

Discussion Paper No. 18-031

**Merging County Administrations –
Cross-national Evidence
of Fiscal and Political Effects**

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Zentrum für Europäische
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Merging county administrations – Cross-national evidence of fiscal and political effects

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Abstract

While many central governments amalgamate municipalities, mergers of larger county administrations are rare and hardly explored. In this paper, we assess both fiscal and political effects of county mergers in two different institutional settings: counties act autonomously as upper-level local governments (Germany), or counties being decentralised branches of the state government (Austria). We apply difference-in-differences estimations to county merger reforms in each country. In both cases, some counties were amalgamated while others remain untouched. Austrian counties (*Bezirke*) and German counties (*Landkreise*) widely differ in terms of autonomy and institutions, but our results are strikingly similar. In both cases, we neither find evidence for cost savings nor for staff reductions. Instead, voter turnout consistently decreases in merged counties, and right-wing populists seem to gain additional support. We conclude that political costs clearly outweigh fiscal null benefits of county merger reforms – independent of the underlying institutional setting.

Keywords: County mergers; Local government; Expenditures; Local elections; Voter turnout

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1. Introduction

“Is bigger better?”¹ While evidence on the effects of municipal mergers becomes more and more settled, studies on mergers of larger county administrations are fairly rare. In this paper, we assess both fiscal and political effects of county mergers in two different institutional settings. Many countries run multi-tier systems of local government. For example, *counties* serve as the upper-local level of local government below the state level in the US and in Ireland, *Landkreise* in Germany, or *Bezirke* in Austria. In this paper, we define counties as local jurisdictions with some degree of self-autonomy around the average population of US counties (100,000) representing the second local government tier in countries with at least two subnational tiers. County-sized administrations provide public services and goods, which are more than local in nature but cover less than a federal state or country – education and social care are prominent examples. Institutions and responsibilities of counties, however, differ widely across countries.

In past decades, some OECD countries changed the number of county-sized administrations through mergers and split-offs (see Table 1). We select 12 OECD countries which currently run county administrations. Sweden, Portugal and Norway marginally decreased the number of counties in the last six decades; Ireland and especially transitioning countries such as Hungary, Turkey or Estonia drastically increased the number of counties in the last decades. Luxembourg sticks to the number of counties as of 1950, the number of counties in the US also varies relatively little. Among OECD countries, Germany is an exceptional outlier and merged counties a great deal. German state governments expect that increases in county administrations deliver cost reductions through scale effects or economies of scope, and merged counties to a large

¹ Bird and Slack (2013).

extent.² Between 1950 and 2013, the number of counties virtually halves. Austria, on the contrary, increased the numbers of counties slightly in the 1950s, 1960s and 1980s but started merger reforms at the county level in recent years.³ The number of districts changed both in countries with elected district representation (local councils and/or governors) as well as in countries where districts are run by appointed rather than elected governments (see Table 1).

[Table 1 about here]

Because county mergers are rare, the exceptional case of Germany notwithstanding, very little is known whether enlarging county administrations actually pays off. Studies mainly focus on the municipal level. Almost all quasi-experimental studies which offer a causal interpretation do not show that mergers reduce total expenditures (Lüchinger und Stutzer 2002, Moisiu und Uusitaalo 2013, Allers und Geertsma 2016, Blesse und Baskaran 2016, Blom-Hansen et al. 2016, Fritz 2016, Studerus 2016, Harjunen et al. 2017, Sandsør et al. 2017); Reingewertz (2012) being the sole exception.⁴ Voter turnout in local elections, by contrast, seems to decrease (Fritz and Feld 2015, Koch und Rochat 2017, Lapointe et al. 2018). Studies also focus on city-county mergers which are a very specific form of county mergers (Blume and Blume 2007, Tang and Hewings 2017). Researchers, however, do not investigate mergers of county-sized multi-purpose administrations yet.⁵ The sole exception for studies on mergers of rural counties is Roesel

² Internalization of spatial externalities (spill-over) might be another reason for merger reforms. Spill-over may cause an underprovision of publicly provided goods. Mergers may then lead to an increase in expenditures. Spill-over, however, do not play a major role in the discussion of merger reforms in Germany which were always intended to cut spending.

³ Austria increased the number of districts for two main reasons. First, after Nazi Germany annexed Austria in 1938, few districts were merged. In the 1950s, the Austrian government re-established those districts. Second, Austria experienced a large increase in population after WWII from around 7 million inhabitants in 1950 to around 8.5 million today. Therefore, some districts were split – for example, in the booming West Austrian state of Vorarlberg (district of Dornbirn).

⁴ Blesse and Roesel (2017) provide a comprehensive overview on the literature on municipal merger reforms. There are also studies that do not use quasi-experimental methods such as difference-in-differences estimations (for example, Hanes 2015). We abstract from the results of these studies because they do not offer a causal interpretation.

⁵ Swianiewicz and Łukomska (2017) recently study splits of Polish counties and find that smaller counties lead to an increase in administrative costs but not in other budgetary category in the Polish case. There are also studies on

(2017) who applied the synthetic control method to state-level aggregated data. The author does not show cost reductions. Instead, he finds that voter turnout in county council elections decreases and support for right-wing populists increases significantly.

In this paper, we investigate both fiscal and political effects of county mergers in different institutional settings. We apply difference-in-differences estimations to county merger reforms in Austria and Germany, which are comparable in terms of language, culture, and the style of administration. In both countries, some counties were amalgamated while others remain untouched. Against the background of cultural similarities, the institutional background differs substantially between Austrian counties (*Bezirke*) and German counties (*Landkreise*). German counties act autonomously as upper-level local governments. Austrian counties, by contrast, are decentralised branches of the state government. Our results for the effects of county mergers on spending and electoral outcomes, however, are strikingly similar for both countries. Specifically, our empirical analysis compares merged counties to non-merged counties within the same German or Austrian federal state. In both cases, we find neither evidence for cost savings nor for staff reductions. Our findings are in line with theoretical considerations of Holzer et al. (2009) who suspect no scale effects in already large local governments. Mergers, by contrast, seem to bear some political costs. Voter turnout consistently decreases in merged Austrian and German counties, and right-wing populists seem to gain additional support. We conclude that political costs clearly outweigh the fiscal null benefits of county merger reforms – independent of the institutional background.

mergers of special-purpose jurisdictions such as school districts (Brasington 1999, Duncombe and Yinger 2007, Knight and Gordon 2008).

