DISCUSSION PAPER

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Citizens' Trade-offs in State Merger Decisions: Evidence from a Randomized Survey Experiment

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Citizens' Trade-offs in State Merger Decisions:
Evidence from a Randomized Survey Experiment

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Abstract:

Voters dealing with jurisdictional merger decisions face a trade-off between economies of scale and preference costs. Larger jurisdictions may offer cost advantages, yet the downside is that policies in larger units may be less aligned to voter preferences. Our study is the first to provide evidence on this trade-off on the individual level in an experimental set-up. For this purpose, we designed a randomized survey experiment and inquired about preferences on state mergers on a representative sample of the German population. In line with the decentralization theorem, the support for mergers increases with cost savings and falls with preference costs measured as political alignment, respectively. The effects of the cost treatments on merger support are lower for respondents from states that are actually discussed as merger candidates. Effects are also weaker for citizens who have a positive view of their own political participation under the status quo.

Keywords: State-level mergers, optimal design of federations, economies of scale, political representation, survey experiment, decentralization theorem

JEL classification: H11, H77

1 Introduction

Population dynamics, spatial reallocation of economic activities, and changing levels of economic integration continuously change the optimal size and structure of jurisdictions. However, observable adjustments through jurisdictional mergers (or splits) tend to be rare events. This holds true in particular for higher levels of sub-national governments, i.e. for regions, states, districts or cantons, whereas adjustments are more frequent for municipalities (Blom-Hansen et al., 2016).[1]

The sub-national federal structure appears to be particularly stable after the formation of a federal state with only few adjustments over time. Germany, with its unchanged number of 16 federal states since the reunification in 1990, is an example for this status quo bias. German states are highly asymmetric both in terms of level and dynamics of economic activities. Moreover, some of the smallest states experience strong ageing and shrinking of their populations (see section 2). These trends challenge the current German state structure with respect to a cost-efficient provision of public goods. German policy makers do actually question the optimality of the existing federal structure. A recent survey suggests that a majority of state parliamentarians could imagine a reduction in the number of federal states in the coming years (Blesse et al., 2016). However, since 1990, no change of the German federal state structure occurred.[2] Similar to Germany, the number of US states and Canadian provinces has remained stable ever since World War II. While mergers of federal states or provinces are indeed rare, they have occurred occasionally in recent history. For instance, New Zealand decreased the number of regional councils in 1989 from 22 to 13, Finland reduced the number of provinces from 12 to 6 in 1997, and Denmark abolished the county level and merged 13 counties into 5 regions in 2007.

Different possible explanations for the inertia of this status quo exist. High political and financial transition costs may discourage a federal reform. Generous equalization systems often compensate for diseconomies of scale (Rodden, 2003; Sørensen, 2006), which is a relevant consideration for the far-reaching German equalization system. Moreover, from a political economy perspective, amalgamations are not necessarily in the interest of important veto players like the incumbent politicians. For example, they have to expect an intensifying competition for the remaining seats of the new after-merger state parliament and may thus be reluctant to mergers (Hyytinen et al., 2014).

While all these explanations are of obvious importance, our contribution focuses on a more fundamental restriction that is given by voter preferences. In particular, we study the individual voter's

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[1] Figure A.1 of the Appendix shows that the number of top tier governments (e.g. provinces, regions or states) in most federations among OECD countries were fairly stable since WWII. This is contrast to frequent consolidations at the municipal level among developed countries as reported in Blom Hansen et al. (2016).
[2] In the more distant past, (West) Germany experienced a merger of the states Württemberg-Baden, Württemberg-Hohenzollern and Baden to the new federal state Baden-Württemberg in the year 1952.

trade-off as it has been identified in theory since the decentralization theorem (Oates, 1972): On the one hand, larger jurisdictions promise economies of scale in public goods provision. But on the other hand, the larger entity is less able to tailor public goods provision or redistribution (Bolton & Roland, 1997) according to the preferences of citizens. The larger a jurisdiction, the less precise the match is between politics and voter preferences (Oates, 1972), and the lower citizens' opportunities to influence politics (Dahl & Tufte, 1973). This trade-off has also been the key building block for later work on endogenous secessions and mergers (Alesina & Spolaore, 1997, 2003; Buchanan & Faith, 1987).

Although this trade-off is well understood from a theoretical point of view and has been applied to empirical studies on endogenous mergers, there remains a gap in the literature. So far, no empirical studies exist which quantify the willingness to accept state mergers. We address this question for state mergers by studying which monetary gains from economies of scale need to be achieved in order to achieve voter support for such projects. In a real world merger, economies of scale are uncertain and hard to quantify precisely. Therefore, we study hypothetical scenarios of potential cost savings in the controlled environment of a self-designed survey experiment conducted for a nationally representative sample of the German population. The survey experiment has been implemented through the Mannheim based German Internet Panel (GIP).

Our survey experiment applies several treatments with respect to the expected cost savings from the fusion of German states. This allows us to identify a reservation price for merger acceptance depending on individual preference costs. To measure the preference costs of potential state amalgamation, we take two approaches: first, we compare the match between a respondent's party preference and both the pre-merger and (hypothetical) post-merger government. Since German states differ in their political traditions and party shares, a merger would change the political equilibrium. Hence, a fusion of states creates winners and losers as a respondent's preferred party will gain or lose vote and seat shares. We exploit that consideration to calculate our first respondent-specific preference cost indicator.

Our second dimension of preference costs is non-partisan and refers to the potential loss of voter control as a consequence of a larger state. Our survey includes questions about a respondent's self-perceived ability to understand, participate, and influence political decisions. These beliefs about one's ability to participate in and influence the democratic process has received considerable attention in the political science literature on 'political efficacy' and its link to jurisdiction size (see below). From this self-assessment we construct indicators on how serious a respondent should take the larger post-merger distance between voters and politicians. The expectation is that voters who, under the current structure, are pessimistic (optimistic) about their political influence will be less concerned (will be more concerned) about a loss of political control in a larger state. We are thus able to explicitly assess the

fundamental trade-off involved in merger decisions along two dimensions of preference costs which cover both partisan and voter involvement aspects.

