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Abstract

This paper investigates the political economy of after merger effects of the large scale municipal amalgamations in the German state of Baden-Württemberg in the early 1970s. By exploiting the huge variance in the amalgamation process in terms of number of participating municipalities, municipality size or amalgamation strategy we identify considerable common pool effects. Amalgamations can create a common pool, as the former independent municipalities have now access to more resources. Common pool exploitation is stronger the more municipalities participate and when municipalities amalgamate by annexation. Additionally, voter involvement is lower in amalgamated municipalities.

JEL-Codes: D780, H110, H720.

Keywords: municipal amalgamation, public debt, common pool, difference in difference.

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1 Introduction

Although most western countries had significant waves of municipal amalgamations between the 1950s and 1970s (Baldersheim and Rose 2010) and the process got new momentum after the fall of the iron curtain (Fox and Gurley 2006, Swianiewicz 2012), research on its economic effects has mainly been conducted recently. While most of the studies focus on the question whether economies of scale can be realized by means of amalgamation (Byrnes and Dollery 2002, Reingewertz 2012, Blesse and Baskaran 2013, Allers and Geertsema 2014, Fritz 2015), the question as to how the observed effects come about or what drives fiscal outcomes of amalgamations is seldom addressed. Only the studies focusing on pre-amalgamation effects aim at identifying these drivers (Hinnerich 2009, Jordahl and Liang 2010, Blom-Hansen 2010, Hansen 2014, Saarimaa and Tukiainen 2015). In this paper we fill this gap by making use of the huge variety of institutional features observed in the large scale municipal amalgamations in the German state of Baden-Württemberg conducted between 1968 and 1975 which lead to a reduction in the number of municipalities by about two thirds (from 3379 to 1111).

The combination of financial resources from different municipalities caused by amalgamation is likely to create a common pool for the participating municipalities. Compared to the situation before the amalgamation, funds from which projects can be financed are bigger and the costs of financing are shared by more inhabitants. Exploiting this common pool is likely to lead to higher debt dynamics in amalgamated municipalities, as more projects are implemented than can be financed by current revenue.

In this paper we investigate whether different amalgamation features affect exploitation of the common pool. As natural starting point we check whether the problem of 1/n as formulated by Weingast et al. (1981) can explain common pool exploitation after an amalgamation was conducted. When controlling for the number of participating municipalities, we find that debt dynamics are an increasing function of this number, i.e., municipalities accumulate more debt per year when more municipalities participate. Additionally, we also investigate the relevance of overall municipality size, the difference between forced and voluntary amalgamations and between mergers and annexations. In most specifications the common pool effect prevails and is more serious in the case of forced amalgamations and when the new municipality is created by means of annexation.

To exclude the possibility that we measure political economy effects unrelated to the amalgamation, we include measures for the fraction of left-wing parties and party-fractionalization in the council. Both do not yield any influence and do not affect the common pool effect. Since the creation of a common pool problem is often attributed to control problems, we also investigate whether less control of council members is one source of the detected effect. Although we are not able to directly control for this, we find significantly lower levels of voter participation and free voter union councilors in amalgamated municipalities. The

levels are even lower in those municipalities which were forced to amalgamate.

The remainder of the paper is organized as follows. Section 2 provides an overview of the institutional setting and the historical process of the amalgamations. Section 3 reviews the theoretical literature on the common pool effect, discusses several mechanisms which can induce its exploitation after amalgamation and formulates some working hypotheses. In section 4 we discuss the appropriate measurement of common pool exploitation in the context of municipal amalgamation, while section 5 discusses the data used and the methodology applied. The following section 6 provides the results differentiated by several amalgamation features and shows whether the results remain the same when we additionally control for other political economy variables. Before section 8 gives the conclusion section 7 investigates whether political participation systematically differs between amalgamated and not-amalgamated municipalities.

2 Institutional Setting and Historical Synopsis

Institutional Setting Municipalities constitute the lowest administrative level of the federal structure in Germany and provide the bulk of (local) public goods and services. Although most of the tasks municipalities have to provide are determined by law, the degree of freedom regarding whether and how they are executed varies considerably. While some tasks, e.g., management of local police authorities, are mandatory and regulated by upper level governments, others, e.g., parks or local business development services, are voluntary and not regulated at all. The number of mandatory services also varies between different types of municipalities. The types are mainly categorized by the number of functions municipalities have to execute for other municipalities, e.g., major district towns (Große Kreisstädte). Some even provide county functions by themselves, e.g., county-free cities (Kreisfreie Städte).

The main sources of revenue are own taxes, shared taxes, and external funds. Although they also have the right to create own taxes and raise user charges, these revenue sources contribute little to the overall revenue. Own taxes mainly consist of local business tax and property tax. For these taxes the municipalities are (almost) free to choose the tax rate. For shared taxes, rate and base are determined by the federal level and only a fixed percentage of the local revenue is reallocated to the municipalities. This is the case for the income tax. To account for the unequal distribution of tax revenue among municipalities, a vertical as well as a horizontal fiscal equalization mechanism is implemented.[1]

In Baden-Württemberg municipalities are governed by directly elected mayors with eight year terms and councils which are elected every five years. Although council and mayor are elected separately, mayors head the council. They are also head of the administration and the primary representative of the municipality. The council election is

[1]For a detailed discussion of the municipal expenditure and revenue structure see Zimmermann (2009).

based on a proportional open list system.[2] Voters can cast as many votes in the council election as there are seats. They can give the votes to candidates of different parties and can assign as many as three votes to one candidate.

A peculiarity of the voting system in Baden-Württemberg is the possibility of municipalities to perform the council election on the basis of (pseudo) district election (Unechte Teilortwahl). While parties set up lists with candidates for the whole municipality in those who do not allow for district representation, they set up separate lists for each district when it is allowed. In the latter case voting for candidates on the district lists is not restricted to the eligible voters in the specific districts. All eligible voters in the municipality are able to cast votes for these candidates.

To illustrate the working properties of the voting mechanism consider municipality M which was formed by an amalgamation of the municipalities A and B. A and B also form the districts in the new municipality. For council elections parties X and Y can set up lists X_A and Y_A for district A and X_B and Y_B for district B. Voters living in district A who want to vote for party X can cast votes for candidates on list X_A as well as X_B. Because the lists are open they can also cast votes for candidates of different parties, e.g., of lists X_A and Y_B. Of course, the same is also possible for eligible voters of district B.

As this mechanism allows for geographical representation of the former independent municipalities in the council of the newly formed one, it is primarily used in those.[3]

Historical Synopsis At the beginning of the 1960s 95 percent of municipalities in Germany had less than 5,000 inhabitants (Thieme and Prillwitz 1981) and often only very limited administrative capacity. It was therefore questioned whether this administrative structure is viable in the future (Weber 1964, Deutscher Juristentag 1965). This view was put forward in public administration literature, especially by Wagener (1969) in his seminal work on the "new construction of administration" (Neubau der Verwaltung). Based on data for different government functions, he calculated that the optimal municipality size to realize efficient and effective administration was about 7,000 inhabitants. To administer any function properly a minimum size of 2,000 inhabitants was inevitable according to Wagener (1969).

To adapt the municipality structure to the perceived optimum the state government of Baden-Württemberg started a process of large scale municipal amalgamations. The legal conditions were first formulated in the "law to strengthen the administrative capacity of small municipalities" (Gesetz zur Stärkung der Verwaltungskraft kleinerer Gemeinden, FAG 1968). Besides the implementation of a scheme to especially motivate small munici-

[2]Only in cases when less than two party lists are registered for the election a simple majoritarian system can be applied.

[3]Pseudo district election does not origin in the amalgamations of the 1970s but was used in some municipalities as early as 1853 (Thieme 1979). However, the widespread use of today originates in the amalgamations of the 1970s.

palities to amalgamate[4] it determined how municipalities have to arrange the new political and administrative structure, whereby they could use merger or annexation as amalgamation strategy. While, annexations were typically proceeded where a large municipality was surrounded by several small ones, mergers were conducted when the participating municipalities were more equal in size.[5]

Since the process was almost stalling until 1972, the state government tried to foster the amalgamation process. Based on the spatial criteria of being adjacent and properties of the terrain[6] as well as proximity to the administrative center in terms of travel time, it drew up a map with a new municipality structure. The presentation of this map was accompanied by a deadline for the amalgamation process and the threat to amalgamate those by law which refused to take part. In the following it served as a blueprint for amalgamations.