2. Institutional background

2.1 County mergers in Saxony-Anhalt (Germany) 2007

Government in Germany is shared among the federal level, the 16 federal states, and around 11,300 local governments. The structure and responsibilities of local governments differ widely across federal states. However, all German states run at least two layers of local government: Around 11,000 *Gemeinden* constitute the municipal level; 300 counties (*Landkreise*) are the upper-level local governments. Municipalities hold responsible for local services such as waste disposal, public safety and order, and culture. German counties are mainly responsible for social care (youth and social welfare, accommodation costs of long-term unemployed), administrative services such as motor vehicle registration, economic development, public transport, and parts of education. A directly elected county administrator (*Landrat*) is the head of the county administration;⁶ a county council (*Kreistag*) is the local parliament.

German counties autonomously decide on upper-local affairs including the allocation of expenditures. Social and administrative expenditures account for around two thirds of total expenditures of German counties. In 2013, German counties spent some 34 billion Euros (around 620 Euro per capita) which is about 25% of total local government expenditures. Total local government expenditure was around 14% of total public expenditure (federal level: 24%, state level: 23%, national insurance: 37%, EU: 2%). While German municipalities tax property and local business and receive parts of income and value added tax revenues, while counties, however, do not hold own tax competences. Instead, counties levy contributions from the municipal level (*Kreisumlage*), receive transfers from the federal states, or borrow. Both contributions from municipalities and state transfers mainly depend on local tax capacity. Around 100 urban counties (*kreisfreie Städte*) exercise both county functions and municipal functions as one; we

⁶ With the exception of the state Schleswig-Holstein, county administrators are directly elected in all German states.

exclude these large cities from the analysis because these cities differ substantially in terms of population and institutions.

German federal states decide on the scope of local government including merger reforms. In this paper we investigate a county merger reform in the East German state of Saxony-Anhalt. The main target of the reform was to amalgamate and concentrate county administrations in the new county capital in order to improve efficiency and to operate more economically. The reform induced comparably little conflict. Starting in 1999, the state government negotiated reform guidelines with counties officials including minimum and maximum sizes of newly formed counties. In 2004, counties agreed on the guidelines. Newly formed counties should at have a population between 150,000 and 300,000 by 2015⁷ and the size of a county should not exceed 2,500 square kilometres. Exceptions, however, were possible. Mergers should also consider regional cultural and economic linkages. Voluntary mergers were first priority. Many county councils proposed voluntary mergers; the state government basically followed all proposals. In May 2005, the state government announced a concrete reform act to merge counties by summer 2007. Finally, the state parliament approved the reform in late 2005. Three urban counties and two rural counties remain basically unchanged, while 19 other counties were restructured into nine new ones.⁸ At least five newly created counties perfectly correspond with proposals for voluntary mergers; four others correspond to large extent. Average population of rural counties increase from around 90,000 to 170,000. Figure 1 maps the pre-reform and post-reform geography of Saxony-Anhalt. The reform in Saxony-Anhalt implemented the first county mergers since the early 1990s. In 2008 and 2011, the states of Saxony and Mecklenburg-

⁷ The draft of the reform act includes a full description of the merger process (see *Entwurf eines Kommunalneugliederungsgesetzes (KngG)*, Drs. 4/2182).

⁸ In 2004/2005, the state government also merged municipalities. We abstract from this the merger reform which affected municipalities of all counties.

West Pomerania followed. In both states, however, all counties were merged and counterfactuals within the states are not available. Moreover, responsibilities of counties differ across states and no other German state implemented county merger reforms in the last twenty years. We therefore limit our analysis to Saxony-Anhalt only.

Until the present day, there was no evaluation of the county merger reform. Opinion polls from 2017 however show that only 30% of all citizens are pleased with the reform; 45% are somewhat or strongly dissatisfied.⁹ Newspapers also report that costs increased after the reform.¹⁰ However, it remains unclear whether increases can be attributed to the merger reform. We will address this issue in our analysis later on.

[Figure 1 about here]

2.2 County mergers in Styria (Austria) 2012/2013

The institutional background of counties (*Bezirke*) in Austria differs to large extent from Germany. Austrian county administrations are decentralised branches of the state government rather than autonomous local authorities. Therefore, there are neither councils nor elections at the county level in Austria. The state government appoints the leader of the county administration (*Bezirkshauptmann*) and decides on the budget and the number of employees. Responsibilities of Austrian counties overlap with German counties to some extent, for example, when it comes to social care or issuing driver's licenses, but Austrian counties are more limited to pure administrative functions. Therefore, Austrian county administrations are by far smaller than German

⁹ Volksstimme.de, Umfrage: Kreisgebietsreform stößt auf geteiltes Echo, <https://www.volksstimme.de/sachsen-anhalt/umfrage-kreisgebietsreform-stoesst-auf-geteiltes-echo/1491928053000>. In another German state, Mecklenburg-West Pomerania, poll data show that around 69% of all respondents opposed district mergers that were enacted in 2011. Also 69% of all respondents do not believe in cost savings and 72% do not believe that the local administration will get closer to the people. Thus, people anticipated fiscal null effects while politicians widely believed in cost savings. See Kommunal.de, Gebietsreformen bringen Unmut, <https://kommunal.de/artikel/gebietsreformen-umfragen/>.

¹⁰ Mitteldeutsche Zeitung online, Kreisreform im Jahr 2007 in Sachsen-Anhalt hat kein Geld gespart – Verwaltung sogar teurer, <https://www.mz-web.de/sachsen-anhalt/kreisreform-2007-umstrittene-fusionen-sparen-kein-geld---verwaltung-sogar-teurer-25014952>.

counties (around 1.4 vs 5.4 employees per 1,000 capita in our sample). By 2013, Austrian county administrations spend some 75 Euro per capita and year on average.

