N	5106	5115	5035	5009
AIC	926.7	933.0	747.0	1314.0
BIC	1044.4	1050.7	864.5	1431.3

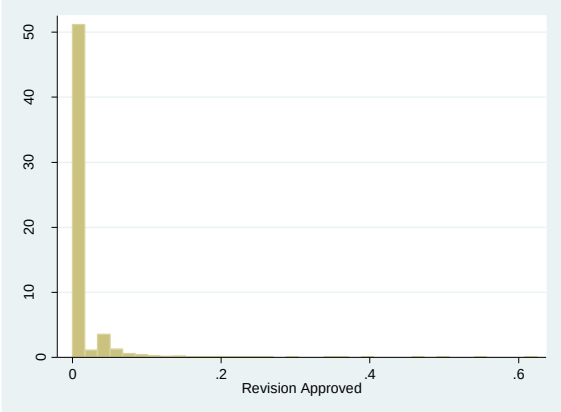
Standard errors in parentheses

** p<0.05, ** p<0.01, *** p<0.001*

FIGURE 1, HISTOGRAMS OF CONTINUOUS DEPENDENT VARIABLES







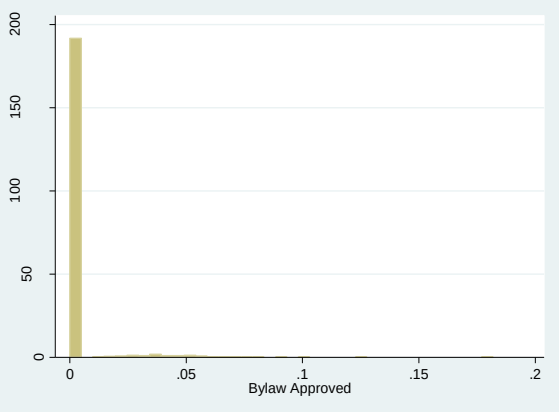
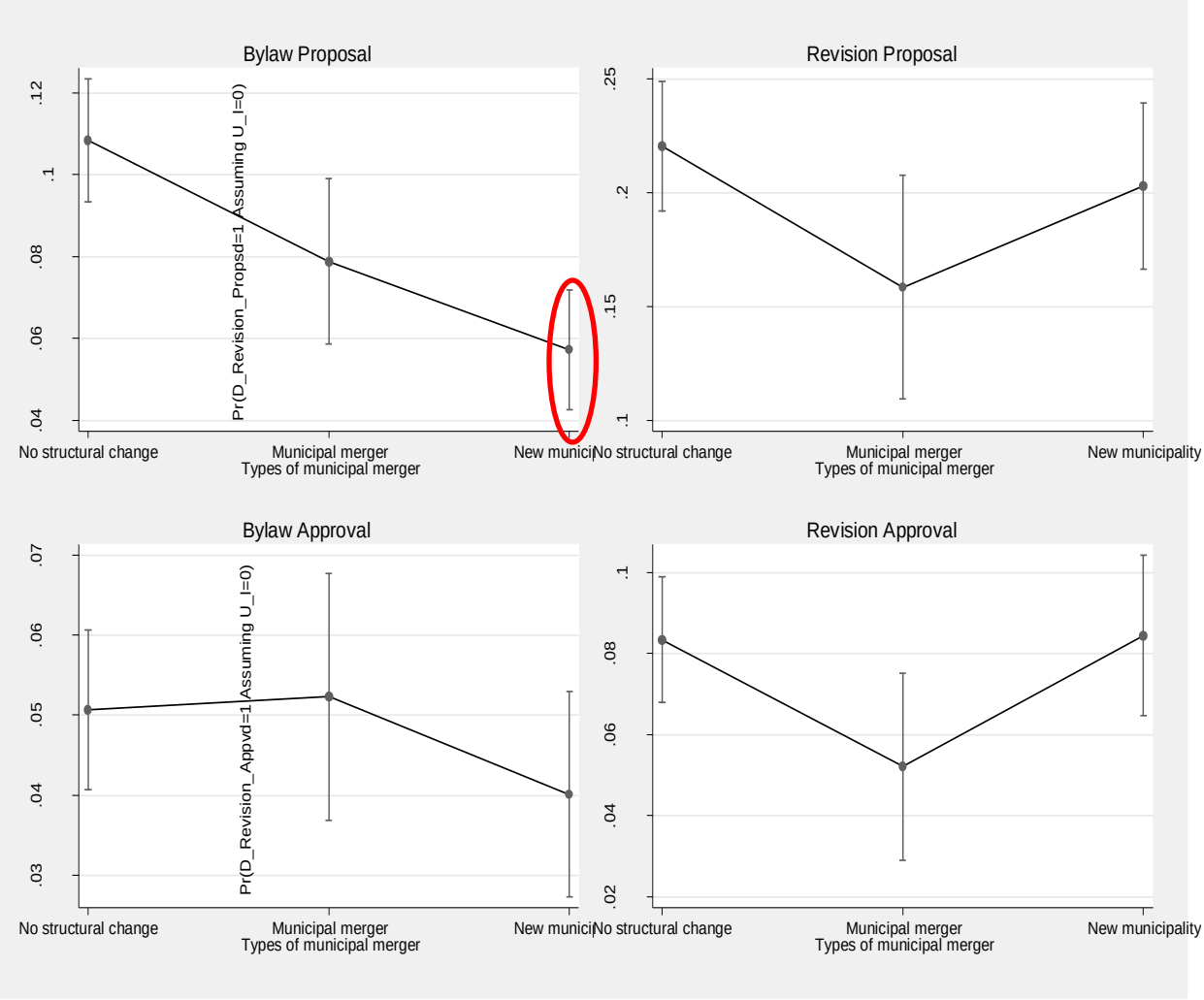


