Regional Science and Urban Economics 59 (2016) 54–74

Contents lists available at ScienceDirect

Regional Science and Urban Economics

journal homepage: www.elsevier.com/locate/regec

Do municipal mergers reduce costs? Evidence from a German federal state

Sebastian Blesse[a,*], Thushyanthan Baskaran[b]

[a]ZEW Mannheim, Germany
[b]University of Siegen, Germany

ARTICLE INFO

Article history:
Received 29 October 2014
Received in revised form 23 April 2016
Accepted 26 April 2016
Available online 30 April 2016

JEL classification:
H11
H72
H77
R53

Keywords:
Municipal mergers
Economies of scale
Voluntary and compulsory mergers

ABSTRACT

We study the fiscal consequences of municipal mergers by making use of a large-scale merger reform in the German federal state of Brandenburg. This reform, which was implemented from 2001 to 2003, led to a substantial reduction in the number of municipalities. Individual mergers were heterogeneous across a number of dimensions, which allows us to contribute to the literature by exploring the consequences of different types of mergers within the same institutional setting. Focusing in particular on the distinction between compulsory and (semi-)voluntary mergers, we implement a difference-in-difference design with panel data from 1995–2010 at the level of post-merger municipalities. We find significant reductions in (administrative) expenditures after compulsory mergers. Voluntary mergers, on the other hand, have no effect on expenditures. We also show that the effects of voluntary and compulsory mergers vary according to further (secondary) characteristics of a merger.

1. Introduction

Many industrialized countries have embarked on large-scale municipal merger reforms in the last few decades (Fox and Gurley, 2006). Policy makers typically initiated these reforms in the belief that larger municipal units can exploit economies of scale in public service provision and thereby reduce costs.[1] Whether mergers really entail economies of scale and lower expenditures, however, has not yet been conclusively answered. Some studies suggest insignificant effects or even diseconomies of scale after mergers (Allers and Geertsema, 2014; Fritz, 2013; Lüchinger and Stutzer, 2002; Moisio and Uusitalo, 2013), while others show substantial expenditure reductions (Blom-Hansen et al., 2014; Reingewertz, 2012).

The ambiguity in literature is difficult to resolve because existing studies typically vary simultaneously along two dimensions. First, they vary in the country, or more precisely in the institutional setting, that is being studied. Second, studies vary according to the type of the merger process, especially according to whether municipalities had some say in whether and with whom to merge (voluntary mergers) or whether mergers were designed and enforced by the central government (compulsory mergers). As each study typically deals with only either compulsory or voluntary mergers, it is difficult to disentangle the effects of the specific features of a merger reform from the institutional idiosyncrasies of the setting.

In this paper, we revisit the question of how mergers affect municipal expenditures relying on a sample of municipalities in the German State of Brandenburg over the period 1995–2010. Brandenburg merged 1319 municipalities into 266 larger units during the 2001–2003 period in the context of a major merger reform, while leaving 155 municipalities unaffected. This opens up a natural experiment with which we can identify the causal effect of mergers on a number of municipal expenditure items using difference-in-difference (DD) regressions.

One notable advantage of our setting over the existing quasi-experimental literature is that the merger reform in Brandenburg encompassed various types of mergers, and included in particular

* Corresponding author at: Centre for European Economic Research (ZEW), P.O. Box 103443, D-68304 Mannheim, Germany. Tel.: +49 0621 1235 394.
E-mail addresses: blesse@zew.de (S. Blesse), baskaran@vwl.uni-siegen.de (T. Baskaran).

[1] Other advantages to larger municipalities might be, for example, the provision of a wider range of public services and goods, the internalization of externalities (Oates, 1972) as well as a greater influence over policies implemented by higher tiers of government (Fox and Gurley, 2006).

http://dx.doi.org/10.1016/j.regsciurbeco.2016.04.003
0166-0462/

both voluntary and compulsory mergers. More specifically, the state government of Brandenburg decided in late 2000 to reduce the number of municipalities. Following this decision, municipalities were allowed to choose when and with whom to merge until late 2003. In this sense, mergers were voluntary during this initial period. In late 2003, however, the state government passed a law that enforced mergers of those municipalities that were supposed to merge but had not yet done so, bringing the merger reform to a close.[2] Besides the voluntary vs. compulsory distinction, the mergers during the reform were also heterogeneous along various other dimensions: e. g. in the size of the affected population, in the number of participating municipalities, and in whether mergers were annexations or fusions. That mergers with different characteristics take place within a single reform helps us to understand in detail how the design of a merger determines its fiscal consequences. As indicated, the previous literature either relies exclusively on big bang type of reforms where municipalities were merged according to the central government's design at the same date or on entirely voluntary mergers that take place in a piecemeal fashion.[3]

Overall, our results indicate that mergers result in economies of scale for administrative expenditures: we observe a negative and statistically significant effect on this expenditure category. On the other hand, we do not identify any significant average effects on total, staff, and current expenditures. However, further analysis reveals significant heterogeneity across different types of mergers. First, we find that the administrative cost savings are mostly due to compulsory mergers. Second, we also observe large negative, albeit insignificant, effects of compulsory mergers on total and current expenditures; for voluntary mergers, on the other hand, our estimates are statistically insignificant and small in magnitude.[4] Third, we find that the effect of voluntary and compulsory mergers varies depending on additional characteristics of a merger: voluntary and, to some extent, compulsory mergers are more effective in reducing costs when more inhabitants are affected; both voluntary and compulsory mergers reduce expenditures more when a larger number of municipalities are involved; annexations tend to reduce costs more than fusions and mixed mergers (which consist of both annexations and fusions).