Our experimental treatment of announcing cost savings through state mergers is effective, and savings of at least 100 euros per capita and year significantly increase the support for an amalgamation. Lower saving announcements do not increase voter support. We also confirm that preference costs decrease voter support for state mergers, countervailing the impact of hypothetical cost savings. An expected worsening of an individual's political alignment in a larger post-merger state leaves a merger less attractive. The results point to a relative large weight of the cost savings in the trade-off between savings and preference costs: Only if a respondent's preferred party has very high vote share in the pre-merger state this could neutralize the attraction of the cost saving.

Our political efficacy proxies do not show a direct effect on merger support. However, they weaken the impact of the cost savings treatments. The appeal of cost savings is smaller or even absent for respondents who have a positive view of their own political participation. This is a plausible finding insofar as this group is likely to see a particular disadvantage from a worsening of political representation in larger jurisdictions. Further analysis explores the impact of the salience of the merger debate. It shows that the cost savings treatments is weaker for respondents from those German states where an amalgamation with other states has actually been discussed.

Overall, these findings offer at least three explanations for the status quo bias of sub-national structures. First, the size of cost savings as implemented in our experimental treatment is substantial in economic terms and in the upper range of what can realistically be expected. Hence, the implied willingness-to-accept price for an increase in state size may simply be not be financially feasible. Second, the credibility of these cost savings promises seems to deteriorate once a specific state merger is actually discussed as indicated by our results on salience. Third, especially those voters who have a positive perception of a functioning democratic process with the current federal structure assign a small weight to cost savings when trading-off advantages against disadvantages of state mergers.

We relate to several strands of literature that have developed from the seminal theoretical contributions on optimal jurisdiction size. Contributions in fiscal federalism ask at which level of government specific public goods should be provided and taxes should be decided and collected. The first wave of seminal contributions (Musgrave, 1959; Oates, 1972; Tiebout, 1956) was followed by numerous extensions including the theoretical work on coalition formation from Alesina and Spolaore (1997, 2003) and Bolton and Roland (1997) who considered borders as endogenous choices facing a fundamental trade-off between economies of scale (favoring mergers) or the advantage from internalized regional externalities (Ellingsen, 1998) and local preference heterogeneity which speaks

for separation. The optimal size of jurisdictions is then determined by this trade-off but decentralized decision making on the jurisdiction size is known to be prone to inefficiencies (see De Donder et al., 2012 for a theoretical discussion).

Several empirical studies test the predictions of the literature on endogenous mergers through the analysis of observable (municipal) merger decisions. A general finding is that the extent of jurisdictional homogeneity is actually important (Alesina et al., 2004; Brasington, 2003; Gordon & Knight, 2009). The more homogenous the involved jurisdictions are in political (Austin, 1999; Bruns et al., 2015; Saarimaa & Tukiainen, 2014), societal, geographical (Bhatti & Hansen, 2011; Brasington, 1999; Gordon & Knight, 2009; Hanes et al., 2012; Miyazaki, 2014), or economic terms (Gordon & Knight, 2009; Hanes et al., 2012), the more likely is amalgamation. Fiscal transfer systems may also generate strong incentives for changes in the number of jurisdictions (Weese, 2015). Moreover, there is also evidence that larger potential benefits of mergers increase the likelihood of a merger of local governments (Brasington, 2003; Miyazaki, 2014). Saarimaa & Tukiainen (2016) also account for aggregate voter preferences and show that a larger distance of a municipality's median voter from the new post-merger political equilibrium makes an amalgamation less likely. We follow this approach in the measurement of partisan preference costs but are able to apply it to the individual voter level instead of the jurisdictional aggregates. A further distinct contribution is that we study the role of expected cost savings from an individual voter's perspective in a controlled experimental set-up. Unlike previous papers, we study the determinants of regional (state) jurisdiction size instead of municipal amalgamation.

Our contribution is also linked to a set of studies on voter preferences on jurisdictional mergers which so far only exist for the municipal context. For instance, Silberstein & Soguel (2012) provide a survey of voters in one Swiss municipal merger case. Kushner & Siegel (2003) apply a similar design for Canada. Both study the voter support for the amalgamation with a special attention for the role of access to municipal services using an ex post perspective. Miyazaki (2014) exploits data on voting in referenda on municipal consolidations and find that measures of preference heterogeneity matter decisions.[3] Related to our findings, Tanguay & Wihry (2008) find that voters' support of reverting on municipal mergers in local referenda in Canada increases with the share of expected changes in expenditures.[4] Other studies have looked at decision making of politicians: with a focus on municipal councils, Hyytinen et al. (2014) used individual votes for local amalgamation projects in Finland and

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[3] Brink (2004) and Lapointe (2018) find that preference heterogeneity matters for popular decisions on splits, too. Lapointe (2018) finds that voters are willing to pay additional taxes to live in their jurisdiction of choice.
[4] In a related study, Bergholz & Bischoff (2019) recently study the determinants on attitudes towards inter-municipal cooperation using a survey of local citizens in the German state of Hesse.

show local councilors avoid increased electoral competitiveness in their voting decision. Sørensen (2006) asked Norwegian mayors about their preferences to engage in municipal mergers. Similar to us, the author relates fusion support inter alia to the expected changes in party majorities in the newly formed municipality, relative to the respondent's party preference. While, conceptually, the municipal merger literature has inspired our research design, the empirical results for the local level are of limited information value for the state level. Thus, our study contributes to fill a gap which is the broad absence of empirical insights on the drivers of mergers in the context of regional jurisdictions.

Finally, our analysis is related to the literature on 'political efficacy' which describes a citizen's perception whether he can have an impact on the political process (Campbell et al., 1954). The internal dimension of political efficacy refers to the self-assessment of voters, whereas the external dimension refers to the citizen's image of political actors (Lane, 1961; Niemi et al., 1991). More precisely, 'internal efficacy' is defined as "beliefs about one's own competence to understand, and to participate effectively in, politics", and 'external political efficacy' as "beliefs about the responsiveness of governmental authorities and institutions to citizen demands" (Niemi et al., 1991, pp. 1407-1408). Questions of political efficacy have received increasing attention in the empirical fiscal federalism literature since Dahl & Tufte (1973), with the expectation that larger jurisdictions are likely to reduce political efficacy along both dimensions. Lassen & Serritzlew (2011) show that municipal mergers in Denmark led to a decrease in internal political efficacy. Similarly, Hansen (2013) finds that municipal mergers led to a decrease in political trust. We add to this literature by asking how an individual's political efficacy under the federal status quo impacts his or her ability to reason about potential future state mergers from an ex ante perspective.