As stated in the "third law on administrative reform" (Drittes Gesetz zur Verwaltungsreform) of July 1974 the process was completed on January 1^{st}, 1975. In the end the amalgamation process led to a significant reduction in the number of municipalities from 3379 down to 1111 (see Table 1). Especially the very small ones with less than 2,000 inhabitants, which made up nearly 76 percent in 1968, diminished considerably to about 26 percent in 1975 (Schimanke 1978). Out of the 3379 municipalities 2925 formed 657 new municipalities, whereby the number of participating municipalities ranged from two to 19. 454 municipalities were left unchanged. Based on the "law to end the rearrangement of municipalities" (Gesetz zum Abschluss der Neuordnung der Gemeinden (1974)) 251 municipalities were forced to amalgamate, which left 135 municipalities which, at least partly, originate from forced amalgamations. 228 municipalities are the result of a merger, while 429 result from an annexation.

[- Table 1 about here -]

3 Some Theoretical Considerations about Common Pool Exploitation in Municipal Amalgamations

The fiscal commons theory, based on the pioneering work of Tullock (1959) and Buchanan and Tullock (1962), explains the overuse of fiscal resources when spending is targeted to a specific group, while financing (i.e., taxation) is spread over the whole population. In their seminal paper, Weingast et al. (1981) formalize these considerations for legislative decision making. If b(x) are the benefits of spending a unit x for the constituents of a country and c(x) are the costs of spending a unit x, the efficient spending level will be determined by

[4]The incentive scheme promised 20 percent higher unconditional grants per capita for the first five years after amalgamation and a proportional phasing out in the following five years.

[5]As the amalgamation strategy was mainly determined by the local municipality structure, the municipalities were not free to choose the strategy.

[6]Rough terrain, like mountains, naturally limits the number of suitable amalgamation partners.

b'(x)=c'(x). This consideration changes, if the country is divided in several districts and each district makes its spending decisions autonomously, while financing is still centralized on the country level. When n describes the number of districts, the constituents of each district now only have to pay the fraction 1/n. The efficient spending level is then determined by b'(x)=(1/n)c'(x). While the marginal cost of spending decreases with n, spending is an increasing function of n.[7] Persson and Tabellini (2000) extend the model by allowing the size of the districts, in terms of inhabitants, to vary. The incentives to exploit a common pool are now increasing the smaller the relative size of the district. The smaller the relative size of a district, the smaller is the fraction of the costs it has to finance, and the more a municipality will exploit a common pool. Velasco (1999, 2000) generalizes this reasoning in a multi-period setting and shows that this can lead to a gradual built-up of debt over time. Hence, we derive the following hypothesis:

Hypothesis 1 *Common pool exploitation is an increasing function of the number of participating municipalities.*

Hypothesis 1.1 *Common pool exploitation is stronger, when most of the participating municipalities are (relatively) small.*

Chari and Cole (1993) and Chari, Jones and Marimon (1997) show that logrolling is more likely in settings where part of expenditure is financed by upper levels of government. Weingast et al. (1981) already point out, that their result also holds in settings of centralized decision making, when legislators are elected on a geographical basis and logrolling is possible. By logrolling or vote trading minorities are able to express their preference intensity among topics. It enables them to win sufficient support while they would otherwise be voted down by the majority. Although this exchange of votes is mutually beneficial for the trading partners, it can lead to substantial negative externalities on those not participating in the trade. This can lead to excessive government spending and debt (Riker and Brams 1973).[8]

Connected to this kind of reasoning is the theory of minimum winning coalitions. Minimum winning coalitions in a legislature are those which contain the smallest number of seats of all minimum winning coalitions. Minimum winning coalitions are likely to vote for proposals at the expense of the losing-paying coalition (Mueller 2003). The probability of being in a minimum winning coalition is not equally distributed. As Persson

[7] Primo and Snyder (2008), in an extension of the standard Weingast et al. (1981) model, question these results and show that the 1/n mechanism only holds when certain assumptions are fulfilled. Especially when congestion in the use of public goods and deadweight costs of taxation are considered the effect of the law of 1/n is diminishing and can even be reversed. The same result is derived, when partial cost sharing, instead of total cost sharing is used (Primo and Snyder (2008)). However, the extensions are not relevant when we apply the common pool reasoning in the institutional setting of Baden-Württemberg.

[8] For an elaborate discussion about the merits and downsides of vote trading see Mueller (2003).

and Tabellini (2000) show, it is more likely to be in the minimum winning coalition the smaller the district is. The default payoff necessary to accept a proposal decreases with size. Thus, small districts are more likely to form coalitions and push through proposals in their favor. Therefore we conclude:

Hypothesis 2 *Common pool exploitation is stronger, when amalgamation participants have incentives to logroll.*

Hypothesis 2.1 *Common pool exploitation is stronger, when small amalgamation participants are able to form minimum winning coalitions in the council.*

4 How to measure Common Pool Exploitation after Amalgamation

To assess the political economy origins of the fiscal effects of municipal amalgamations it has to be clarified how to measure exploitation of the common pool in this context. As common pool exploitation is generally perceived as the (over-) use of a fixed amount of resources which is not sustainable in the long-run, we have to use a fiscal variable which is able to represent such behavior.

The use of fiscal resources by municipalities is measured quite easily by (change of) its expenditure. However, focusing on expenditure is not sufficient to detect common pool exploitation. A change in the level of expenditure does not tell us anything about overuse of resources (Saarima and Tukiainen 2015), as it can be balanced by a change in revenue.

The obvious variable to measure if balancing occurs is the level of public debt, or to be more precise, the change of it. When overall expenditure and revenue do not match, the level of public debt rises. But does this already measure common pool exploitation because of amalgamation? Accumulating additional debt clearly shows an overuse of resources, but on whose expense?

The answer to this question can be twofold when we consider the institutional setting of our polity in consideration. Firstly, the municipality can free-ride on the state government. Under German constitutional law, municipalities are part of the state they are located in and are not a separate constitutional entity (Wollmann 2004). Thus, in the end, the states are responsible for local debt and have to provide bailouts. This creates a soft budget constraint for municipalities and allows them to accumulate more and more debt.

If this is the primary driving force of higher debt dynamics, the number of special needs transfers (Bedarfszuweisungen) should have risen substantially after the amalgamations. Unfortunately, special needs transfers not only include bailout payments but also payments for special duties. However, the payments are very small on average and it hardly exists any correlation between payments and amalgamation status. Therefore it is not likely that a soft budget constraint created by the state government is the main driving force of higher debt dynamics.

The second possible answer focuses on the new municipality itself. When there are no bailouts by the state government, the municipality itself has to repay the debt at some time. If it is possible for some groups in a municipality to target expenditure to them, which is paid for with additional debt, this group free-rides on the rest of the municipality. As the debt has to be repaid by the whole municipality the marginal cost of additional expenditure shrinks after amalgamation for formerly independent municipalities generating incentive to raise expenditure. Therefore a rise in the debt level or change in the dynamics of debt accumulation is an appropriate measure for common pool exploitation.

This rationale is quite close to the one adopted in studies focusing on pre-amalgamation effects (Hinnerich 2009, Jordahl and Liang 2010, Saarima and Tukiainen 2015). Before amalgamation, municipalities raise additional debt as they know that it has to be repaid by the future municipality as a whole.[9]

Due to the huge variance in how amalgamations were executed in Baden-Württemberg, there are different features which can foster targeted spending on the expense of the whole municipality. A prerequisite for them to have any impact on targeted spending is that the institutional structure allows for it.[10] As discussed previously, the election system in Baden-Württemberg allows for geographical representation via the application of (pseudo) district elections. Thus, formerly independent municipalities can use the representation in the council to target spending to their territory. Unfortunately, we have no data that clearly identifies targeted spending in municipalities. But given the evidence below, it seems likely that different amalgamation features affect the incentives to make use of geographical representation. Additionally, Fritz (2015) provides evidence that construction expenditure is one of the main driving forces of higher expenditure and debt of amalgamated municipalities in Baden-Württemberg, which furthermore indicates the existence of targeted spending.