The number and organization of Austrian counties changed only very little in the past 60 years – compared to the German case. In 1950, Austria had 93 counties and increased the number to 99 in 2011. The very first merger reform of counties in Austria after WWII came into force in 2012/2013.¹¹ The state government of Styria merged 8 counties into 4 new ones while 8 other counties remain untouched, the urban county of Graz notwithstanding (see Figure 1). As in the German case of Saxony-Anhalt, the state government intended to cut costs, increase efficiency and provide economically sustainable administration. The reform process, however, sharply contrast with the German case. Because Austrian counties are part of the state government and there are no elected representatives at the county level, the state government decided on mergers “top down” in April 2012. Voluntary mergers were neither intended nor possible. By January 2013, the average county population size increase from 59,000 to 79,000. In 2016, the state government of Styria praised that merged counties reduced costs and administrative staff.¹² The government, however, does not compare figures in merged counties to the counterfactual situation, which is given by non-merged counties. If unmerged counties also reduced staff, savings are a result of global trends rather than a result of the reform. In the next sections, we provide evidence that there would have been reductions even in the absence of the merger reform.

¹¹ In 2015, the state government also merged municipalities. We abstract from this the merger reform which affected municipalities of all counties. See Roesel (2016).

¹² See ORF.at, Bezirksfusionen bringen Millioneneinsparungen, <http://steiermark.orf.at/news/stories/2816748/>.

3. Empirical strategy

3.1 Data

We collect annual data on expenditures in different categories, on the number of staff, and on political economy outcomes (voter turnout, party vote shares) for all counties of the German state of Saxony-Anhalt for the period 1995 to 2016 from official publications. Data are not available for some years; column (5) in the descriptive statistics (Table 2) provides an overview. Fiscal data refer to expenditures per capita on staff, materials, rents, maintenance, interest payments and investments. We do not transfer data to constant prices because time fixed effects entirely cover changes in price levels and inflation rates were comparably low. We measure staff as the number of employees or the number full time equivalents per capita. Finally, we use data of 1999, 2004, 2007/2009, and 2014 county council elections, and compute voter turnout and vote shares for right-wing populist parties¹³ and independent non-partisan lists and candidates.

[Table 2 about here]

Data for Austrian counties are scarce because counties are formally part of the state government and do not run their own budget. However, we collect some three-year averages of county administration staff before and after the merger reform from publications of the Court of Auditors and the state government accompanying the annual budget.¹⁴ We also collect county-level data on state election outcomes (voter turnout and right-wing populist¹⁵ vote shares) before (2010)

¹³ These are DVU, DSU, Republikaner, DP, NPD, Offensive D, and AfD.

¹⁴ See Landesrechnungshof Steiermark, Bezirkshauptmannschaften, LRH 10 B 3/2005–16. Amt der Steiermärkischen Landesregierung, Stellenplan 2017, A5 Personal. Staff in nursing homes and other social institutions included.

¹⁵ FPÖ, BZÖ, and Team Stronach.

and after the merger reform (2015). We have to use state elections because Austrian counties do not have a county council, and the state government appoints the head of the administration.

3.2 Identification

Our main empirical strategy is to compare merged counties to non-merged counties within the same German or Austrian federal state over time. This allows us to abstract from heterogeneity across federal states in terms of responsibilities of counties. For identification, we estimate several difference-in-differences models using OLS in the following way; we run *separate* estimations for Saxony-Anhalt and Styria:

$$\log(y_{it}) = \beta(Treat_i \times Post-Mergers_t) + X'_{it}\gamma + \alpha_i + \delta_t + \varepsilon_{it} \quad (1)$$

y_{it} is the observed outcome of county i in period t (expenditures per capita, staff per capital, political economy outcome) which we include in logs. α_i and δ_t represent county and year fixed effects. County fixed effects cover unobservable heterogeneity across counties (i.e., time-invariant preferences toward spending and staff). Time effects eliminate events that affect all counties within a state simultaneously. β is the difference-in-differences estimator and our coefficient of interest; the interaction components $Treat_i$ and $Post-Mergers_t$ are collinear to county and time fixed effects and drop out. $X'_{it}\gamma$ is a vector of covariates. We include logged total population to control for growth effects. In the case of Saxony-Anhalt, we also include dummies for counties that switched to accrual accounting and for counties that run a decentralised public employment service on their own behalf (*Optionskommunen*). Finally, ε_{it} describes the error term. We use robust standard errors (Huber 1967, White 1980) without clustering of standard errors because the number of potential clusters is by far too low (11 and 12). Note that, clustering standard errors on the county level, however, would not change our results.

Because the decision to merge individual counties are hardly exogenous, the parallel or common trend assumption is crucial for our difference-in-differences identification strategy. Our empirical model proposes that in the absence of the merger reform, outcomes in merged counties would have evolved in a similar fashion than in non-merged counties. The difference-in-differences estimator captures the difference between the actual development (with reform) and its counterfactual counterpart (no reform). For Styria, we cannot test pre-reform trends because we observe one pre-reform period only. For the case of Saxony-Anhalt, we can visualise pre-reform trends at least for expenditure and staff figures where we can rely on longer and more frequent time series. Figure 2 show that pre-reform trends in expenditures per capita and in staff per capita does not differ among counties that were merged and those that were not merged in 2007. In some expenditure categories, for example, maintenance, pre-reform levels differ. Interestingly, pre-reform expenditure levels were already lower in counties intended to merge. Despite differences in levels, trends in all variables are parallel. Therefore, we are confident to propose that parallel trends would have continued for all variables under investigation in the absence of the 2007 merger reform, and our difference-in-differences estimator captures the causal reform effect quite well.