FIGURE 2, PREDICTED PROBABILITY OF AVERAGE COUNCILOR'S ACTIVITY BY MERGER TYPE WITH 95% CI



APPENDIX

APPENDIX 1, EXPLAINING LEGISLATIVE PERFORMANCE: 2008-2014 (DUMMY VARIABLE: XTLOGIT MODEL) USING LOCAL COUNCIL BUDGET

	DV: Legislative Proposal		DV: Legislative Approval	
	Bylaw	**Amendment**	**Bylaw**	**Amendment**
	M1	M2	M3	M4
Independent variables: (baseline=No merger)				
Municipal absorption	-0.354	-0.365	0.097	-0.395
	(0.231)	(0.207)	(0.195)	(0.253)
New municipality	-0.725***	-0.013	-0.207	0.225
	(0.209)	(0.196)	(0.206)	(0.156)
Controls				
Local council budget/councilor (ln)	0.0001	0.000	0.0001**	0.0001*
	(0.000)	(0.000)	(0.000)	(0.000)
Mayors' vote share (%)	-0.009**	-0.004*	-0.008**	-0.005*
	(0.003)	(0.002)	(0.003)	(0.003)
Mayor's political party support	-0.215**	-0.156	-0.027	0.021
	(0.078)	(0.087)	(0.086)	(0.090)
Councilors supporting mayor (%)	0.019**	0.012	-0.017*	-0.025**
	(0.007)	(0.008)	(0.007)	(0.008)
Population (ln)	0.624***	0.209	0.365*	-0.032
	(0.176)	(0.152)	(0.174)	(0.167)
Percentage of senior citizens (%)	0.023	0.013	0.022	0.018
	(0.018)	(0.017)	(0.019)	(0.018)
Unemployment rate (%)	-0.085	-0.017	-0.0923*	0.011
	(0.048)	(0.041)	(0.040)	(0.058)
Constant	-9.993***	-4.606**	-8.256***	-3.498
	(1.972)	(1.685)	(1.754)	(1.887)
Year fixed effects	Yes	Yes	Yes	Yes
lnsig2u	0.126	0.586***	-0.747*	0.748***
	(0.229)	(0.113)	(0.345)	(0.130)
rho	0.256***+	0.353***+	0.126***+	0.391***+
	(0.044)	(0.113)	(0.038)	(0.031)
N	5106	5115	5035	5009
AIC	3055.1	5339.7	2023.7	3686.3
BIC	3166.3	5450.9	2134.6	3797.2

( ) Bootstrap Standard Error, using vce(bootstrap) in Stata
** p<0.05, ** p<0.01, *** p<0.001*
+ LR test of rho=0