5 Data and Empirical Strategy

Empirical Specification To estimate the size of the common pool effect, inherent in municipal amalgamations, we apply a difference-in-differences approach to the data. When investigating non-random policy interventions, this approach allows for constructing reliable counterfactuals as it eliminates time-specific and group-specific effects (Angrist and Krueger 1999).[11] Therefore we can use the not-amalgamating municipalities as control-group. Given the panel structure of our data, to isolate the amalgamation effects, we

[9] As we do not have data on the formerly independent municipality after the amalgamation has been completed we can not measure free-riding behavior in this way, but have to resort to the number of participating municipalities.

[10] Although common pool effects have also been detected in at large elections (Bradbury and Stephenson 2003)), it is not straight forward how they come about.

[11] For a more comprehensive discussion of the difference-in-differences estimator see Baskaran (2009) or Fritz (2015)

estimate models of the following form

$$y_{it} = \alpha_i + \omega_t + \beta_3 amalgamation + \beta_4 X_{it} + \epsilon_{it}.$$

While y_{it} denotes the variable of interest in municipality i at time t, which will be the log difference of debt per capita per year in the following, α_i denotes municipality fixed effects to account for group-specific heterogeneity and ω_t denotes time fixed effects to account for time-specific heterogeneity. *amalgamation* is a binary indicator with a value of one from the year after a municipality completed its amalgamation until the end of the period of observation, and 0 otherwise. Thus the coefficient β_3 captures the amalgamation effect. X_{it} is a vector containing several covariates to reduce the danger of biased estimates. ϵ_{it} is a normally distributed error term.

The covariates included in every model are percentage of population older than 65 (old), fraction of people commuting out of the municipality for work (commuter), tax revenue from federal income tax per head (income tax), population-density (density) and number of citizens (inhabitants).[12] Standard errors are clustered on the municipality level to correct for heteroscedasticity and autocorrelation.

As the primary aim of this paper is to investigate the existence of common pool effects, estimating a single amalgamation effect is not sufficient.[13] To account for the influence of the number of municipalities participating in an amalgamation, we interact the *amalgamation* dummy with the number of participants and estimate models of the following form

$$y_{it} = \alpha_i + \omega_t(+\beta_3 amalgamation) + \beta_4 amalgamation \times number + \beta_5 X_{it} + \epsilon_{it}.$$

On some occasions we additionally include the amalgamation dummy to check whether the number of participants provides us with additional information about the exploitation of the common pool beyond the overall amalgamation effect. We use the number indicator and not the inverse, as suggested by Weingast et al. (1981), as measure for common pool exploitation. As we only have data on the level of the new municipality, using the inverse measure is not feasible.[14]

To investigate the impact of municipality size, forced municipalities or amalgamation strategy, we refer to dividing the sample in sub-samples, instead of making extensive use of interaction terms. Although this quite often leads to a change in the sample we are

[12] For a detailed discussion of the rationale for the inclusion of these covariates see Fritz (2015).

[13] For a thorough investigation of the amalgamation effect and its robustness see Fritz (2015).

[14] The inverse indicator provides a measure for the incentives for each municipality to exploit the common pool. Incentives are a decreasing function of the indicator, i.e. incentives rise when the indicator is lower. However, using this indicator is only possible when behavior of pre-amalgamation municipalities is investigated. When focusing on post-amalgamation effects one can only use the number of participating municipalities as proxy for common pool exploitation.

looking at, it allows us to isolate the common pool effect more exactly. By focusing on the respective sub-sample we only include the municipalities of the control group and those with the trait of interest. Thus, we always estimate the effect compared to the sub-sample of not-amalgamated ones. When we use interaction terms instead, we get estimates compared to all other municipalities without the specific trait. Additionally, interaction terms would not allow us to directly compare sub-sets with differing traits.

A note on the endogeneity of amalgamation characteristics When investigating amalgamation effects solving the problem of the endogeneity of the amalgamation decision is crucial. When municipalities are self-selecting into amalagamation identifying causal effects is hardly possible. However, as the amalgamation decision was in most cases based on geographical and administrative reasoning and the degree of freedom about the decision was significantly reduced by the announcement of the state government of a blueprint for amalgamation, endogeneity of the amalgamation decision is not much of a problem.[15] Unfortunately, another problem of the endogeneity arises with the endogenity of the amalgamation characteristics. When discussing this problem one has to distinguish between two forms. The first refers to the choice of the amalgamation characteristic and the second to its long term influence. The choice of the amalgamation characteristic is primarily determined by the geographical location of a municipality. Thus, it is not very plausible to assume it had any degree of freedom regarding this decision. The choice-set of possible amalgamation partners is restricted to contiguous neighbors (or their neighbors). This predetermines the maximum number of partners. The spatial distribution of municipalities with high and low numbers of inhabitants also predetermines the number of inhabitants in a new municipality and which amalgamation strategy is used. The map of viable municipalities provided by the state government in 1973 also refers primarily to geographical features such as the connection by streets and short travel-time to the new administrative center. Therefore, it is reasonable to argue that the amalgamation characteristics are exogeneous.

After the amalgamation is completed, the amalgamation characteristics are endogeneous by definition. They would not exist if the amalgamation had not happened and are not changing anymore. Thus, after the amalgamation, we do not have any variation of amalgamation characteristics within municipalities, but only between them. This can bias the results. However, given the large cross-section of our data-set, this is only a minor problem. Additionally, our primary focus is to investigate how the characteristics in these special circumstances affect common pool exploitation and not how changes in characteristics affect it. Nevertheless, one has to interpret the results carefully.

[15] See Fritz 2015 for an extensive discussion of the problem of endogeneity of the amalgamation decision.

Data To study how political economy considerations affect the fiscal outcomes of municipal amalgamations in the German state of Baden-Württemberg, we make use of a panel comprising data on the amalgamated as well as on the not-amalgamated municipalities from 1964 to 1988. The data is aggregated to the size of the municipalities in 1979, i.e., after the completion of the amalgamations. Data on the fiscal variables as well as other municipality characteristics are provided by the electronic LIS-system of the Office of Statistics of the state of Baden-Württemberg. Data on the year of amalgamation, number of amalgamation partners as well as amalgamation strategy applied had to be hand-collected from the printed documentation of the amalgamation process provided by the Office of Statistics (Landesamt für Statistik Baden-Württemberg 1979). Data on municipalities forced to amalgamate were collected from the "law to end the rearrangement of municipalities" (Gesetz zum Abschluss der Neuordnung der Gemeinden (1974)) which provides a definite list of forced municipalities as well as the incorporating municipality. To account for the relative weight of municipalities in an amalgamated municipality, we collected data on their number of inhabitants as stated in the documentation by the State Archives (Landesarchivdirektion Baden-Württemberg 1975).

To get comparable units of investigation we exclude one unincorporated area (Gemeindefreies Gebiet)[16], two municipalities which did not perform the amalgamation until after 1975[17] and restrict the panel to those municipalities which belong to a county. This reduces the number of observations in the cross-section from 1111 to 1099.[18] County-free municipalities (Kreisfreie Städte) perform additional tasks compared to normal ones and are generally much bigger. Including them is likely to bias the results.