Figure 2 also offers some preliminary results when we consider the post-reform time. Graphical inspection does not exhibit any significant change in the parallel trends after 2007. If the reform would have been effective, expenditure figures of merged and unmerged counties should diverge. Instead, pre-reform parallel trends continue after the reform. We take this as a first piece of evidence that the merger reform may have not resulted in savings on the county level.

[Figure 2 about here]

4. Results

4.1 Fiscal effects

We now test expenditure effects of county merger reforms in the difference-in-differences regression setup described above. The upper panel of Table 3 shows the results for different expenditure categories in the German state of Saxony-Anhalt. The results confirm our “eyeball econometrics” impressions from Figure 2: we do not find significant cost reductions in any expenditure category. By contrast, expenditures for rents increase rather than decrease in merged counties, which might be a result of the reorganization of county administrations: Enlarged administrations quickly need larger buildings and offices in the new county capital. It takes some time to construct these buildings; administrations therefore may have to rent some further offices at least for the time of transition.

[Table 3 about here]

As a robustness check, we also compute effects for individual years around the merger reform (see Table 4). The findings confirm our baseline results: We find significant increases in rent expenditures in merged counties but do not prove any cost reduction.

[Table 4 about here]

Returning to Table 3, we also assess the effects on staff. We do not find that mergers reduced staff per capita in the case of Saxony-Anhalt (columns (7) and (8)), which corroborates our null findings for staff expenditures. The same is true for the Austrian merger reform under investigation (see lower panel of Table 3). We do not find a significant effect of county mergers on staff or expenditures in any other administrative function at least 6 to 9 years after the merger reform. For two main reasons, the parallel findings for Germany and Austria are of crucial importance. First, Austrian counties are by far smaller than the German ones. Null effects in

German counties may arise because counties were already large enough. However, we do also find null effects in the Austrian case rejecting this hypothesis. Second, the Austrian case allows us to rule out that political economy drives the results. In the German case, a local council decides on the annual budget. One (rather trivial) explanation why expenditures in merged counties may not change might be that local preferences do not change. In Austria, however, the state government decides on county staff and finance and may realize (potential) scale more easily. However, in neither case we observe a change in county staff.

Altogether, the results confirm prior findings that mergers of local administrations do not result in cost savings (see Blesse and Roesel 2017). This finding may explain why only few countries applied merger reforms so far (Table 1). Germany is the only exception. We argue that the German trend toward county mergers might not be driven by best-practice experiences, but might be rather a result of mimicking and yardstick competition. In Germany, not the central government but federal states decide on local government structures. In 1969, the state of Rhineland-Palatinate was the first state that implemented county mergers albeit the academic debate was not settled at the time (Hoffmann 1973). In 1970, 1972, 1973, and 1974, all other West German states followed the example of Rhineland-Palatinate, however, without investigating the outcomes of reforms in other states.¹⁶ Because reforms quite often target mean county population in all other states, Germany saw a race to the top in terms of county population. In 2017, however, the states of Brandenburg and Thuringia stopped county mergers after large-scale protests that explicitly refer to the ineffectiveness of merger reforms in other states.

¹⁶ German state officials did not carry out or commissioned a reform evaluation for decades. Instead, officials argue that responsibilities of counties changed; pre- and post-reform figures were therefore not comparable (see, for example, *Mitteldeutsche Zeitung*, 10 Jahre Gebietsreform: Rosenhochzeit im Saalekreis ohne Liebe?, <https://www.mz-web.de/merseburg/10-jahre-gebietsreform-rosenhochzeit-im-saalekreis-ohne-liebe--25137234>). We account for changes in responsibilities because we compare merged to non-merged counties that both experienced the same changes in responsibilities.

4.2 *Political effects*

County mergers do not only amalgamate administrations but also, in the case of Germany, county councils. The number of county councillors sharply decrease and areas become unwieldy large. As a result, public goods may be provided less efficient because information asymmetries increase and preferences become more heterogeneous (Oates 1972). Observers therefore worry that merger reforms may induce dissatisfaction, increase distances to the administration, and reduce political participation. Denters et al. (2014) document adverse effects of jurisdiction size on local democracy, especially in small municipalities. Hansen (2015) shows that satisfaction with the local administration and with the local democracy decreased in the course of Danish municipal mergers. The findings by Lassen and Serritzlew (2011a, 2011b) suggest that this might be result of decreases in internal political efficacy, i.e., the ability to perceive and to understand processes in local politics. Citizens may not accept artificially constructed jurisdictions and react by abstaining from elections or voting for populist parties. Roesel (2016) provides some descriptive evidence for this effect. Second, voter turnout may decrease because election incentives decrease. Studies consistently show that voter turnout decrease in constituency size because the probability to be the pivotal voter decrease (for surveys see Cancela and Geys 2016, van Houwelingen 2017). Third, larger counties may crowd out non-partisan candidates that cannot rely on party organizations, which are required to keep in touch with local problems in unwieldy large jurisdictions (Fritz und Feld 2015).

We investigate whether merger reforms come with adverse effects on political outcomes related to these three hypothesis: voter turnout, vote shares for right-wing populists, and vote shares for non-partisan candidates. Table 5 shows for the case of Saxony-Anhalt that voter turnout in county council election decrease by 4.3 percentage points in merged counties compared to unmerged counties. This is fully in line with findings by Fritz and Feld (2015), Koch and Rochat (2017), and Lapointe et al. 2018 for municipal mergers in Germany, Switzerland, and Finland

respectively. Vote shares for right-wing populists, by contrast, increase by around 1.8 percentage points, which is substantial given the mean right-wing populist vote share of 2.0 percent. Finally, we do not find an effect on non-partisan candidate vote shares contrasting former findings for the municipal level (Fritz and Feld 2015). Thus, county mergers do not affect lists of independent candidates. The results for Saxony-Anhalt entirely reproduce findings by Roesel (2017) for the neighboring state of Saxony that also merged counties: Voter turnout decrease, right-wing populists benefit, and vote shares for independent non-partisan candidates are not affected. Therefore, even against the background that most mergers in Saxony-Anhalt were somewhat voluntary and accepted by local councils, voters seem to protest against larger jurisdictions. Koch and Rochat (2017) report similar effects on voter turnout for Swiss municipalities where also local referenda on municipal mergers were held. Lapointe et al. 2018 elaborate on the Finish case. We conclude that based on our empirical findings also mergers on the county level may have adverse effects on local democracy.