Compared to previous papers, our study is unique in three respects: First, it develops an experimental setting to test the relevance of endogenous merger literature for the individual level. Second, the experiment uncovers both the extent as well as important determinants in the actual trade-off between preference costs and potential cost savings from the citizens' perspective. Third, we provide novel evidence on the determinants of individual voter support of state-level mergers where such insights are largely non-existent.

In the next section, we describe the federal and political context of Germany and outline the debate on possible state amalgamations. Section 3 introduces our experimental treatment implemented in the GIP survey, as well as descriptive results. Section 4 sets up and applies the empirical model which quantifies the trade-off involved. Finally, we discuss the external validity of our results, including the plausibility of the cost savings magnitudes as implemented in our treatments in Section 5.

2   Institutional context

2.1   Germany's federal structure

The Federal Republic of Germany is based on strong federalist principles. There are three tiers of government: the central tier (*Bund*), sixteen federal states (*Bundesländer*), and about 11,000 municipalities (*Gemeinden*). Up until the unification with the unitary German Democratic Republic (GDR), the Federal Republic consisted of eleven states. The last territorial change at the Western German state-level in the post-World War II period was the admission of Saarland, previously under French control, after a popular vote in 1957. With the unification of Eastern and Western Germany in the year 1990, five new federal states were created in Eastern Germany on the territory of the former GDR, called *Neue Länder* (new states). Before the unification, the subnational government in the GDR consisted of fifteen units or *Bezirke* (districts). The new federal post re-unification states are not, however, based on the old *Bezirke* boundaries. Since 1990, state level boundaries have remained unchanged.

Although federal states in Germany have less autonomy than in the US or in Canada, they represent important players in German federalism. A substantial range of public goods are provided by the states by law, e.g. education, health and police services, cultural goods, and judicature. In education, for example, states have extensive leeway in organizing primary and secondary education, including issues such as school structure, number of standard school years, or teachers' training and salaries. For inner security, states determine size, organization, payment and strategies of its police. Hence, programmatic differences of state governments can have an impact on actual policies, with high visibility to voters.

Moreover, the states can influence federal legislation in the upper house of the German federal parliament, the *Bundesrat*. This chamber consists of representatives from each state government and, together with the directly elected lower house, the *Bundestag*, constitutes the central legislator. Constitutional changes need a support of two thirds of all *Bundesrat* votes. All bills which have direct financial implications for the state level need an absolute majority of votes in the *Bundesrat*. The same condition holds for federal laws relevant to the administrative competencies of the states. For all other *Bundestag* legislation, the *Bundesrat* has the veto ability to suspend activities—its usage can, however, be rejected by the *Bundestag*.

The sixteen German states differ with respect to the traditional party orientations of the electorates. Traditionally, the conservative parties are stronger in the South than in the North, while Social Democrats and Socialists used to have higher shares in Eastern Germany (Table 1).[5]

Table 1: State level elections, average results 1990-2014

	CDU/CSU	SPD	Grüne	Linke	FDP	Others
Baden-Württemberg	41.8	27.2	12.8	3.0	7.9	7.3
Bavaria	52.1	23.9	7.3	3.3	3.9	9.5
Berlin	31.2	27.5	11.3	14.9	5.2	9.9
Brandenburg	22.8	38.1	4.9	21.5	3.8	8.9
Bremen	29.4	38.7	14.2	4.2	4.7	8.9
Hamburg	32.7	39.2	10.9	2.5	4.6	10.1
Hesse	40.6	34.1	9.9	5.6	8.3	1.5
Mecklenburg-Western Pomerania	31.6	32.9	4.6	19.1	4.7	7.2
Lower Saxony	40.2	38.8	8.2	3.6	6.9	2.4
North Rhine-Westphalia	36.2	41.6	8.6	2.5	6.9	4.2
Rhineland-Palatinate	36.1	42.1	7.7	2.8	7.2	4.1
Saarland	39.1	39.0	4.6	10.1	4.3	2.8
Saxony	48.2	13.2	4.9	18.7	4.6	10.4
Saxony-Anhalt	33.6	26.5	4.4	20.0	7.5	8.1
Schleswig-Holstein	34.8	37.3	8.5	2.6	8.1	8.7
Thuringia	41.1	19.4	4.9	21.6	4.6	8.5

Notes: CDU/CSU: Christian Democratic (conservative) parties with CSU in Bavaria and CDU in all other states, SPD: Social Democrats, Grüne: ecological party; Linke: socialist party, FDP: market liberal party. Source: wahlrecht.de

Whereas most revenues at the state-level accrue from tax revenues (73.9% in 2014; see Bundesministerium der Finanzen, 2015b), states do have very little tax autonomy. Most tax income is derived from vertically shared taxes like the personal and corporate income tax and the value added tax (VAT). For all these taxes, uniform tax rates are set throughout the federation. An extensive intergovernmental transfer system equalizes differences in fiscal capacity between federal states (for details: Bundesministerium der Finanzen, 2015a; Rodden, 2003). This complex equalization system involves various stages, including vertical (from the federal level to the states) and horizontal transfers (from richer to poorer states). The formula driving the redistribution of financial resources entails particular support not only for poor but also small states. Asymmetries in population weighting benefit both densely populated city states (Hamburg, Bremen and Berlin) and sparsely populated states in

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[5] This corresponds to the literature that has shown significant differences between the West and the East for political beliefs (Arnold et al., 2015) and redistributive preferences (Alesina & Fuchs-Schündeln, 2007; Bischoff et al., 2013).

Eastern Germany (Brandenburg, Mecklenburg-Western Pomerania and Saxony-Anhalt). In addition, a particular vertical grant is given to small states for "above-average administrative costs" (received by all Eastern German states as well as Bremen, Rhineland-Palatinate, Saarland and Schleswig-Holstein).