Evaluating the common trend assumption To ensure that estimates from difference-in-differences regressions generate correct results, it is reasonable to control whether the common trend assumption is not violated before the amalgamation. We therefore calculate mean values for the period from 1964 to 1968 for the treatment and control group and perform t-tests to estimate their statistical difference. The results are presented in Table 2. As can be seen in row 1, the debt level is significantly higher in amalgamated municipalities. As we employ a difference-in-differences estimator, such level effects cancel out and are not much to worry about. However, it is much more of a problem if the debt dynamics show different patterns. Fortunately this is neither the case for our dependent variable, change of debt, nor the growth of debt, in which we subtracted the cyclical components of the former using a Hodrick-Prescott filter. The differences in most of the control variables are no problem for the identification strategy but underline the

[16] Although there exist two unincorporated areas (Gutsbezirk Muensingen and Rheinau/France) only the first is included in the data-set provided by the Office of Statistics.

[17] Staig amalgamated in 1976 and Eigeltingen in 1977. Unfortunately, we were not able to figure out why they amalgamated after 1975. Including them does not alter the results.

[18] Excluded are Baden-Baden, Freiburg im Breisgau, Heidelberg, Heilbronn, Karlsruhe, Mannheim, Pforzheim, Stuttgart and Ulm.

importance of their inclusion in the regression to minimize potential estimation biases.

[- Table 2 about here -]

6 Sources of the Common Pool Effect

Number of Participating Municipalities The theory of the fiscal commons attributes the main driving force of its effect to the number of districts having access to the common resources. The natural attempt to control for the existence of a common pool effect in municipal amalgamations is thus to investigate whether the number of participating municipalities makes any difference in the exploitation of the pool. One of the main features of the amalgamations in Baden-Württemberg is the huge variance in the amount of participating municipalities, ranging from two, which is obviously the minimum, to as many as 19. Figure 1 shows the frequency distribution of the number of amalgamation partners. Although two party amalgamations show the highest frequency they only represent less than a third (182 out of 657) of all amalgamations. Even those with nine participants still represent 27 amalgamations.

[- Figure 1 about here -]

[- Table 3 about here -]

Table 3 presents the estimated effects of the number of participating municipalities. While column 1 provides results using the binary indicator, column 2 provides results using the continuous indicator. Evaluated at the mean, we find a positive effect of an additional municipality, which is significant at the one percent level. Thus, debt dynamics are higher the more municipalities participate.

A shortcoming of this attempt to measure the common pool effect is its assumption of homogeneous effects for each additional municipality and that no other kinds of effects are at work (Jordahl and Liang 2010). To control for this shortcoming we include both, the binary and the continuous measure, in our regression to investigate whether the number of participating municipalities yields additional influence when we also control for the overall amalgamation effect. In doing this, the estimate for the continuous indicator, as well as for the binary one stays significant.

Due to the huge variance in the number of participating municipalities it has to be discussed as to how far one can draw any conclusions from the estimation of overall effects. It may be the case that the common pool effect is not a continuous function but shows some other shape. To control for that and get rid of the homogeneity assumption made earlier, we estimate individual amalgamation effects for every "n"-group, i.e., estimate separate regressions for every pool size. The results are presented in Table 4.

Although the point estimates vary considerably between 0.03 and about 0.08, they are significant most of the time and estimated with high precision, at least up to the group with ten participants. An exception is the group with two participating municipalities. In general, aside some fluctuations, we find an upward trend in the estimates. This result is economically plausible, since the common pool effect is predicted to be an increasing function of the number of participants as political control can be expected to be much higher in small groups.

When an amalgamation comprises more than 10 participants, the estimates become much less robust and their significance varies a lot. From eleven participants onwards, the number of new municipalities in the treatment group only varies between seven and one.[19] Because of the small number of observations of amalgamations with more than 10 participants it seems reasonable to exclude those observations when estimating common pool effects. We therefore re-estimate the equation including the binary as well as the continuous indicator for the restricted sample including all groups with up to ten participants. Column 4 of Table 3 provides the results. Now the estimate for the binary indicator is a little bit lower but is still highly significant. The continuous indicator, in contrast, rises significantly and stays highly significant. Thus, also in the restricted sample the common pool effect prevails.

[- Table 4 about here -]

The Role of Municipality Size Until now the common pool problem is discussed assuming an equal possibility to exploit common pools. This assumption seems to be implausible when the varying size of the municipalities is considered. The possibility to exploit a common pool either relies on the chance to collude with others, e.g., by forming minimum winning coalitions, or on the degree of control of individual behavior. As it is likely that these properties differ between municipalities of different size, it seems reasonable to expect different amalgamation effects.

To control for such effects we divide our sample into three categories and estimate the amalgamation effects separately. Since the choice of the cutoff always has some arbitrary elements we decide to use cutoffs suggested by the amalgamation objectives given by the state government. The objectives implied a minimal size of 2,000 and a regular size of 8,000 inhabitants. We thus estimate different regressions for municipalities with less than 2,000 inhabitants after the amalgamation process, with a number of inhabitants between 2,000 and 8,000 and with more than 8,000 inhabitants (Schimanke 1978).

To get a first impression, if differing patterns are to be expected by this distinction, we plot the development of debt by group in Figure 2. While the development of the debt level obviously drifts apart between the two types of municipalities in the whole sample,

[19] To get the number of treated municipalities one has to subtract 453, which is the number of municipalities in the control group, from "Number of Municipalities" as depicted in the regression table.

as shown in the upper left part of the figure, it is much less obvious in the small sample, as shown in the upper right part, where only a small one-time shift is clearly detectable around the end of the amalgamation process. In contrast, different drifts are most obvious in the case of medium sized municipalities, shown in the lower left part, and to the same extent in the case of big municipalities.

[- Figure 2 about here -]

[- Table 5 about here -]

The results presented in Table 5 confirm these impressions widely. To make the regressions comparable to the previous section and more robust to outlier observations we restrict the sample to those municipalities with a maximum of 10 participants. Additionally, we estimate separate regressions only including the binary amalgamation indicator, presented in the upper part of Table 6. Those including both indicators are presented in the lower part. Column 1 resembles the baseline regression with the restricted sample and shows a slightly higher point estimate compared to the full sample (column 1 of Table 3).

This effect vanishes when the sample is restricted to those with less than 2,000 inhabitants. The result is in line with what we expect, given the debt dynamics plotted in Figure 2. We find an effect but it is not statistically different from 0. For medium sized municipalities the estimate is slightly lower than for the whole sample, but highly significant. The same holds for big municipalities. The main driving force of the amalgamation effect are the medium and big municipalities. From a theoretical point of view, this relationship of size and amalgamation effect makes sense. In small municipalities, controlling the common pool is much easier than in bigger ones as the number of councilors is in general much smaller, leaving less room for logrolling. In bigger municipalities with more councilors logrolling is likely to be much easier. This can result in higher debt dynamics.

Theoretically one would expect that this mechanism does not only depend on the size of the municipality but also on the number of participants. In general, a smaller number should be more likely to be effectively controlled for than a high number. Additionally, with a high number of participants, collusion is more likely. The results presented in the lower part of Table 5 confirm these expectations. While column 1 resembles the estimate of Table 3 column 4, the second column shows the results for the subset of small municipalities. Both indicators are again not significant. At least for the continuous indicator the insignificant result is likely to be due to the low variance of the indicator. Given the small size, the number of participating municipalities is in general limited. Only 10 municipalities have 4 or more amalgamation partners.

In big municipalities the binary indicator is insignificant, while the continuous indicator is highly significant and larger than in the baseline regression. In medium sized municipalities both indicators are significant, at least at the five percent level. In light of these

results the common pool effect derived in the previous section has to be interpreted with caution, as it is mainly relevant in municipalities with more than 2,000 inhabitants.

Forced vs. Voluntary Amalgamations One of the shortfalls of the standard common pool problem as discussed in literature is its neglect of differing incentives to exploit the pool. It is assumed that the structure of the pool defines the incentives and because of this unified structure the incentives are identical for all. In the case of municipal amalgamations, at least in the case we are studying, this assumption does not hold. Although the bulk of municipalities takes part on a voluntary basis, a little less than one fourth of the municipalities (153 out of 657) have, at least partly, been forced by law. It can thus be hypothesized that such municipalities have stronger incentives to exploit the common pool, to compensate their forced surrender of independence. Their representatives in the council have more incentives to engage in logrolling and the formation of minimum winning coalitions to attract targeted spending.