[Table 5 about here]

In the Austrian state of Styria, county administrations are formally part of the state government. Therefore, we examine changes in political outcomes of the state elections 2010 (before mergers) and 2015 (after mergers). The results fairly replicate our findings for Saxony-Anhalt regarding the negative effects on voter turnout. We interpret this finding as suggestive evidence for protest against the compulsory merger reform by the state government. However, the connection between state elections and county mergers is much looser in Austria. Thus, we do not confirm an effect on right-wing populist vote shares. There were also no independent non-partisan candidates in Austrian state elections.

5. Conclusion

We have shown that county mergers do not pay off in terms of cost or staff reductions. Thereby, the institutional background does not matter: In Germany, counties act autonomously as upper-level local governments. In Austria, by contrast, counties are decentralised administrations of the state government. We do neither show that mergers lead to scale effects in the German case nor in the Austrian case. Instead, voter turnout decrease and right-wing populists seem to gain additional support. Thus, political costs clearly outweigh fiscal null benefits of county merger reforms – independent of the institutional setting considered here.

However, our study has limitations, which further research may address. First, we stick to fiscal outcomes only but do not observe efficiency. If the same amount of money is spent for even more valuable projects, efficiency (output-input relations) increase even when costs remain constant. Our null effects in expenditures may mask these kind of efficiency improvements. A valuable avenue would be to address this issue, for example, by investigating changes in DEA (data envelopment analysis) scores of local administrations before and after merger reforms. Second, we observe a rather low number of merged and unmerged counties. If researchers would like to investigate reforms where only one or few counties were merged (for example, Ireland, Israel, or Norway), the synthetic control method offers a reasonable framework (see Abadie et al. 2015). Finally, we find robust and significant effects on political economy outcomes but can yet only hypothesise on the underlying channels. A highly valuable research question is *why* citizens abstain from voting in enlarged jurisdictions. Further research may address the mechanisms of adverse effects of merger reforms on local democracy in more detail. Moreover, future research should address related quasi-experimental effects of the implementation or abolishment of inter-municipal cooperation and hence the question, whether inter-municipal cooperation offers a valid alternative to size consolidation of local governments (Allers and van Ommeren 2016).

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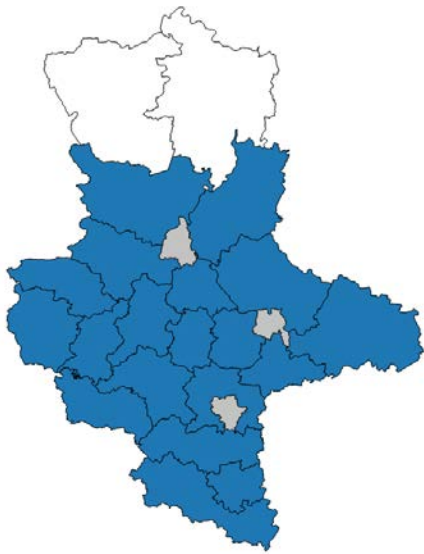
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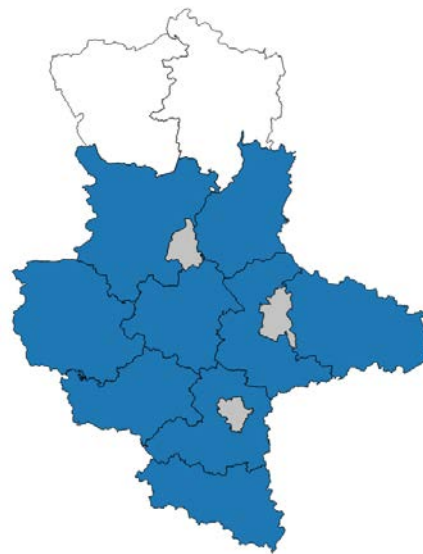
FIGURE 1. COUNTY MERGERS

Germany (federal state of Saxony-Anhalt)

Before mergers

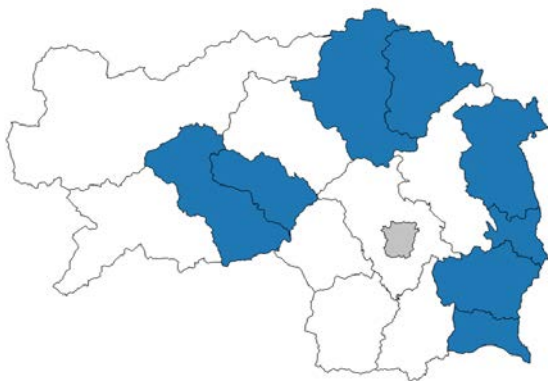


After mergers (2007)

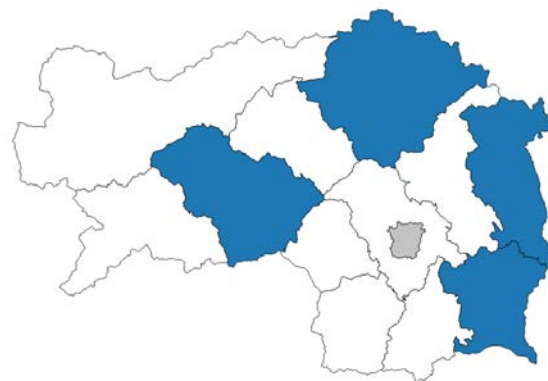


Austria (federal state of Styria)