Population size, demographic trends, and economic power of the sixteen states are highly heterogeneous (Table 2). Population size differs between 17.6 million inhabitants (North Rhine Westphalia) and 0.7 million (Bremen). There are also continuing large differences in per capita income between the richer states in the Southwest (Hesse, Bavaria, and Baden-Württemberg), city states (Hamburg, Bremen) on the one hand, and the states in Eastern Germany on the other. Moreover, there are dramatic differences in population dynamics: especially small and relatively poor states like Saxony-Anhalt, Mecklenburg-Western Pomerania, Thuringia (all three in Eastern Germany), and the Saarland (Western Germany) are currently projected to lose 30 per cent or more of their population by 2060, with a much more stable development in the larger and more affluent states.

Table 2: German states population dynamics, and key economic data

	(1) Population (2014), in Mio.	(2) Population in 2060[a], in Mio.	(3) Change 2014-2060, in %	(4) GDP/capita, (2014), in 1,000 EUR	(5) Government expenditure (2014), per capita (EUR)[b]	(6) Unemploy-ment rate in % (2014)
Baden-Württemberg	10.7	9.6	-10	41.3	5,504	4.0
Bavaria	12.6	11.4	-9.6	41.9	5,794	3.8
Berlin	3.4	3.5	2.8	34.2	6,674	11.1
Brandenburg	2.5	1.7	-29.4	25.9	5,427	9.4
Bremen	0.7	0.6	-13.4	45.6	7,745	10.9
Hamburg	1.8	1.7	-0.4	59.8	6,804	7.6
Hesse	6.1	5.3	-12.9	41.8	5,968	5.7
Mecklenburg-Western Pomerania	1.6	1.1	-32.3	24.5	5,605	11.2
Lower Saxony	7.8	6.2	-20.3	32.5	5,048	6.5
North Rhine-Westphalia	17.6	14.4	-18.4	35.8	5,498	8.2
Rhineland-Palatinate	4	3.2	-21.1	32.4	5,118	5.4
Saarland	1	0.7	-30.6	33.8	5,375	7.2
Saxony	4.1	3.1	-24	26.9	5,475	8.8
Saxony-Anhalt	2.2	1.4	-37.8	25.1	5,567	10.7
Schleswig-Holstein	2.8	2.3	-20.2	29.8	5,058	6.8
Thuringia	2.2	1.5	-32.6	26.2	5,190	7.8

Notes: a – forecast with low immigration numbers. b – refers to total sum of state and municipal budgets. Sources: (1) Statistical offices of the central government and the federal states; (2) Federal statistical office; (3) Own calculation based on difference of column (1) and (2); (4) Statistical offices of the central government and the federal states; (5) Federal Ministry of Finance; (6) Federal statistical office.

2.2 State merger discussion and options

It is not surprising that these heterogeneities have continuously nurtured debates on a possible new formation of German states through mergers. Numerous consolidation alternatives have been proposed in the past for the German states, ranging from two partners like Berlin-Brandenburg, larger amalgamations like a "Northern State" (Hamburg, Bremen, Schleswig-Holstein, Mecklenburg-Western Pomerania) or "Middle Germany" (comprising several Eastern German states) to a comprehensive restructuring from the current sixteen to only six states in total (see for the discussion of various merger combinations: Büttner & Hauptmeier, 2006; Lammert, 2006; Old & Rösel, 2018; Rutz, 1995).

We have identified the most relevant amalgamations of the ongoing public debate through the following Google search algorithm: on 5 December 2016, we searched for either the word combinations "Bundesländer Fusion" (federal states fusion), "Länderfusion Deutschland" (state merger Germany), "Zusammenschluss Bundesländer" (amalgamation federal states), or "Länderzusammenschluss" (federal state mergers). We restricted the search for these mentions to the time period of 1 January to 31 December 2014. We found 11 possible coalitions being discussed online. According to Table 3, some states are being discussed as subject of an amalgamation more often than others, while Bavaria, Baden-Württemberg, and North Rhine-Westphalia are not the subject of these discussions, and most other German states were discussed as candidates for merger coalitions with up to 5 different partners (Thuringia). The federal states of Berlin, Brandenburg, Rhineland Palatinate, Saarland, Saxony, and Thuringia are discussed as candidates in three distinct combinations. Please note that discussed partners do not necessarily need to be direct neighbor states.

Figure 1 illustrates the distribution of discussed merger candidates across Germany. Figure 1 (a) informs whether or not a state is discussed as a merger partner at all. By contrast, Figure 1 (b) reports the number of potential merger partners that have been discussed by any given state.

Table 3: Overview of state merger discussion across German federal states

State	# of neighbor states	Merger discussion (yes/no)	# of discussed merger partners	# of discussed merger partners among neighbors	Discussed merger coalitions
Baden-Württemberg (BW)	3	No	0	0	--
Bavaria (BY)	4	No	0	0	--
Berlin (BE)	1	Yes	3	1	BB+BE+ST; BB+BE; SN+BE+BB+ST
Brandenburg (BB)	5	Yes	3	3	BB+BE+ST; BB+BE; SN+BE+BB+ST
Bremen (HB)	1	Yes	4	1	HB+NI; NI+SH+HH+HB+MV
Hamburg (HH)	2	Yes	4	2	SH+HH+MV; NI+SH+HH+HB+MV
Hesse (HE)	6	Yes	3	2	HE+RP+SL
Mecklenburg-Western Pomerania (MV)	3	Yes	4	2	SH+HH+MV; NI+SH+HH+HB+MV
Lower Saxony (NI)	9	Yes	4	4	HB+NI; NI+SH+HH+HB+MV
North Rhine-Westphalia (NW)	3	No	0	0	--
Rhineland-Palatinate (RP)	4	Yes	3	2	HE+RP+SL; RP+SL; HE+TH+RP+SL
Saarland (SL)	1	Yes	3	1	HE+RP+SL; RP+SL; HE+TH+RP+SL
Saxony (SN)	4	Yes	4	3	ST+TH+SN; SN+BE+BB+ST
Saxony-Anhalt (ST)	4	Yes	4	3	BB+BE+ST; TH+SN; ST+TH+SN; SN+BE+BB+ST
Schleswig-Holstein (SH)	3	Yes	4	3	SH+HH+MV; NI+SH+HH+HB+MV
Thuringia (TH)	5	Yes	5	3	TH+SN; ST+TH+SN; HE+TH+RP+SL