Unfortunately, because of data limitations we are not able to test this mechanism directly but can only show whether the incentives to exploit a common pool vary between voluntary and forced amalgamations.

[- Figure 3 about here -]

[- Table 6 about here -]

A straight-forward way to measure this is to separate the data-set into two parts, one with those which amalgamated voluntarily and one with those which did not. The results of such a separation are graphically presented in Figure 3. Forced municipalities show a much higher debt dynamic than the other municipalities. This impression is confirmed by the results presented in columns 1 to 3 of Table 6. The point estimate for the forced subset is about 80 percent higher than the one for the voluntary subset. Although the precision of the estimate is lower, which can be attributed to the smaller treatment group, it is still statistically significant at the one percent level.

The results presented so far only indicate whether the point estimates differ when we compare voluntary and forced amalgamations to the control group of not amalgamated ones. However, it is also of interest whether this difference is statistically significant. To control for this, we drop all non-participating municipalities and use the voluntary subset as control group. The results are presented in column 4. Indeed, the change of debt in forced municipalities is about 1.6 percentage points higher and the difference is significant at least at the five percent level.

A shortcoming of the treatment classification used is the assumption of all forced mergers being equal. Because amalgamations were in general voluntary, new municipalities consisting only of forced participants are extremely scarce (only three exist) and only 29

exist where at least half of them was forced. We therefore substitute the amalgamation variable with a variable containing the fraction of forced municipalities. The estimate for the variable is presented in column 5. Now we do not find a significant effect anymore. However, this can be due to the variance in the fraction variable and the non-effect may be driven by those municipalities with a high fraction of forced participants. When we exclude those which consist of forced municipalities to 50 percent or more, the point estimate rises considerably and gets highly significant. A municipality which consists to roughly 50 percent of forced municipalities accumulates about 7.5 percent more debt per year as compared to voluntary amalgamating ones.

This result is theoretically conclusive since one would expect higher effects when forced municipalities can exploit voluntary ones. When all municipalities are forced, it is less likely that exploitation occurs.[20]

Merger vs. Annexation After discussing the question whether it is of relevance how an amalgamation decision comes about and whether this generates different incentives for the participating municipalities, we now go one step further and investigate whether the mode of amalgamation is of relevance. Amalgamations in Baden-Württemberg were conducted in one of two ways, as merger (Zusammenschluss) or annexation (Eingemeindung). In general, an amalgamating municipality had to choose one of these strategies. The decision was primarily determined by the local (spatial) municipality structure. In some cases both strategies were pursued. This was especially the case when the amalgamation process was stretched over a longer time period.[21] If this is the case we classify the municipality using the strategy pursued in the majority of its amalgamations.

In theory different effects should be expected from the strategies. While merging municipalities normally do this on equal terms, annexations are often dominated by one central municipality. This renders logrolling and the formation of minimum winning coalitions by the annexed municipalities more likely.

The evolution of per capita debt depicted in Figure 4 widely confirms the expectations. For both strategies the trend is always steeper after the completion of the amalgamation process and most of the time the one for annexed municipalities outperforms the trend for the merged ones, and thus shows a somewhat higher debt dynamic.

[- Figure 4 about here -]

[- Table 7 about here -]

[20] In this section we abstain from also introducing the *number* variable, because the effect seems to be driven by the fraction of forced municipalities. In this context the number of participants provides no additional information.

[21] In general, this happened when a small municipality was annexed very early in the process and the municipality merged with others later on.

To add some econometric evidence we perform several estimations to check the robustness of this visual evidence. As presented in Table 7 and 8 we have done this using two samples. The results in Table 7 are based on the full sample of municipalities as used before. Because of the results discussed in the previous section regarding forced amalgamations we additionally performed the estimations using a sample consisting only of voluntary amalgamations to prevent mistakenly attributing effects to the strategies which are driven by the forced subset.

While column 1 in Table 7 again resembles the baseline estimate of Table 3 for ease of comparison, columns 2 and 3 present the results for the merger and annexation subset, respectively. For both subsets the point estimate is statistically different from 0. The amalgamation effect nearly doubles when annexations instead of mergers are performed. When we compare both subsets directly by dropping all non-participating municipalities and using the annexation subsets as control group, we also find different effects. The point estimate shows a negative sign, implying significantly lower debt dynamics in merged municipalities (column 4).

A central argument of larger effects because of annexation is that the small participants can more easily extract resources from a common pool because they can collude in the council to exploit the big partner. Since the number of representatives in a council is proportional to the number of inhabitants, formerly independent municipalities can form minimum winning coalitions when their combined size is larger than that of the host municipality. To investigate whether this happens, we split the sample of municipalities performing annexations in two. One with a big host, i.e., the host municipality has more inhabitants than the annexed ones, and one with a small host. The results are presented in columns 5 and 6, respectively. Although the point estimate is higher for the subset with the small hosts, it is highly significant in both subsets. Thus collusion may have an effect, but it is unlikely that it is the main driving force of the amalgamation effect in annexed municipalities.

Additional evidence for the relevance of amalgamation strategies is also given by the results of column 8. In municipalities made up by an annexation, the number of municipalities has a significant effect besides the pure amalgamation effect, suggesting that the common pool mechanism is the driving force of the effect. In merged municipalities, in contrast, such an effect hardly seems to exist (column 7). Only the number of municipalities is empirically relevant. This is mostly in line with the theoretical predictions.

[- Table 8 about here -]

However, to avoid that outliers drive the results we again use the restricted sample as previously discussed and exclude all forced amalgamations from the sample. Now the results are even more in line with our theoretical predictions. When amalgamation is performed on equal terms, neither the amalgamation itself nor the number of participants

is of relevance. The other results, presented in Table 8, are generally consistent with those of the upper part. The point estimates are generally lower when only voluntary amalgamations are considered.

Do we really measure Amalgamation Effects? The study so far focuses on the structure and properties of the amalgamation process itself. Political economy variables are widely neglected. Since most of the measured amalgamation effects arise after its completion, ignoring political economy variables can lead to omitted variable biases, if those are systematically different in amalgamated municipalities. To make sure we are really measuring a common pool effect inherent in amalgamation, we control for two political variables often discussed in the political economy literature, the share of left-wing parties in the legislature (council) and the degree of party fractionalization. Due to their ideological orientation towards redistribution it is often assumed in literature that left-wing governments or majorities lead to a weaker fiscal stance with higher expenditure and debt. Column 1 of Table 9 shows whether this is the case in our sample.

In addition to the share of left-wing parties in the council we also include an interaction variable of the amalgamation and the left-share-variable to account for common effects. Note that because of data limitations of the left-share-variable, which is only available since the end of the amalgamation process, we are not able to include municipality fixed effects, as those are perfectly collinear with the amalgamation variable. To account for level differences of the values we de-mean all variables before running the estimations. The results show no influence of ideology of council members on the debt dynamics. Neither the left-share nor the interaction variable is significant at conventional levels. The amalgamation indicator, in contrast, is highly significant. The missing influence of ideology is, however, not very surprising when the left/right distribution in councils in our data set is considered. Due to the dominance of the CDU and the Free Voter Unions, left-wing majorities are hardly observable.[22]

[- Table 9 about here -]

The impact of party fractionalization in the council is not as directly derivable from theory as in the case of the share of left-wing parties. Two opposing views arise. On the one hand, a highly fractionalized council may lead to a deadlock in government where no expenditures are additionally decided upon to those mandated by law. On the other hand, which might also be a much more realistic view of the political process, especially in the context of common pool problems, high fractionalization may lead to increased logrolling between the parties leading to higher expenditure as a result. To measure party fractionalization, we calculate a fractionalization measure in the style of Alesina et al.