APPENDIX 2, EXPLAINING LEGISLATIVE PERFORMANCE: 2008-2014 (BINARY VARIABLE: XTLOGIT MODEL) WITH REGION-FIXED EFFECTS

	DV: Legislative Proposal				DV: Legislative Approval			
	Bylaw		Amendment		Bylaw		Amendment	
	M1	M1-1	M2	M2-1	M3	M3-1	M4	M4-1
Independent variables: (baseline=No **merger**)								
Municipal absorption	-0.052	-0.030	-0.207	-0.192	0.169	0.225	-0.362	-0.306
	(0.208)	(0.212)	(0.226)	(0.229)	(0.206)	(0.198)	(0.258)	(0.261)
New municipality	-0.590**	-0.528**	0.004	0.081	-0.085	-0.049	-0.014	0.181
	(0.206)	(0.205)	(0.167)	(0.167)	(0.199)	(0.191)	(0.196)	(0.200)
Controls								
Local councilor salary (ln)	-0.056		-0.489		1.258		-0.576	
	(0.674)		(0.475)		(0.779)		(0.556)	
Local council budget/councilor (ln)		0.000		0.000		0.0001**		0.0001
		(0.000)		(0.000)		(0.000)		(0.000)
Mayors' vote share (%)	-0.008***	-0.008***	-0.004	-0.004	-0.008**	-0.008**	-0.005*	-0.005*
	(0.002)	(0.002)	(0.002)	(0.002)	(0.003)	(0.003)	(0.002)	(0.002)
Mayor's political party support	-0.231**	-0.225**	-0.179**	-0.176**	-0.110	-0.088	-0.035	-0.019
	(0.081)	(0.082)	(0.067)	(0.067)	(0.082)	(0.083)	(0.088)	(0.088)
Councilors supporting mayor (%)	0.014	0.013	0.014*	0.014*	-0.006	-0.008	-0.017	-0.019*
	(0.007)	(0.008)	(0.007)	(0.007)	(0.007)	(0.008)	(0.009)	(0.009)
Population (ln)	0.853***	0.711***	0.409**	0.257	0.476*	0.287	0.464*	0.043
	(0.192)	(0.201)	(0.143)	(0.156)	(0.236)	(0.201)	(0.182)	(0.196)
Percentage of senior citizens (%)	0.034	0.032	0.010	0.009	0.021	0.012	0.032	0.025
	(0.021)	(0.021)	(0.018)	(0.018)	(0.023)	(0.022)	(0.022)	(0.022)
Unemployment rate (%)	-0.038	-0.035	-0.062	-0.062	-0.062	-0.055	-0.097	-0.093
	(0.056)	(0.056)	(0.045)	(0.045)	(0.059)	(0.057)	(0.055)	(0.054)
Constant	-11.84**	-11.06***	-1.888	-4.574**	-19.26***	-7.143**	-2.681	-3.731
	(4.299)	(2.130)	(3.206)	(1.702)	(4.550)	(2.212)	(3.692)	(2.146)
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Region fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
lnsig2u	-0.077	-0.086	0.291*	0.298**	-1.422	-1.785	0.494***	0.481***
	(0.189)	(0.191)	(0.115)	(0.115)	(0.765)	(1.186)	(0.131)	(0.133)
rho	0.220	0.218	0.289	0.290	0.068	0.049	0.333	0.330
	(0.032)	(0.032)	(0.024)	(0.024)	(0.049)	(0.055)	(0.029)	(0.029)
N	5106	5106	5115	5115	4930	4930	4929	4929
AIC	3089.7	3089.0	5313.2	5314.2	2055.2	2052.0	3673.8	3671.8
BIC	3501.6	3500.9	5725.2	5726.2	2451.9	2448.6	4070.5	4068.5

( ) Robust Standard Error, using vce(robust) in Stata
** p<0.05, ** p<0.01, *** p<0.001*