Figure 1: State-specific intensity of merger discussion

(a) State discussed as merger candidate   (b) Number of possible merger partners discussed
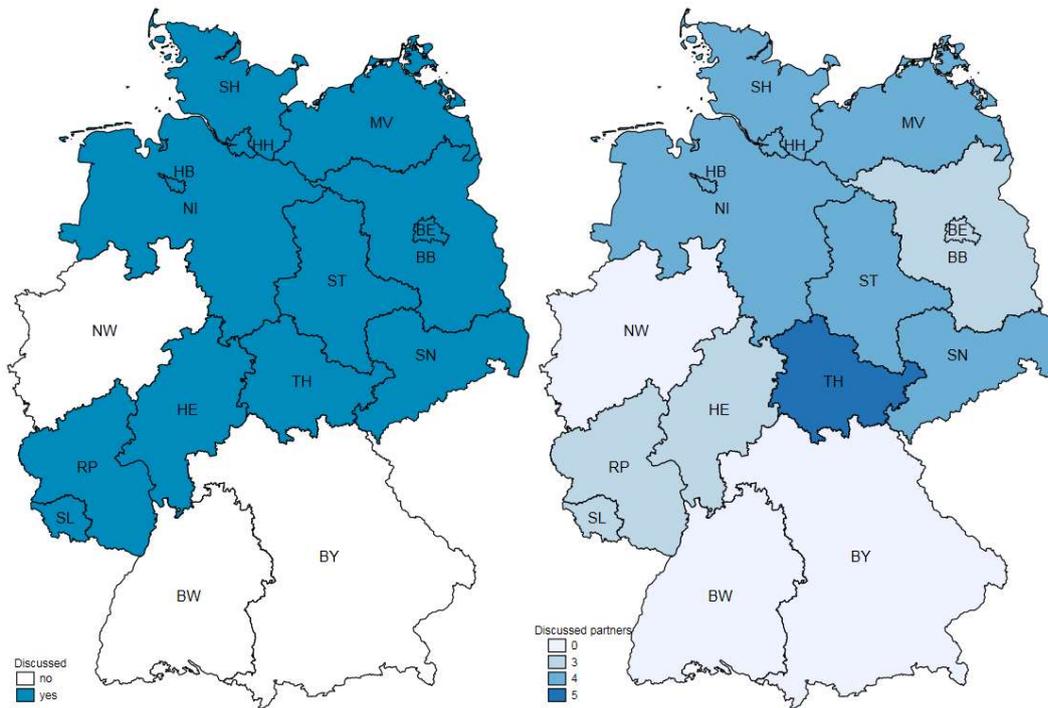
Notes: State abbreviations are as follows - BW: Baden-Württemberg, BY: Bavaria, BE: Berlin, BB: Brandenburg, HB: Bremen, HH: Hamburg, HE: Hesse, NI: Lower Saxony, MV: Mecklenburg-Western Pomerania, NW: North Rhine-Westphalia, RP: Rhineland-Palatinate, SL: Saarland, SN: Saxony, ST: Saxony-Anhalt, SH: Schleswig-Holstein, TH: Thuringia.

We make use of this fine-grained data on state-specific merger expectations in our empirical analysis. Specifically, these data help to inform us about survey respondents' expectations about the possible composition of a new state and the likely party distributions in its new parliament. This is important for assessing to which extent a respondent could expect political majorities to be more or less aligned with her own preferences (see 3.3 for details).

To date, none of these debates have resulted in a realized amalgamation of German federal states. In fact, the only actual popular vote since the German reunification took place on a merger between the states Berlin and Brandenburg in 1996. After the state parliaments had agreed on the contract, the project was accepted in a direct vote in Berlin but failed in Brandenburg, where neither a majority in favor of nor the minimum threshold for 25% yes votes of the electorate were achieved.[6] Since then, no other federal restructuring idea has achieved the stage of parliamentary votes or even referenda. Given the demographic and economic trends described, this strong status quo bias may pose a puzzle.

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[6] For a reference, see http://www.wahlen.brandenburg.de/sixcms/detail.php/lbm1.c.312938.de.

With this background, we explore the trade-offs involved in the merger support from the voters' perspective, which may help in better understanding the origin of federal reform resistance.

3   Survey and experimental set-up

3.1   Survey details

Our survey experiment is implemented via the German Internet Panel (GIP), which is a bimonthly survey having been conducted since September 2012.[7] A novel feature of the survey is the inclusion of online and offline population by providing individuals without computer or internet access with the respective equipment to participate in the survey. Therefore, the GIP achieves national representativeness from its stratified sampling method on both the online and offline population (Blom et al., 2015).[8] In general, the GIP has a focus on reform policies and is an interdisciplinary tool for scientists from various fields such as sociology, political science, and economics.[9]

We surveyed the preferences of German citizens regarding a merger of their home state in wave 14 of the GIP in November 2014. We could take advantage of a panel refreshment in wave 13, increasing the panel members above 4,000. 83.4% of all 4240 panel members participated in wave 14, which is a remarkable turnout compared to other panel-based surveys. In this wave, we surveyed citizens' preferences on various aspects of German fiscal policy such as the attitude towards the newly introduced debt brake, revenue autonomy, or the fiscal equalization system (Berger et al., 2017), as well as preferences with respect to tax evasion or income inequality. Like each wave of the GIP, wave 14 also included standard questions on key socioeconomic factors such as party preferences, education, age, country of origin, state of residence, etc. We also merged information from wave 13 of the GIP from September 2014 for the questions on the citizen's own perceived political competence (internal efficacy) and politicians' responsiveness (external efficacy).[10]

Our focus of interest lies in the fundamental trade-off implied in any centralization decision identified since the decentralization theorem (Oates, 1972) and the coalition formation literature, e.g. Alesina & Spolaore (1997), or Bolton & Roland (1997). On the one hand, the formation of a larger state may realize economies of scale and reduce the fiscal burden for the individual taxpayer. On the other hand,