[22] Although the Free Voter Unions are not explicitly attributable to one political camp, we classified them as right-wing as they are generally fiscal conservatives

(1999). Fractionalization thus measures the probability that two randomly drawn council members belong to the same party and is constructed in the following way

$$PARTYFRAC_{jt} = 1 - \sum_{i} (Party_{ijt})^2,$$

where $Party_{ijt}$ is the percentage of seats held by party i in council j in the legislative period t. Although the variation in party fractionalization is much higher in comparison with the share of left-wing parties, the point estimate is again insignificant (column 2 Table 9), as it is the case for the interaction variable of amalgamation and party fractionalization.[23] Only the amalgamation variable yields significant results. The amalgamation effect seems thus to be untouched by political variables.

A possible explanation for the insignificant result is that fractionalization is collinear to amalgamation. As it is quite easy to set up parties and participate in municipal elections in Baden-Württemberg it can be the case that parts of municipalities set up their own parties, leading to higher fractionalization. Unfortunately, data which allows us to disentangle the specific aims of parties is not available.

Instead, we can control whether more parties are elected into councils of amalgamated municipalities. Having more parties can be evidence for a more heterogeneous electorate and provides more possibilities for logrolling and the formation of minimum winning coalitions. Table 10 provides evidence that amalgamated municipalities have significantly more parties in the council than not amalgamated ones. The effect is even stronger when we only focus on forced amalgamations (column 2). Although the point estimate seems to be quite high with about 17 percent more parties (column 1), it is negligible, when we take the average number of parties into account, which is about 2.5 parties per council. It is likely that the significant result is due to single outlying observations. However, more parties seem not to lead to higher debt dynamics. This result is also confirmed when we drop the amalgamation variable from the fractionalization regression. Fractionalization does not wield any influence (not shown).

[- Table 10 about here -]

7 Voter Involvement and the Common Pool

The results presented so far indicate that councilors who vote in favor of their (district) constituency are driving the common pool effects. But why are councilors able to engage in logrolling even in comparatively small municipalities in which control of councilors by the public should be very high?

[23] Note that data on parties elected is only available for those municipalities electing the council based on proportional representation.

A possible explanation may be that citizens vote strategically. Instead of voting for their preferred political program, they can pool their votes on those candidates from their own district. It can therefore be the case that these councilors are more inclined to engage in logrolling. Unfortunately, we are not able to control for this mechanism. We do not have election data for the formerly independent municipalities and the single councilors.

Findings for elections in Finnish municipalities provide evidence that voters are voting strategically after amalgamations (Saarima and Tukiainen 2012). Voters concentrate their votes on strong candidates, but the concentration is taking place along party lines. Voters do not change their party preference to foster the representation of their district.

Another explanation holds that overall identification with the new municipality is lower among citizens. This provides room for legislative logrolling. When identification varies between districts, this effect can be even stronger.

To investigate whether political engagement in politics varies between amalgamated and not-amalgamated municipalities we take a closer look at its impact on two variables which proxy voter engagement in local politics quite well, voter participation in council elections and the percentage of councilors from Free Voter Unions. Free Voter Unions are set up independently from established parties by citizens of the respective municipality to influence local politics. Unlike initiatives they are in general not topic specific. The fraction of Free Voter Union councilors is therefore a good proxy for political engagement or participation beyond election day. Higher engagement in politics by voters should reduce possibilities for legislative logrolling and lead to lower levels of common pool exploitation.

[- Table 11 about here -]

The results regarding these variables are presented in Table 11.[24] The emerging pattern is quite consistent and in line with the second explanation. Voter participation (column 1) as well as the percentage of Free Voter Union councilors (column 3) is significantly lower in amalgamated municipalities, implying lower control by the citizens.[25] The results are even stronger when we exclude the voluntary amalgamations (columns 2 and 4).

8 Conclusion

This paper investigates the political economy origins of the fiscal effects of the large scale municipal amalgamations carried out in the late 1960s and early 1970s in the German state of Baden-Württemberg. By using a difference-in-differences strategy we find considerably higher debt dynamics in amalgamated municipalities. Debt dynamics are higher the more municipalities participate in an amalgamation, when municipalities are forced to amalgamate and when the amalgamation is conducted as an annexation instead of a merger.

[24]Note that both dependent variables are measured in percent.
[25]Note that we again are only measuring between municipality variation.

The theoretical literature on the nature of the common pool problem in politics identifies different channels which affect the exploitation of common resources. As the marginal cost of financing a project decreases for every district when the number of (financing) district rises, targeted spending will increase. In the end this will lead to higher expenditure compared to when every district has to fund spending by itself. This mechanism is more severe when logrolling between legislators and the forming of minimum winning coalitions is possible. Minimum winning coalitions can exploit the maximum losing paying coalition even more.

Because the voting system applied to amalgamated municipalities allows for geographical representation in the council, it is likely that these mechanisms are at work. Although we are not able to investigate these mechanisms directly, we make use of the variation of how amalgamations were proceeded in Baden-Württemberg to identify common pool effects. It is plausible that different strategies to pursue an amalgamation provide different incentives for the formerly independent municipalities to exploit the process. We interpret results as common pool exploitation, when we find the hypothesized effect of an amalgamation strategy on the change of the municipality debt level.

As main result we find higher debt dynamics when more municipalities take part in an amalgamation. But the effect depends on the overall size of the new municipality. It is most severe in medium sized communities. Forced amalgamations exploit the common pool created by amalgamation more than those who conduct it voluntary. The same holds when comparing those conducting an annexation with those performing a merger. Merged municipalities do not exploit the common pool.

The amalgamation effects are robust to the inclusion of other political economy variables such as the share of left-wing parties in the council or party-fractionalization. Additionally, we find lower levels of voter involvement in amalgamated municipalities, which should provide more room for logrolling.

However, the results are only supporting our hypothesis and are no definite causal explanation. As the data limitations of our setting do not allow us to test the causality directly, we have to leave this to future research.