Before mergers



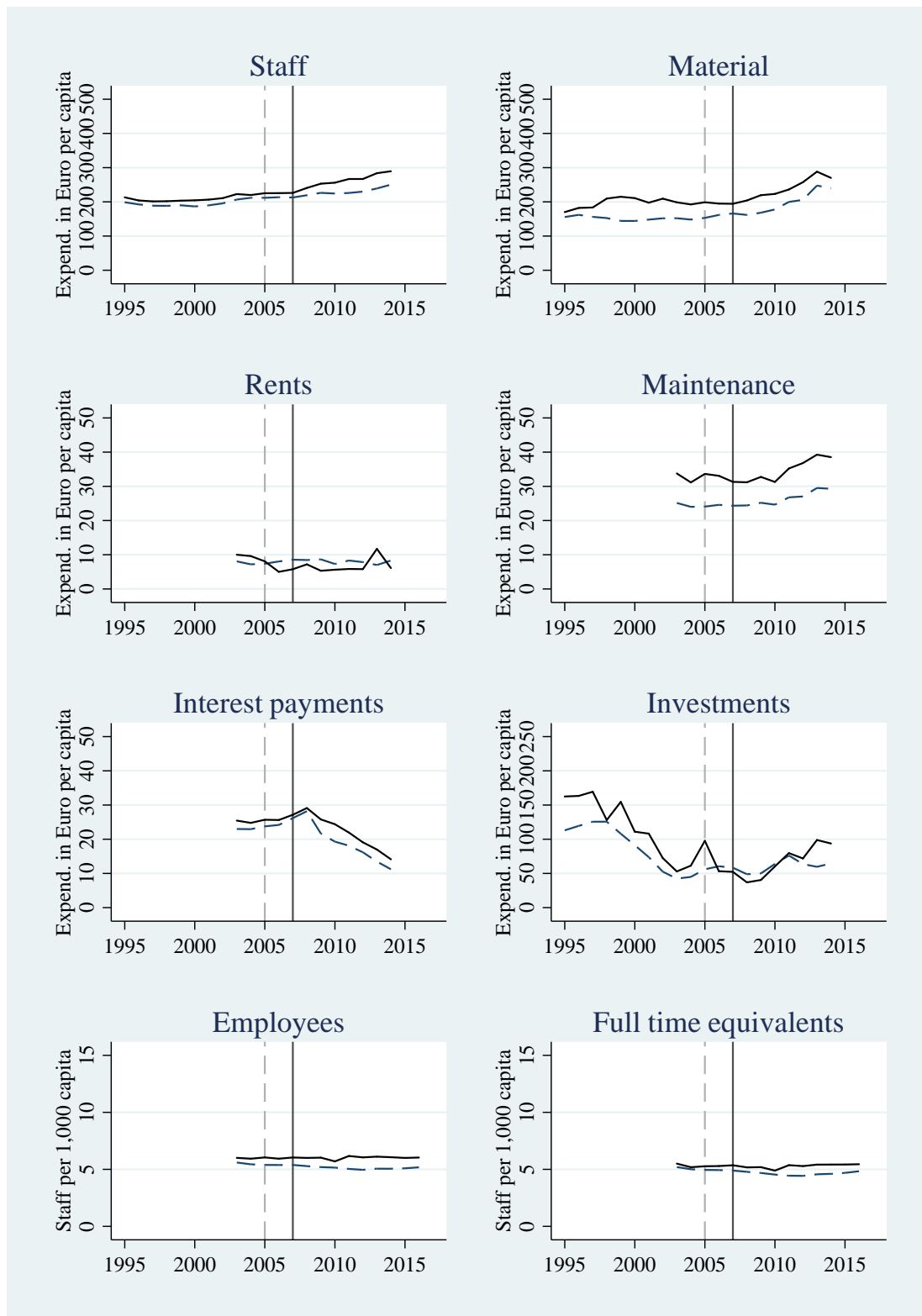
After mergers (2012/2013)



■ Merged counties (treatment group) □ Unmerged counties (control group) ■ Urban counties (excluded)

Notes: The maps show the shift in county borders in the German state of Saxony-Anhalt (*Landkreise*, upper panel) and in the Austrian state of Styria (*Bezirke*, lower panel) following merger reforms in 2007 and 2012/2013. White and blue shaded areas represent unmerged and merged counties; urban counties are colored in grey.

FIGURE 2. COMMON TRENDS BEFORE MERGER REFORM (GERMANY ONLY)



— Merged counties (treatment group) — Unmerged counties (control group)

Notes: The figure shows pre- and post-merger reform trends in expenditures and staff of nine merged counties in the German state of Saxony-Anhalt (blue dashed lines). Two unmerged counties serve as the control group (black solid lines). Vertical lines depict the announcement (grey dashed line) and the implementation (black solid line) of the merger reform in 2005 and in 2007.

TABLE 1. NUMBER OF COUNTY ADMINISTRATIONS IN SELECTED OECD COUNTRIES

	<i>Ger- many</i>	<i>Sweden</i>	<i>Norway</i>	<i>Luxem- bourg</i>	<i>Austria</i>	<i>Ireland</i>	<i>Estonia</i>	<i>Poland</i>	<i>Hun- gary</i>	<i>US</i>	<i>Slo- vakia</i>	<i>Turkey</i>
<i>Elected coun- cil?^a</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>	<i>No</i>	<i>No</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>	<i>No</i>
<i>1950</i>	705	24	20	12	93	25	11	308 ^b	9 ^c	3,111	38 ^d	422
<i>2013</i>	402	21	19	12	95	28	15	314	24	3,143	79	919
Δ	-303	-3	-1	0	+2	+3	+4	+6	+15	+32	+38	+497

Notes: The figure compares the number of county administrations (and equivalents) in selected countries in 1950 to 2013. Source: National statistical offices, Statoids.com, Swianiewicz and Lukomska (2017) for Poland. a) Information on election of district councils from Treisman (2008). b) This number refers to 1999 as Polish counties (powiats) were only established in 1999. c) This number refers to the year 1990 for Hungarian districts (megyek). d) This number refers to the year 1990 for Slovak districts (okresné).