APPENDIX 3, EXPLAINING LEGISLATIVE PERFORMANCE: 2008-2014 (DUMMY VARIABLE: XTLOGIT MODEL) WITHOUT POPULATION VARIABLE

	DV: Legislative Proposal		**DV: Legislative Approval**	
	Bylaw	**Amendment**	**Bylaw**	**Amendment**
	M1	M2	M3	M4
Independent variables: (baseline=No merger)				
Municipal absorption	-0.094	-0.262	0.249	-0.358
	(0.198)	(0.204)	(0.188)	(0.310)
New municipality	-0.488**	0.027	-0.044	0.143
	(0.158)	(0.158)	(0.219)	(0.161)
Controls:				
Local councilor salary (ln)	2.471***	0.807**	2.606***	0.703*
	(0.273)	(0.309)	(0.361)	(0.292)
Mayors' vote share (%)	-0.009***	-0.004*	-0.009**	-0.005*
	(0.002)	(0.002)	(0.003)	(0.002)
Mayor's political party support	-0.236**	-0.168*	-0.054	0.002
	(0.080)	(0.069)	(0.093)	(0.088)
Councilors supporting mayor (%)	0.021**	0.014*	-0.014*	-0.021*
	(0.007)	(0.006)	(0.007)	(0.008)
Population (ln)				
Percentage of senior citizens (%)	-0.002	0.000	0.009	0.011
	(0.015)	(0.014)	(0.018)	(0.017)
Unemployment rate (%)	-0.090*	-0.019	-0.095*	0.010
	(0.045)	(0.035)	(0.041)	(0.046)
Constant	-23.54***	-8.603**	-25.79***	-8.842**
	(2.411)	(2.915)	(3.434)	(2.769)
Year fixed effects	Yes	Yes	Yes	Yes
lnsig2u	0.176	0.588***	-0.425	0.777***
	(0.132)	(0.098)	(0.354)	(0.135)
rho	0.256***+	0.354***+	0.166***+	0.398***+
	(0.026)	(0.022)	(0.049)	(0.032)
N	5106	5115	5035	5009
AIC	3080.9	5346.1	2035.1	3689.6
BIC	3185.5	5450.7	2139.4	3793.9

( ) Bootstrap Standard Error, using vce(bootstrap) in Stata

** p<0.05, ** p<0.01, *** p<0.001*

+ LR test of rho=0

APPENDIX 4, EXPLAINING LEGISLATIVE PERFORMANCE: 2008-2014 (CONTINUOUS VARIABLE: TOBIT MODEL) USING LOCAL COUNCIL BUDGET

	DV: Legislative Proposal		**DV: Legislative Approval**	
	Bylaw	**Amendment**	**Bylaw**	**Amendment**
	M1	M2	M3	M4
Independent variables: (baseline=No merger)				
Municipal absorption	-0.014	-0.023*	0.004	-0.025
	(0.011)	(0.011)	(0.008)	(0.014)
New municipality	-0.033***	-0.008	-0.007	0.006
	(0.009)	(0.009)	(0.007)	(0.011)
Controls				
Local council budget/councilor (ln)	0.000*	0.000	0.000**	0.000**
	(0.000)	(0.000)	(0.000)	(0.000)
Mayors' vote share (%)	-0.000***	0.000	-0.000**	-0.000*
	(0.000)	(0.000)	(0.000)	(0.000)
Mayor's political party support	-0.011**	-0.005	-0.003	0.003
	(0.004)	(0.003)	(0.003)	(0.004)
Councilors supporting mayor (%)	0.001***	0.000	0.000	-0.002***
	(0.000)	(0.000)	(0.000)	(0.000)
Population (ln)	0.018*	0.000	0.009	-0.011
	(0.008)	(0.008)	(0.007)	(0.011)
Percentage of senior citizens (%)	0.001	0.000	0.001	0.001
	(0.001)	(0.001)	(0.001)	(0.001)
Unemployment rate (%)	-0.004	-0.001	-0.003	0.000
	(0.002)	(0.002)	(0.002)	(0.002)
Constant	-0.357***	-0.123	-0.262***	' -0.102
	(0.090)	(0.089)	(0.073)	(0.114)
Year fixed effects	Yes	Yes	Yes	Yes
sigma_u	0.058***	0.072***	0.028***	0.081***
sigma_e	0.091***	0.097***	0.079***	0.106***
rho	0.287	0.355	0.110	0.372
N	5106	5115	5035	5009
AIC	924.2	930.4	746.4	1307.4
BIC	1041.9	1048.1	863.9	1424.7