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[7] For a detailed description of the survey methodology, see Blom et al. (2015).
[8] Specifically, the GIP is based on a three-stage probabilistic stratification which is based on i) primary sampling units stratified by state, governmental district and urbanity, ii) random route listing of households and iii) sample reduction within clusters at random start (Blom et al., 2015).
[9] For an overview, see http://reforms.uni-mannheim.de/internet_panel/home/.
[10] See Table A.1 of the Appendix for a complete overview of all variables in use.

a larger jurisdiction increases the risk that state policies become more detached from individual preferences and citizens' control. Our survey allows us to identify and quantify this fundamental trade-off in the individual voter's calculus. To assess the impact of cost savings on merger acceptance, we have designed a randomized survey experiment which varies information on the expected savings. Preference costs are measured along two dimensions: first, we measure voter representation according to individual partisan preferences of voters by comparing a respondent's match to the parties of his state government with the match to the hypothetical new state government after a merger. Second, we measure individual respondents' political efficacy, i.e. both their self-assessment of their own political competence, and the perceived responsiveness of politicians. In the following, we describe in detail how these basic approaches are made operational in the empirical analysis.

3.2   Cost saving expectations from a merger

The actual costs savings from a jurisdictional amalgamation are hard to quantify even ex post (for a survey see: Blesse & Rösel, 2017). Ex ante, voters can hardly predict the economies of scale and who exactly will benefit from a possible merger rent (e.g., bureaucrats versus taxpayers, different voter groups). Therefore, even actual cases of state amalgamations (which have not occurred in the history of the Federal Republic of Germany) or referendum data would hardly be informative on how cost saving expectations impact an individual voter's merger support. Our survey experiment addresses this problem by controlling savings expectations through randomized announcements of saving potentials.

To identify the impact of cost savings on merger support, we designed an experimental setting that varies the cost savings to be expected. Variants comprise 50, 100, 150 or 200 euros per capita of annual savings through lower administration costs from state mergers and a control group with no further information. These variants are allocated by a random draw to all surveyed individuals.

The precise wording is as follows:

"*If neighboring federal states were merging, administrative costs could be saved. Would you vote in favor of a fusion of your state of residence with a neighboring state ...*

• *...?"* (control group)

• *... if as a result you could personally save dues amounting to 50 euros per year?"*

• *... if as a result you could personally save dues amounting to 100 euros per year?"*

• *... if as a result you could personally save dues amounting to 150 euros per year?"*

• *… if as a result you could personally save dues amounting to 200 euros per year?"*[11]

Respondents could answer with "*Yes*", "*No*" or "*I do not know*", respectively.

These randomized treatments elicit a respondent's willingness to accept a price for his consent to a larger state. The framing "you … personally" tries to reduce complexity that results from the uncertainty of whether the individual would actually benefit from a possible merger rent.

3.3 Preference costs of a merger

Our survey data allow us to construct indicators for both dimensions of preference costs, which are possible fears about a worse party alignment and a loss of political control in a post-merger state.

Party alignment

Unless neighboring states are highly homogenous, any merger project changes the political majorities of the state parliament and government. An individual that – as a result of a merger – is confronted with a government less aligned with his party preferences will suffer from politics less suited to his or her preferences (but will benefit from politics more suited to his or her preferences, accordingly). As shown above, German states have substantial political leeway in policy fields like education or internal security. Exactly on these fields, German parties tend to have different programmatic positions so that preference costs (or benefits) can be substantial.

Our data allow us to identify a respondent's political alignment with the incumbent state government. In addition, we can simulate the expected changes of an individual's political representation from hypothetical state consolidations. We measure the individual party preference by the respondent's current voting intention in a national election.[12] All state parliament information is taken from election.de. We identify a respondent's home state based on his or her declared main residence.

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[11] Original German wording: "Wenn sich benachbarte Bundesländer zu einem Bundesland zusammenschließen würden, könnten Verwaltungskosten gespart werden. Würden Sie für einen solchen Zusammenschluss des Bundeslandes, in dem Sie Ihren Hauptwohnsitz haben, mit einem benachbarten Bundesland stimmen, wenn Sie persönlich dadurch Abgaben in Höhe von -/50/100/150/200 im Jahr sparen könnten?"

[12] Our survey data does not comprise state-level party preferences of respondents. Thus, we use federal-level party preferences as a proxy. While there may be some dispute as to what extent voters preferences for state-level and federal elections are correlated (e.g. Rodden & Wibbels, 2011), own calculations based on data from Asatryan et al. (2017) suggest a strong correlation of party preferences for state-level and federal-level elections on the municipal level in the period of 2002 to 2014 in Germany. Related individual vote shares of the CDU/CSU, SPD, Grüne, Linke and FDP have correlation coefficients of about 0.77, 0.67, 0.76, 0.88 and 0.48. Moreover, polls for state elections predict the polls for federal elections well in Germany and federal parliament voting and state

Our various measures of alignment differ with respect to their sophistication and the underlying assumptions on the possible merger constellation. Our first set of indicators is static and only considers the alignment of an individual voter with the government of his home state's political orientation. We use the following four variants:

- Alignment with government parties (*AGP*): this is a dummy variable that indicates a respondent who, in a national election, would currently vote for one of the parties that are part of his home state's incumbent government coalition.

- Alignment with prime minister party (*APM*): this is a dummy variable that indicates a respondent who, in a national election, would currently vote for the party of his home state's incumbent prime minister.

- *Vote share*: this is a continuous variable that measures the respondent's preferred party's vote share in the last state election.

- *Seat share*: this is a continuous variable that measures the respondent's preferred party's seat share in the state parliament.

The theoretical prediction is that these proxies for political alignment should have a negative impact on merger support. If a voter feels already well aligned to his state government, he or she will not (actively) support an amalgamation with other states that could change the political equilibrium.