Tables and Figures

Figure 1: Frequency Number of Participating Municipalities

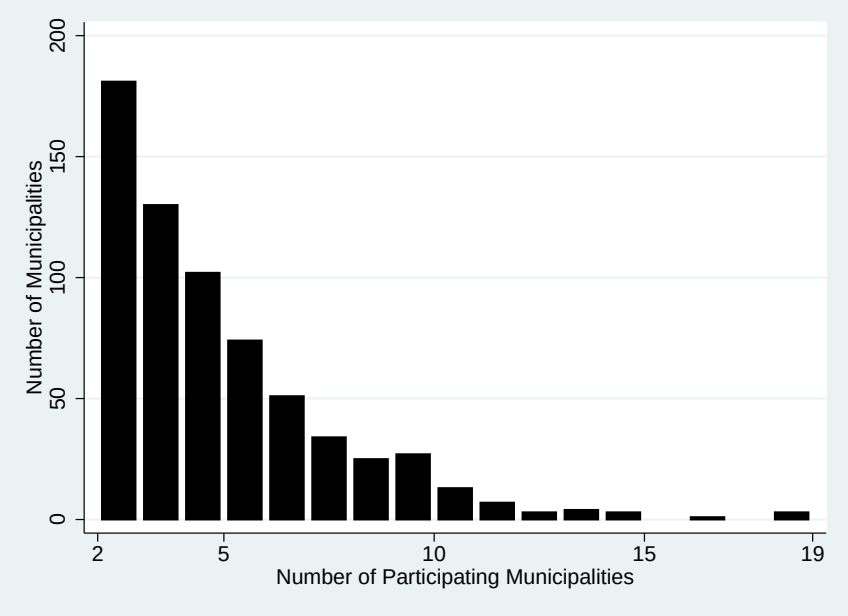

Figure 2: Debt per Capita by Municipality Size and Amalgamation Status

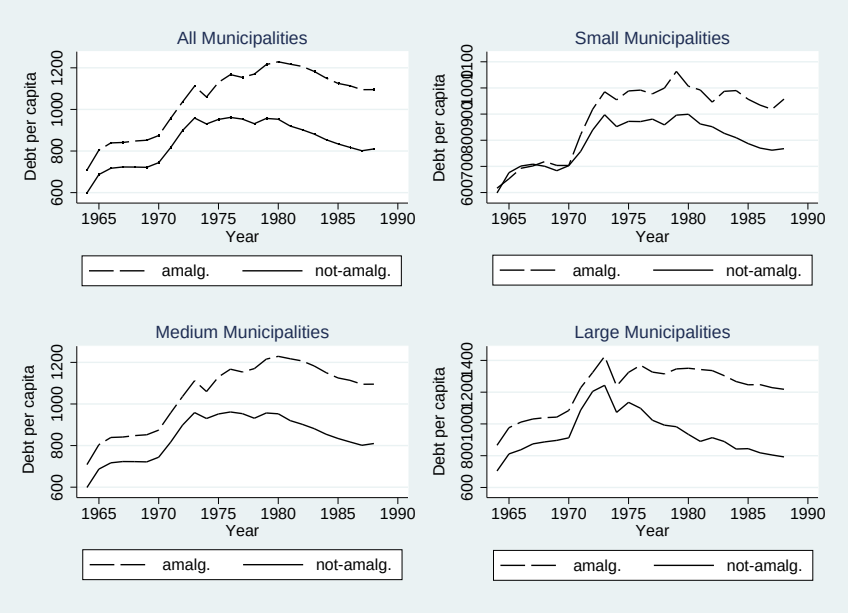

Figure 3: Debt per Capita by Enforcement Status

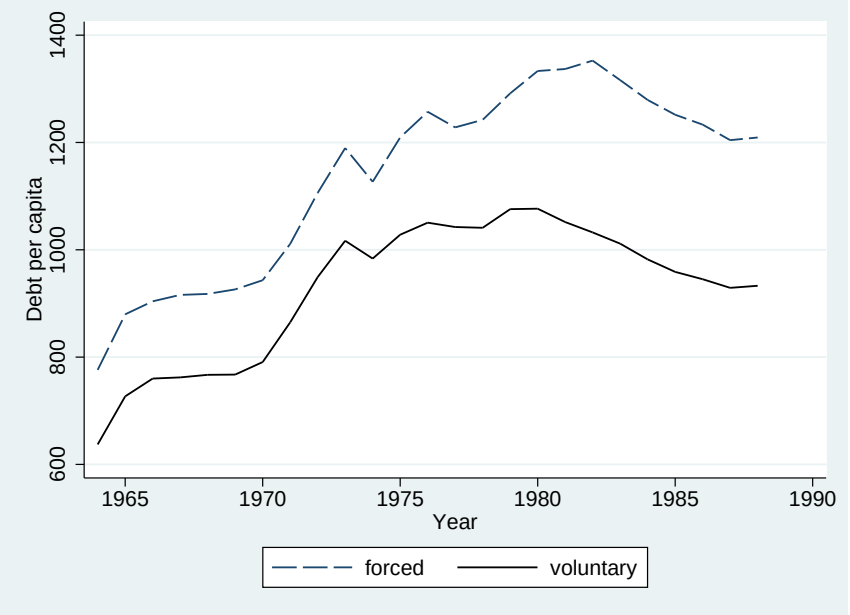

Figure 4: Debt per Capita by Amalgamation Strategy

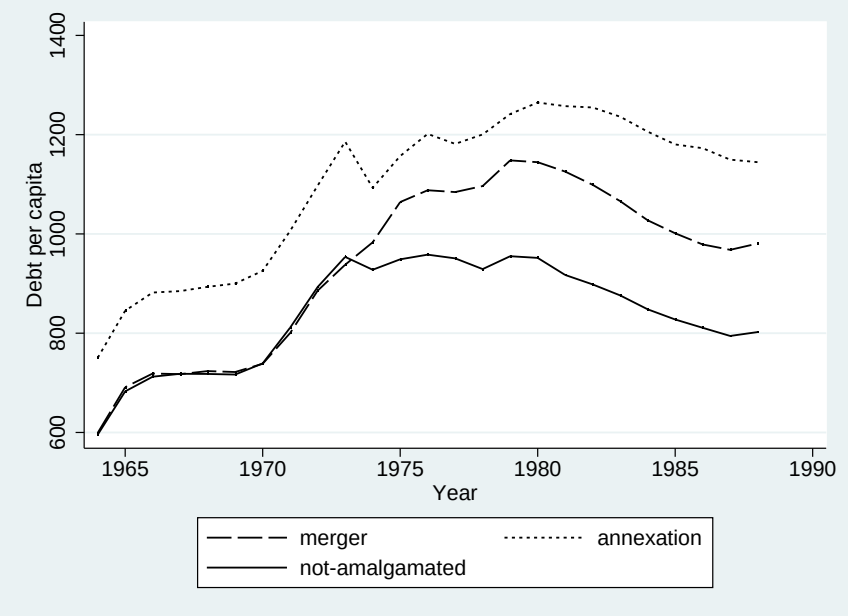

Table 1: Number and Size of Municipalities in 1968 and 1975

Size	1968		1975		Reduction	
	Number	%	Number	%	Number	%
<1000	1803	53.4	100	9.0	-1703	-94.4
1.000-2.000	750	22.4	189	17.0	-561	-74.8
2.000-5.000	543	16.1	405	36.4	-138	-25.4
5.000-8.000	122	3.6	168	15.1	+46	+37.7
8.000-10.000	46	1.4	64	5.8	+18	+39.1
10.000-20.000	69	2.0	105	9.5	+36	+52.2
20.000-50.000	32	0.9	57	5.1	+25	+78.1
50.000-100.000	9	0.3	16	1.4	+7	+77.8
>100.000	5	0.1	7	0.6	+2	+40.0
Sum	3379	100.0	1111	100.0	-2268	-67,1

Source: Landesarchivdirektion Baden-Wuerttemberg (1975), p.14

Table 2: Difference in Mean Values

	No Amalgamation	Amalgamation	Difference
debt	685.38	796.08	110.7***
	[399.84]	[413.22]	[11.12]
change of debt	30.61	34.39	3.782
	[184.95]	[141.52]	[5.169]
growth of debt	24.76	27.57	2.804
	[70.48]	[54.22]	[1.765]
Δ lndebt	0.065	0.05	-0.015
	[0.374]	[0.184]	[0.095]
income tax	111.49	113.01	-1.521
	[38.97]	[36.17]	[-1.038]
old	0.11	0.11	0.00436***
	[0.02]	[0.02]	[0.000533]
outcomuter	0.21	0.17	-0.0383***
	[0.07]	[0.06]	[-0.0019]
population density	233.45	203.1	-30.34***
	[259.95]	[213.92]	[-6.643]
inhabitants	2581.55	8301.81	5720.3***
	[2925.9]	[10971.6]	[202.2]

Standard errors in parentheses

Table 3: Number of Participating Municipalities

	(1) Baseline	(2) Number of Municipalities	(3) Amalg. and Number of Municipalities	(4) Amalg. and Number of Municipalities
amalgamation	0.0282***		0.0229***	0.0215***
	(0.00712)		(0.00734)	(0.00742)
number		0.00633***	0.00484***	0.00770***
		(0.00131)	(0.00132)	(0.00171)
Municipality and Year Effects	Yes	Yes	Yes	Yes
Municipality Characteristics	Yes	Yes	Yes	Yes
	0.030	0.030	0.030	0.030
Number of Municipalities	1099	1099	1099	1078
N	26376	26376	26376	25872
Sample	Full	Full	Full	Restricted

Standard errors in parentheses

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 4: Number of Municipalities: Individual Effects