Standard errors in parentheses

** p<0.05, ** p<0.01, *** p<0.001*

APPENDIX 5, EXPLAINING LEGISLATIVE PERFORMANCE: 2008-2014 (CONTINUOUS VARIABLE: TOBIT MODEL) WITH REGION-FIXED EFFECTS

	DV: Legislative Proposal				DV: Legislative Approval			
	Bylaw		Amendment		Bylaw		Amendment	
	M1	M1-1	M2	M2-1	M3	M3-1	M4	M4-1
Independent variables: (baseline=No merger)								
Municipal absorption	-0.002	0.000	-0.013	-0.012	0.007	0.009	-0.022	-0.019
	(0.012)	(0.012)	(0.012)	(0.012)	(0.009)	(0.009)	(0.015)	(0.015)
New municipality	-0.028**	-0.025*	-0.006	-0.003	-0.002	-0.002	-0.006	0.004
	(0.010)	(0.010)	(0.009)	(0.009)	(0.008)	(0.008)	(0.011)	(0.011)
Controls								
Local councilor salary (ln)	0.018		-0.014		0.0561*		-0.019	
	(0.027)		(0.024)		(0.022)		(0.030)	
Local council budget/councilor (ln)		0.000		0.000		0.000**		0.000
		(0.000)		(0.000)		(0.000)		(0.000)
Mayors' vote share (%)	-0.0004**	-0.0004**	0.000	0.000	-0.0003**	-0.0003**	-0.0003*	-0.0003*
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Mayor's political party support	-0.011**	-0.011**	-0.006*	-0.006*	-0.006	-0.005	-0.001	0.000
	(0.004)	(0.004)	(0.003)	(0.003)	(0.003)	(0.003)	(0.004)	(0.004)
Councilors supporting mayor (%)	0.001*	0.001*	0.0004	0.0004	-0.0001	-0.0001	-0.001**	-0.001**
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Population (ln)	0.029***	0.0216*	0.010	0.003	0.010	0.007	0.016	-0.006
	(0.008)	(0.009)	(0.007)	(0.008)	(0.006)	(0.007)	(0.009)	(0.011)
Percentage of senior citizens (%)	0.001	0.001	0.001	0.001	0.001	0.000	0.002	0.002
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Unemployment rate (%)	-0.002	-0.001	-0.004	-0.003	-0.002	-0.002	-0.006*	-0.006
	(0.003)	(0.003)	(0.002)	(0.002)	(0.002)	(0.002)	(0.003)	(0.003)
Constant	-0.618***	-0.412***	-0.0798	-0.133	-0.727***	-0.230**	-0.157	-0.120
	(0.182)	(0.096)	(0.162)	(0.091)	(0.151)	(0.079)	(0.206)	(0.117)
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Region fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
sigma_u	0.054 ***	0.054 ***	0.063***	0.063***	0.022***	0.021***	0.072***	0.071****
sigma_e	0.091***	0.091***	0.097***	0.097***	0.078***	0.076***	0.106***	0.106***
rho	0.257	0.257	0.296	0.297	0.075	0.067	0.314	0.312
N	5106	5106	5115	5115	5035	5035	5009	5009
AIC	966.7	964.9	911.1	911.1	785.8	785.5	1304.7	1301.3
BIC	1385.1	1383.4	1329.7	1329.7	1203.3	1203.1	1721.9	1718.5

Standard errors in parentheses
** p<0.05, ** p<0.01, *** p<0.001*

APPENDIX 6, EXPLAINING LEGISLATIVE PERFORMANCE: 2008-2014 (CONTINUOUS VARIABLE: TOBIT MODEL) WITHOUT POPULATION VARIABLE

	DV: Legislative Proposal		**DV: Legislative Approval**	
	Bylaw	**Amendment**	**Bylaw**	**Amendment**
	M1	M2	M3	M4
Independent variables: (baseline=No merger)				
Municipal absorption	-0.007	-0.022*	0.007	-0.027
	(0.010)	(0.011)	(0.008)	(0.014)
New municipality	-0.027**	-0.010	-0.002	-0.001
	(0.009)	(0.008)	(0.007)	(0.010)
Controls:				
Local councilor salary (ln)	0.104***	0.028*	0.086***	0.029
	(0.015)	(0.014)	(0.012)	(0.018)
Mayors' vote share (%)	-0.0004***	-0.0002	-0.0003**	-0.0003*
	(0.000)	(0.000)	(0.000)	(0.000)
Mayor's political party support	-0.011**	-0.005	-0.003	0.002
	(0.004)	(0.003)	(0.003)	(0.004)
Councilors supporting mayor (%)	0.001***	0.000	-0.0005	-0.001***
	(0.000)	(0.000)	(0.000)	(0.000)
Population (ln)				
Percentage of senior citizens (%)	0.0000	0.0003	0.0004	0.001
	(0.001)	(0.001)	(0.001)	(0.001)
Unemployment rate (%)	-0.004	-0.001	-0.004	0.000
	(0.002)	(0.002)	(0.002)	(0.002)
Constant	-1.011***	-0.338*	-0.877***	-0.414*
	(0.140)	(0.132)	(0.117)	(0.168)
Year fixed effects	Yes	Yes	Yes	Yes
sigma_u	0.058***	0.072***	0.030***	0.082***
sigma_e	0.091***	0.097***	0.078***	0.106***
rho	0.290	0.353	0.130	0.378
N	5106	5115	5035	5009
AIC	937.2	932.6	750.8	1313.3
BIC	1048.4	1043.8	861.7	1424.1

Standard errors in parentheses

** p<0.05, ** p<0.01, *** p<0.001*