Our set of more refined indicators is forward looking and proxies the counterfactual political situation in the new post-merger state. These indicators inform us about the change in the party seat shares for the preferred party which would arithmetically result from the merger. In the construction, we follow concepts from the literature on endogenous mergers (e.g. Sørensen, 2006). The same as the first set of indicators, we identify the party preference based on the current voting intention. We then calculate the difference of seat shares of the hypothetical post-merger state to the current political representation for respondent *i*'s preferred party *p* in his or her home state *s* as follows:

$$\Delta Seat_{i,p,s}^{merger} = \sum_{t=1}^{m} w_t * seat_{i,p,t} - seat_{i,p,s} \qquad (2)$$

The change in political representation through mergers, $\Delta Seat_{i,p,s}^{merger}$, is calculated as the difference of a weighted average of seat shares of the individual *i*'s preferred political party *p* in the discussed potential merger partner states *t* (*t* = 1, ..., *m*) and this party's representation (seat share) in *i*'s home state *s*.

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level voting appear to affect one another (Frei et al., forthcoming). While political parties in German states have own party and campaign programs, they are also important for shaping national party manifestos (Bäck et al., 2016).

Note that our survey question does not indicate the specific merger combination. Accordingly, our forward-looking measure of changes in voter representation uses a (weighted) average value of seat shares among discussed mergers but does not rely on specific coalitions of the respondent's home state *s* with a specific other state. Instead, the question asks about the merger of 'neighboring states' so that the respondent has to form expectations about the likely states involved in a fusion. We consider the following four variants to cover different assumptions on expectation formation:

- Change of seat share from all discussed mergers (*ΔSeatD)*: here we consider the consolidation of a respondent's home state *s* with all its relevant coalition partners *t* discussed in the media in year 2014 (see Table 3). For this measure it does not matter whether a potential merger partner is a directly adjacent neighboring state. For instance, in Thuringia's case, there were 5 discussed merger partners in total. Hence, we take an equally weighted average of seat shares of party *p*, which was stated to be the preferred political party of respondent *i* in all of these 5 states.

- Change of seat share from discussed mergers, weighted *(ΔSeatDW)*: similarly calculated as *ΔSeatD* above but we apply population-weights to calculate the weighted average of post-merger seat shares. We do this in order to allocate larger weight to larger merger partners on average.

- Change of seat share from mergers with neighbors (*ΔSeatN)*: similarly calculated as *ΔSeatD* above but here we consider only directly adjacent neighbors as possible merger partners. Hence, we now consider, for instance, only three adjacent states as possible merger partners for Thuringia.

- Change of seat share from discussed mergers with neighbors, weighted (*ΔSeatNW)*: Similarly calculated as *ΔSeatN* above but here we consider only directly adjacent neighbors as possible merger partners. Population-weights are applied to calculate post-merger seat shares.

Positive (negative) values for these indicators represent individual gains (losses) in the respondent's political representation in line with her party preferences through hypothetical mergers. The theoretical prediction is that larger values should be associated with a stronger merger support.[13]

These more refined proxies describe the calculus of a well-informed voter while the simpler ones describe heuristics in need of little information. The first set of measures merely needs own-state information whereas the continuous measures require a knowledge of the political situation in other

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[13] Note that values of zero do not only occur in case of identical party seat shares for pre- and post-merger states. In addition, both 'discussed merger' indicator variants produce zeros for states where a fusion with another states has never been publicly discussed (i.e. Bavaria, Baden-Württemberg, and North Rhine-Westphalia, see section 2). Moreover, zeros are also set if the respondent prefers a party in the national election that has no seats in either pre- or post-merger state assembly so that an amalgamation would not alleviate the complete individual lack of representation.

states as well as insights on realistic merger constellations. We are agnostic about the 'right' construction and, in our empirical design, test all variants.

Political efficacy

We exploit GIP questions that cover both the internal and external dimension of perceived political voter control. The questions closely follow the typical itemization in the political efficacy literature (Niemi et al., 1991). For internal political efficacy, i.e. the self-assessment of the citizen's own political competence, we use the following two questions (all questions with responses on a five-point-scale from "do not agree at all" (1) to "fully agree" (5)):

Understand: "*I am well able to understand and assess important political questions.*"[14]

Participate: "*I am confident that I am able to participate actively in a conversation on political questions.*"[15]

For external political efficacy, i.e. the assessment of politicians' responsiveness, we exploit two question:

Close: "*The politicians try to get in closer contact with the population.*"[16]

Care: "*The politicians care about what simple people think.*"[17]

We calculate all four variables *understand*, *participate*, *close,* and *care* as dummy variables taking the value of 1 if a respondent answers "agree somewhat", "pretty much," or "fully" (3, 4, or 5 on the five point-scale), and 0 otherwise. Note that these judgments refer to voter capability (internal efficacy) and the respondent's image of German politicians (external efficacy) in general, given the current federal structure.

We study their direct impact on merger preference and the respective interactions with the (randomized) announcements of hypothetical scale effects from a merger. The expectation is that voters with a generally pessimistic view of their political participation and impact should be less concerned about a loss of control in larger states. With a general frustration about a detached political process even under the status quo, those respondents should focus more on cost savings than on

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[14] Original German wording: "Wichtige politische Fragen kann ich gut verstehen und einschätzen."
[15] Original German wording: "Ich traue mir zu, mich an einem Gespräch über politische Fragen aktiv zu beteiligen."
[16] Original German wording: "Die Politiker bemühen sich um einen engen Kontakt zur Bevölkerung."
[17] Original German wording: "Die Politiker kümmern sich darum, was einfache Leute denken."

preference costs. Conversely, respondents with a high political efficacy have more to lose from centralization and a threatening loss of control. At the same time, those respondents might be more involved in current merger debates with stronger opinions and more information so that the experimental cost savings treatment are less effective in guiding expectation. Therefore, a high internal and external efficacy should dampen the support for a larger state and weaken the impact of our randomized cost savings accordingly.[18] We can exclude that our efficacy indicators are influenced by our randomized treatments and a possible activation of merger concerns since the efficacy questions were asked in a GIP wave about two months prior to the wave that included the state merger question.

3.4   Descriptive findings

The idea to consolidate German states seems to be popular among German citizens (Figure 2). Across all states and experimental treatments, 52 per cent of respondents are in favor of the merger of the state of residence with a neighboring state, whereas only 31 per cent are opposed (with the remaining share of 17 per cent having no opinion). Figure 3 illustrates the spatial allocation of merger support across German states. A relative (and frequently absolute) majority in favor of the own state's merger exists in almost all federal states, with Mecklenburg-Western Pomerania and Hamburg being the only exceptions. Figure A.2 of the Appendix shows the distribution of all answer categories across individual federal states. Resistance appears stronger among some of those states for which an amalgamation has actually already been discussed (see section 2). This indicates that a serious debate may activate resistance - an aspect we return to in our testing.