TABLE 2. DESCRIPTIVE STATISTICS

<i>Panel A: Germany (Saxony-Anhalt)</i>						
	<i>Obs.</i>	<i>Mean</i>	<i>Std. Dev.</i>	<i>Min</i>	<i>Max</i>	<i>Covered period</i>
	(1)	(2)	(3)	(4)	(5)	
<i>Expenditures (Euro per capita)^a</i>						
<i>Staff</i>	220	213.951	31.344	162.564	306.530	1995–2014
<i>Materials</i>	220	177.678	54.074	90.849	348.440	1995–2014
<i>Rents</i>	132	7.791	3.469	1.956	21.027	2003–2014
<i>Maintenance</i>	132	27.254	5.872	17.155	43.980	2003–2014
<i>Interest payments</i>	132	21.168	8.648	5.341	52.230	2003–2014
<i>Investments</i>	220	78.313	41.307	20.696	234.162	1995–2014
<i>Staff (per 1,000 capita)</i>						
<i>Employees</i>	153	5.369	0.675	4.277	7.723	2003–2016
<i>Full time equivalents</i>	153	4.852	0.624	3.852	7.186	2003–2016
<i>Political economy (county council elections)</i>						
<i>Voter turnout</i>	56	43.616	6.018	32.266	59.482	1999–2014
<i>Vote share right-wing populists</i>	56	2.045	2.130	0	8.424	1999–2014
<i>Vote share non-partisans</i>	56	8.658	5.073	0	20.629	1999–2014
<i>Controls</i>						
<i>log Population</i>	322	12.017	0.348	11.326	12.552	1995–2016 ^b
<i>Accrual accounting</i>	322	0.264	0.441	0	1	1995–2016
<i>Decentralised public employment service</i>	322	0.211	0.409	0	1	1995–2016
<i>Panel B: Austria (Styria)</i>						
	<i>Obs.</i>	<i>Mean</i>	<i>Std. Dev.</i>	<i>Min</i>	<i>Max</i>	<i>Covered period</i>
	(1)	(2)	(3)	(4)	(5)	
<i>Staff (per 1,000 capita)</i>						
<i>Employees</i>	24	1.402	0.282	0.988	1.951	2003, 2016 ^c
<i>Political economy (state elections)</i>						
<i>Voter turnout</i>	26	69.860	3.633	60.727	75.969	2010, 2015
<i>Vote share right-wing populists</i>	26	21.376	8.789	10.968	35.120	2010, 2015
<i>Controls</i>						
<i>log Population</i>	26	11.314	0.495	10.252	12.522	2003, 2016 ^c

Notes: The table show the descriptive statistics for the German state of Saxony-Anhalt (upper panel) and the Austrian state of Styria (lower panel). a) Expenditures in Euro per capita and current prices. a) Population 2016 proxied with population 2015. c) 2003: average over the years 2002, 2003, 2004; 2016: average over the years 2015, 2016, 2017.

TABLE 3. FISCAL EFFECTS OF MERGER REFORMS

<i>Panel A: Germany (Saxony-Anhalt)</i>								
	log Expenditures per capita						log Staff	
	<i>Staff</i>	<i>Materials</i>	<i>Rents</i>	<i>Maintenance</i>	<i>Interest payments</i>	<i>Investments</i>	<i>Employees</i>	<i>Full time equivalents</i>
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
<i>(Treat × Post-Mergers)</i>	-0.052	0.026	0.299**	0.032	-0.147	0.142	-0.069	-0.083
	(0.059)	(0.107)	(0.097)	(0.048)	(0.156)	(0.112)	(0.075)	(0.089)
log Population	-0.053	-0.478	-0.696	0.794	-8.647**	-0.314	2.742	3.155
	(0.539)	(2.265)	(3.384)	(3.135)	(3.203)	(2.195)	(3.331)	(3.513)
<i>Period</i>	1995–2014	1995–2014	2003–2014	2003–2014	2003–2014	1995–2014	2003–2016	2003–2016
<i>Year fixed effects</i>	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
<i>County fixed effects</i>	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
<i>Further controls</i>	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
<i>Counties</i>	11	11	11	11	11	11	11	11
<i>Obs.</i>	209	209	121	121	121	209	142	142
<i>Within R²</i>	0.682	0.475	0.241	0.519	0.879	0.579	0.158	0.233
<i>Panel B: Austria (Styria)</i>								
	log Expenditures per capita						log Staff	
	<i>Staff</i>	<i>Materials</i>	<i>Rents</i>	<i>Maintenance</i>	<i>Interest payments</i>	<i>Investments</i>	<i>Employees</i>	<i>Full time equivalents</i>
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
<i>(Treat × Post-Mergers)</i>	–	–	–	–	–	–	-0.006	–
	–	–	–	–	–	–	(0.108)	–
log Population	–	–	–	–	–	–	0.653	–
	–	–	–	–	–	–	(0.847)	–
<i>Period</i>	–	–	–	–	–	–	2003, 2015	–
<i>Year fixed effects</i>	–	–	–	–	–	–	Yes	–
<i>County fixed effects</i>	–	–	–	–	–	–	Yes	–
<i>Counties</i>	–	–	–	–	–	–	12	–
<i>Obs.</i>	–	–	–	–	–	–	24	–
<i>Within R²</i>	–	–	–	–	–	–	0.402	–

Notes: The table shows the results of difference-in-differences estimations comparing nine merged counties to two unmerged counties in Saxony-Anhalt (upper panel) and four merged counties to eight unmerged counties in Styria (lower panel). Logged expenditures or staff per capita are the dependent variables. *(Treat × Post-Mergers)* denotes the reform effect. We exclude the reform year 2007 in the case of Saxony-Anhalt. Further controls: Dummies for counties with accrual accounting and with decentralised public employment service. Significance levels (Robust standard errors in brackets): *** 0.01, ** 0.05, * 0.10.