There are some concerns regarding the validity of the DD design given the characteristics of our setting. Most importantly, the state government did not randomly choose municipalities for mergers. Municipalities may have been chosen for mergers based on expected future fiscal developments. While such expected developments were officially not part of the selection criteria for mergers set out by the state government (the criteria did not refer to any fiscal variables), it is nevertheless possible that the state government implicitly took municipal fiscal trajectories into account. A related concern is self-selection into voluntary mergers. It is possible that those municipalities which decided to merge voluntarily during the reform period expected worse fiscal developments. To address these concerns regarding selection, we show that pre-treatment trends in treatment and control municipalities were reasonably similar and that the main results remain robust if we control for observable time-varying characteristics of municipalities.[5] Another important concern is possible common pool incentives that may have led to expansions in expenditures in the immediate pre-merger period. We address this issue in robustness tests and show that the results remain robust.[6]

We are one of the first studies to provide evidence on how voluntary versus compulsory municipal mergers affect economies of scale and corresponding fiscal outcomes within the same institutional framework.[7] Moreover, this paper adds to a relatively small quasi-experimental empirical literature on how fiscal variables evolve after mergers.[8] Allers and Geertsema (2014), Moisio and Uusitalo (2013), and Lüchinger and Stutzer (2002) analyze voluntary municipal mergers in The Netherlands, Finland, and Switzerland, respectively. These studies find little evidence that economies of scale increase due to mergers. The results for compulsory mergers, as for example in Denmark or Israel, seem to be different. Specifically, Blom-Hansen et al. (2014) and Hansen et al. (2014) find for a Danish merger reform in 2007 that fiscal outcomes improve. Reingewertz (2012) finds that the Israeli merger reform of 2003 reduced total expenditures by about 8% in the amalgamated municipalities compared to non-amalgamated municipalities. As indicated above, our results confirm that it is the compulsory nature of the merger process itself rather than other institutional peculiarities that results in cost savings following mergers. By the same token, voluntary mergers tend to be less effective in reducing public expenditures.

Fritz (2013) is the only previous quasi-experimental study that explores the fiscal effects of mergers with German data.[9] He focuses on mergers in the West German state of Baden-Württemberg in 1975 and finds that mergers increase municipal debt and total expenditures. He does, however, not explore whether expenditure effects differ between voluntary and forced mergers.[10] Another related paper, studying the merger reform Brandenburg is Bruns et al. (2015). The authors find that voluntary mergers took place according to political considerations but do not address fiscal effects of municipal mergers.

The remainder of this paper is structured as follows. The next section discusses the theoretical link between municipal mergers and scale economies. Section 3 provides some institutional details about local public finance in Germany and the merger reform in

[2] We discuss the selection criteria for (compulsory) mergers further below.

[3] Compulsory mergers are analyzed in Reingewertz (2012) for Israel and Blom-Hansen et al. (2014) for Denmark. In contrast, Lüchinger and Stutzer (2002)), Moisio and Uusitalo (2013) and Allers and Geertsema (2014) study exclusively voluntary mergers in Switzerland, Finland and The Netherlands, respectively.

[4] Note that an alternative interpretation of the reduced form effects is that there were cuts in municipal services after compulsory mergers, which then led to declining expenditures. While it would be preferable to explore the evolution of municipal services explicitly by relating proxies for service quantity and quality to mergers, it is difficult to measure quantity or quality of local services. Service quantity is hard to measure comprehensively as municipal tasks are manifold and often carried out by various administrative units. For the same reason, it is difficult to evaluate changes in service quality accurately. Overall, however, it is unlikely that the mergers led to significant cuts in services as the state government did not redistribute (new) tasks or gave guidelines to decrease service provision. Similarly, it is implausible that municipalities would deliberately use the opportunity offered by mergers to cut services to their citizens.

[5] We also explore the robustness of the results regarding selection in further robustness tests reported in the appendix; see Table A.7.

[6] Yet another concern is that an increasing number of municipalities drops successively from the sample, resulting in an unbalanced panel. The reason is that municipalities in Brandenburg started to switch from the cameralistic accounting system to a new accounting system (*Doppik* — double bookkeeping) in 2007. Not all municipalities switched immediately (the switch was staggered); but by 2010 all municipalities had switched to the new system. As data from the old and the new accounting system are not comparable, we drop a municipality from the sample when it switches to the new system. The timing of the switch to the new accounting system, however, was not systematically related to the merger reform. A robustness test with a balanced sample reported in the appendix confirms the main results (Table A.5).

[7] Hanes and Wikström (2010) exploit a large scale Swedish merger reform in the 1950s to compare the outcomes of voluntary and compulsory mergers for local population and income growth. The authors find that voluntary mergers perform better with respect to both measures compared to compulsory mergers. However, this contradicts the findings of stronger population growth for less voluntary mergers of Kauder (2014) for West German municipal mergers. However, both papers do not focus on expenditure effects of municipal mergers.

[8] A related literature studies how fiscal variables evolve before mergers, for example Jordahl and Liang (2010), Hinnerich (2009), Nakazawa (2013), Saarimaa and Tukiainen (2015), Hansen (2014) and Blom-Hansen (2010).

[9] Kauder (2014) also studies German municipal mergers, but this study focuses on population growth effects of incorporating municipalities into larger cities. He finds that incorporated municipalities grow faster than non-incorporated municipalities.

[10] Note that there is also a descriptive literature on fiscal outcomes of mergers such as Blume and Blume (2007) for Germany, Gordon and Knight (2008) for school districts in the US as well as Nelson (1992) and Hanes (2015) for municipalities in Sweden.