Number of part. Municipalities	2	3	4	5	6
amalgamation	0.00988	0.0284**	0.0398***	0.0255**	0.0733***
	(0.0105)	(0.0113)	(0.0106)	(0.0122)	(0.0148)
Municipality and Year Effects	Yes	Yes	Yes	Yes	Yes
Municipality Characteristics	Yes	Yes	Yes	Yes	Yes
adj. R^2	0.024	0.025	0.025	0.026	0.025
Number of Municipalities	632	583	555	527	501
N	15168	13992	13320	12648	12024
Number of part. Municipalities	7	8	9	10	11
amalgamation	0.0606***	0.0540***	0.0579***	0.0778***	0.0468*
	(0.0141)	(0.0182)	(0.0170)	(0.0217)	(0.0247)
Municipality and Year Effects	Yes	Yes	Yes	Yes	Yes
Municipality Characteristics	Yes	Yes	Yes	Yes	Yes
adj. R^2	0.026	0.025	0.024	0.024	0.024
Number of Municipalities	486	477	479	465	460
N	11664	11448	11496	11160	11040
Number of part. Municipalities	12	13	14	16	18
amalgamation	0.0360	0.0241	0.0608*	0.0703***	0.0112
	(0.0399)	(0.0305)	(0.0362)	(0.0197)	(0.0313)
Municipality and Year Effects	Yes	Yes	Yes	Yes	Yes
Municipality Characteristics	Yes	Yes	Yes	Yes	Yes
adj. R^2	0.024	0.024	0.024	0.024	0.024
Number of Municipalities	456	457	456	454	455
N	10944	10968	10944	10896	10920
Number of part. Municipalities	19				
amalgamation	0.0508***				
	(0.0161)				
Municipality and Year Effects	Yes				
Municipality Characteristics	Yes				
adj. R^2	0.024				
Number of Municipalities	454				
N	10896				

Standard errors in parentheses

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 5: Municipality Size

	(1) All Municipalities	(2) Small Municipalities $<$ 2000 Inhabitants	(3) Medium Municipalities 2000 $\leq$ Inhabitants $<$ 8000	(4) Big Municipalites $\geq$ 8000 Inhabitants
amalgamation	0.0285***	0.0240	0.0255***	0.0272**
	(0.00718)	(0.0204)	(0.00896)	(0.0136)
Municipality and Year Effects	Yes	Yes	Yes	Yes
Municipality Characteristics	Yes	Yes	Yes	Yes
adj. R^2	0.030	0.020	0.045	0.095
Number of Municipalities	1078	286	569	223
N	25872	6864	13656	5352
Sample	Restricted	Restricted	Restricted	Restricted
	All Municipalities	Small Municipalities $<$ 2000 Inhabitants	Medium Municipalities 2000 $\leq$ Inhabitants $<$ 8000	Big Municipalites $\geq$ 8000 Inhabitants
amalgamation	0.0215***	0.0276	0.0214**	0.0145
	(0.00742)	(0.0197)	(0.00920)	(0.0147)
number	0.00770***	0.0158	0.00547**	0.00809***
	(0.00171)	(0.0118)	(0.00238)	(0.00284)
Municipality and Year Effects	Yes	Yes	Yes	Yes
Municipality Characteristics	Yes	Yes	Yes	Yes
adj. R^2	0.030	0.020	0.045	0.096
Number of Municipalities	1078	286	569	223
N	25872	6864	13656	5352
Sample	Restricted	Restricted	Restricted	Restricted

Standard errors in parentheses

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 6: Forced Amalgamations

	(1) Baseline	(2) Voluntary	(3) Forced	(4) F vs V	(5) F vs V	(6) F vs V
amalgamation	0.0282***	0.0265***	0.0454***	0.0166**		
	(0.00712)	(0.00765)	(0.0106)	(0.0075)		
fraction forced					0.0167	.0752**
					(.0199)	(.0315)
Municipality and Year Effects	Yes	Yes	Yes	Yes	Yes	Yes
Municipality Characteristics	Yes	Yes	Yes	Yes	Yes	Yes
adj. R^2	0.030	0.029	0.025	0.052	0.053	0.052
Number of Municipalities	1099	950	602	649	649	620
N	26376	22800	14448	15576	15576	14880

Standard errors in parentheses

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 7: Amalgamation Strategies

	(1) Baseline	(2) Merger	(3) Annexation	(4) M vs A	(5) Annexation Big Host	(6) Annexation Small Host	(7) Merger	(8) Annexation
amalgamation	0.0282***	0.0204**	0.0397***	-.0147**	0.0422***	0.0440***	0.0149	0.0327***
	(0.00712)	(0.00935)	(0.00792)	(0.00748)	(0.00851)	(0.0114)	(0.00995)	(0.00841)
number							0.00844**	0.00659***
							(0.00398)	(0.00186)
Municipality and Year Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Municipality Characteristics	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
adj. R^2	0.030	0.027	0.028	0.053	0.027	0.024	0.027	0.027
Number of Municipalities	1099	680	872	649	788	534	676	855
N	26376	16320	20928	15576	18912	12816	16224	20520
incl. Forced	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Sample	Full	Full	Full	Full	Full	Full	Restricted	Restricted

Standard errors in parentheses

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 8: Amalgamation Strategies (without forced municipalities)

	(1) Baseline	(2) Merger	(3) Annexation	(4) M vs A	(5) Annexation Big Host	(6) Annexation Small Host	(7) Merger	(8) Annexation
amalgamation	0.0265***	0.0173	0.0373***	-0.0158*	0.0388***	0.0415***	0.0150	0.0329***
	(0.00765)	(0.0108)	(0.00846)	(0.00927)	(0.00896)	(0.0138)	(0.0112)	(0.00880)
number							0.00703	0.00672***
							(0.00518)	(0.00217)
Municipality and Year Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Municipality Characteristics	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
adj. R^2	0.029	0.027	0.027	0.050	0.027	0.024	0.027	0.027
Number of Municipalities	950	620	783	500	734	499	617	777
N	22800	14880	18792	12000	17616	11976	14808	18648
incl. Forced	No	No	No	No	No	No	No	No
Sample	Full	Full	Full	Full	Full	Full	Restricted	Restricted

Standard errors in parentheses

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 9: Council Structure

	(1) Share of Left Parties	(2) Party Fractionalisation
amalgamation	0.0112***	0.0111***
	(0.00353)	(0.00358)
left share	0.00813	
	(0.0132)	
amal x left	-0.0101	
	(0.0151)	
party fract.		0.0061
		(0.0133)
amal x fract.		-0.0037
		(0.018)
Year Effects	Yes	Yes
Municipality Characteristics	Yes	Yes
adj. R^2	0.009	0.009
Number of Municipalities	1097	1097
N	15358	15358

Standard errors in parentheses

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 10: Number of Parties in Council

	(1)	(2)
Dependent Variable	Number of Parties	Number of Parties
Municipalities	All	Only Forced
amalgamation	0.1789***	0.2975***
	(0.03003)	(0.04139)
Year Effects	Yes	Yes
Municipality Characteristics	Yes	Yes
adj. R^2	0.33	0.32
Number of Municipalities	1056	565
N	14300	7570

Standard errors in parentheses

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 11: Political Participation

	(1)	(2)	(3)	(4)
Dependent Variable	Voter Participation	Voter Participation	Free Voter Union	Free Voter Union
Municipalities	All	Only Forced	All	Only Forced
amalgamation	-0.0355***	-0.0564***	-0.0499**	-0.117***
	(0.00436)	(0.00709)	(0.0209)	(0.0323)
Year Effects	Yes	Yes	Yes	Yes
Municipality Characteristics	Yes	Yes	Yes	Yes
adj. R^2	0.32	0.23	0.10	0.08
Number of Municipalities	1097	601	1097	601
N	15358	8414	15358	8414

Standard errors in parentheses

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 12: Baseline Regression with Covariates

	(1) Baseline
amalgamation	0.0282***
	(0.00712)
old	-0.81
	(0.54)
commuter	0.139
	(0.128)
income tax	-0.00005
	(0.00006)
density	-0.00003
	(0.0714)
inhabitants	-0.000009***
	(0.00003)
Constant	0.265***
	(0.086)
Municipality and Year Effects	Yes
Municipality Characteristics	Yes
adj. R^2	0.031
Number of Municipalities	1099
N	26376

Standard errors in parentheses
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 13: Descriptive Statistics

	Mean	Std. Dev.	Min	Max
change of debt	13.13	213.1136	-7243.789	7314.972
Δ lndebt	0.0096	0.295	-6.878	6.707
old	0.124	0.025	0	0.339
commuter	0.224	0.077	0.023	0.467
income tax	283.35	142.91	21.83	1109.46
density	252.42	289.04	1.895	3072.93
inhabitants	8123.63	25021.93	90	636557

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