TABLE 4. FISCAL EFFECTS BY POST-MERGER YEAR (GERMANY ONLY)

<i>Panel A: Germany (Saxony-Anhalt)</i>								
	log Expenditures per capita						log Staff	
	<i>Staff</i>	<i>Materials</i>	<i>Rents</i>	<i>Maintenance</i>	<i>Interest payments</i>	<i>Investments</i>	<i>Employees</i>	<i>Full time equivalents</i>
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
<i>(Treat × Before 3 Years)</i>	0.079** (0.034)	-0.047 (0.128)	0.070 (0.104)	0.053 (0.063)	0.039 (0.047)	-0.108 (0.178)	0.008 (0.039)	0.045 (0.052)
<i>(Treat × Before 2 Years)</i>	0.051 (0.050)	-0.041 (0.131)	0.234 (0.183)	-0.012 (0.072)	0.023 (0.071)	0.105 (0.869)	-0.023 (0.044)	0.016 (0.047)
<i>(Treat × Before 1 Year)</i>	0.057 (0.077)	0.028 (0.138)	0.738* (0.360)	0.027 (0.083)	0.041 (0.135)	0.379 (0.223)	-0.012 (0.050)	-0.001 (0.047)
<i>(Treat × After 1 Year)</i>	0.026 (0.065)	0.001 (0.129)	0.437 (0.344)	0.086 (0.104)	0.023 (0.269)	0.542 (0.379)	-0.031 (0.061)	0.000 (0.070)
<i>(Treat × After 2 Years)</i>	0.014 (0.064)	-0.084 (0.160)	0.836*** (0.153)	0.059 (0.115)	-0.093 (0.159)	0.458 (0.278)	-0.055 (0.067)	-0.033 (0.067)
<i>(Treat × After 3 Years)</i>	-0.009 (0.063)	-0.029 (0.155)	0.666*** (0.118)	0.082 (0.103)	-0.145 (0.166)	0.306 (0.177)	-0.006 (0.104)	-0.001 (0.099)
<i>(Treat × After 4 Years)</i>	-0.045 (0.075)	0.024 (0.170)	0.742*** (0.131)	0.051 (0.114)	-0.140 (0.213)	0.201 (0.153)	-0.099 (0.094)	-0.106 (0.092)
<i>(Treat × After 5 Years)</i>	-0.068 (0.066)	-0.004 (0.144)	0.557** (0.204)	-0.002 (0.077)	-0.113 (0.261)	0.123 (0.137)	-0.126 (0.090)	-0.124 (0.088)
<i>(Treat × After 6 Years)</i>	-0.094 (0.077)	0.089 (0.193)	0.113 (0.370)	0.026 (0.082)	-0.197 (0.189)	-0.231 (0.141)	-0.116 (0.086)	-0.116 (0.087)
<i>(Treat × After 7 Years)</i>	-0.066 (0.072)	0.134 (0.139)	0.560*** (0.137)	0.034 (0.093)	-0.194 (0.272)	-0.116 (0.289)	-0.103 (0.109)	-0.103 (0.105)
<i>log Population</i>	-0.081 (0.531)	-0.456 (2.323)	-0.973 (3.649)	0.756 (3.260)	-8.712** (3.304)	-0.422 (2.244)	2.685 (3.440)	3.074 (3.620)
<i>Period</i>	1995–2014	1995–2014	2003–2014	2003–2014	2003–2014	1995–2014	2003–2016	2003–2016
<i>Year fixed effects</i>	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
<i>County fixed effects</i>	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
<i>Further controls</i>	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
<i>Counties</i>	11	11	11	11	11	11	11	11
<i>Obs.</i>	209	209	121	121	121	209	142	142
<i>Within R²</i>	0.693	0.480	0.366	0.530	0.885	0.599	0.178	0.256

Notes: The table shows the results of difference-in-differences estimations comparing nine merged counties to two unmerged counties in Saxony-Anhalt. Logged expenditures or staff per capita are the dependent variables. (Treat × After n years) denote the effects n years after the reform year 2017. Further controls: Dummies for counties with accrual accounting and with decentralised public employment service. We exclude the reform year 2007. Significance levels (Robust standard errors in brackets): *** 0.01, ** 0.05, * 0.10.

TABLE 5. POLITICAL EFFECTS OF MERGER REFORMS

<i>Panel A: Germany (Saxony-Anhalt) – County elections</i>			
	<i>Voter turnout</i>	<i>Vote share right-wing populists</i>	<i>Vote share non-partisans</i>
	(1)	(2)	(3)
<i>(Treat × Post-Mergers)</i>	-4.342**	1.727***	0.159
	(1.446)	(0.447)	(1.696)
<i>log Population</i>	-15.308	-28.284*	-72.158**
	(22.259)	(14.550)	(27.075)
<i>Period</i>	1999–2014	1999–2014	1999–2014
<i>Year fixed effects</i>	Yes	Yes	Yes
<i>County fixed effects</i>	Yes	Yes	Yes
<i>Counties</i>	11	11	11
<i>Obs.</i>	44	44	44
<i>Within R²</i>	0.807	0.504	0.532
<i>Panel B: Austria (Styria) – State elections</i>			
	<i>Voter turnout</i>	<i>Vote share right-wing populists</i>	<i>Vote share non-partisans</i>
	(1)	(2)	(3)
<i>(Treat × Post-Mergers)</i>	-1.134**	0.552	–
	(0.408)	(1.354)	–
<i>log Population</i>	1.798	2.109	–
	(2.545)	(16.790)	–
<i>Period</i>	2010, 2015	2010, 2015	–
<i>Year fixed effects</i>	Yes	Yes	–
<i>County fixed effects</i>	Yes	Yes	–
<i>Counties</i>	12	12	–
<i>Obs.</i>	24	24	–
<i>Within R²</i>	0.923	0.984	–

Notes: The table shows the results of difference-in-differences estimations comparing nine merged counties to two unmerged counties in Saxony-Anhalt (upper panel) and four merged counties to eight unmerged counties in Styria (lower panel). Voter turnout or vote shares are the dependent variables. *(Treat × Post-Mergers)* denotes the reform effect. In the case of Saxony-Anhalt, we use data of the 1999, 2004, 2007 (2009), and 2014 county council elections. In the case of Styria, we use data of the 2010 and the 2015 state elections. Significance levels (Robust standard errors in brackets): *** 0.01, ** 0.05, * 0.10.