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[18] For the case of inter-municipal cooperation the German state of Hesse, Bergholz and Bischoff (2019) analyze survey data that indicate that support for cooperation is weaker for respondents that have high trust in their local government, a finding that supports our expectation.

Figure 2: Average merger support
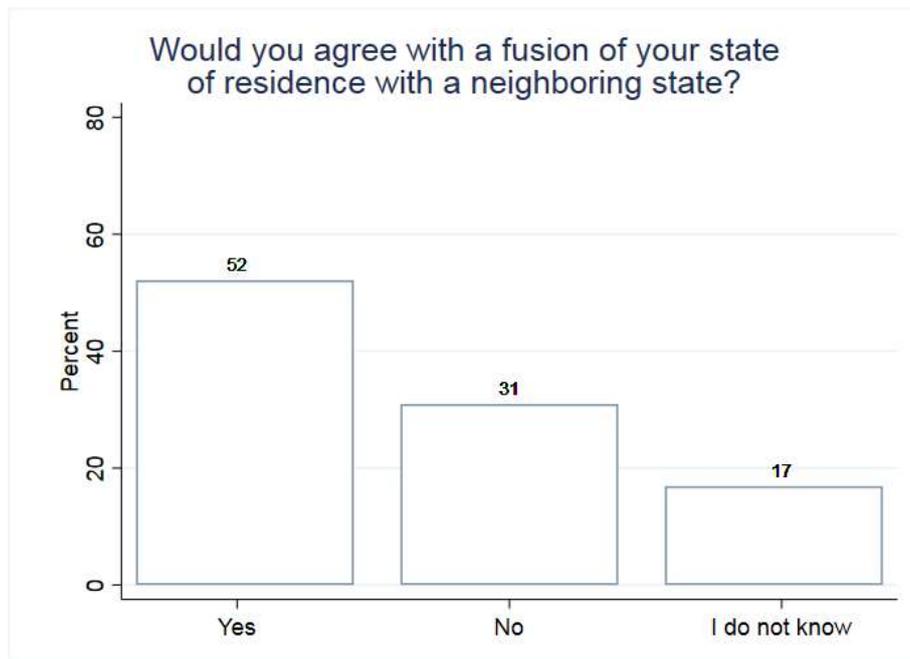
Notes: The figure shows the frequency of responses by answer category to the survey question "Would you agree with a fusion of your state of residence with a neighboring state?" from GIP wave 14.

Figure 3: Merger support across state
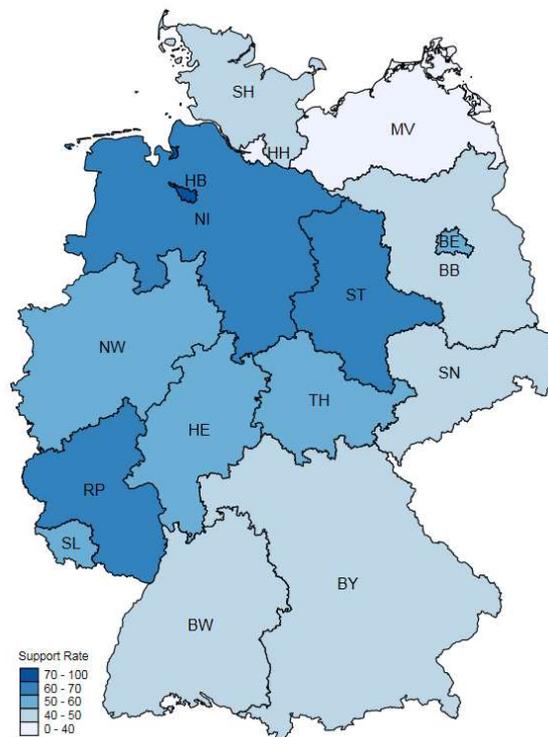
Notes: The figure shows the share of "yes" responses to the survey question "Would you agree with a fusion of your state of residence with a neighboring state?" from GIP wave 14 (question includes also "no" and "I do not know" response categories). State abbreviations are as follows. BW: Baden-Württemberg, BY: Bavaria, BE: Berlin, BB: Brandenburg, HB: Bremen, HH: Hamburg, HE: Hesse, NI: Lower Saxony, MV: Mecklenburg-Western Pomerania, NW: North Rhine-Westphalia, RP: Rhineland-Palatinate, SL: Saarland, SN: Saxony, ST: Saxony-Anhalt, SH: Schleswig-Holstein, TH: Thuringia.

In the next step, we consider merger support across our experimental treatments (Table 4). It is evident that our treatment has the expected impact and an increase in the activated expectation on the personal financial return from merger cost savings results on average in higher approval rates of voters. Whereas merely 45.8 per cent approve of state consolidations in the control group (without any activation of saving expectations), approval rates increase to 56 per cent with expected scale economies of 200 euros per year and capita. After a continuous increase from the control group, the maximum support is reached in the 150 euros treatment. A chi-squared test confirms that group differences are statistically significant at a level of 1 per cent. Hence, we can establish that consolidation preferences are co-determined by the expected financial pay-off for the voters.

Table 4: Merger support across treatments

	Control	Cost saving treatments				Total
		50 euros	100 euros	150 euros	200 euros	
			in %			
Yes	45.8	49.4	53.0	56.5	56.0	52.1
No	37.0	35.1	30.0	26.2	26.5	31.0
I do not know	17.3	15.4	17.0	17.3	17.6	16.9
Total	100.0	100.0	100.0	100.0	100.0	100.0
chi2			34.5			
p value			0.000			
N	690	697	695	699	692	3473

Notes: The table reports frequency values of responses to the survey question "Would you agree with a fusion of your state of residence with a neighboring state?" from GIP wave 14 as our main outcome across treatment groups.

Table A.1 of the Appendix gives an overview about summary statistics of various individual characteristics across treatment groups. Note that the identifying assumption for the validity of our randomization procedure is that these individual characteristics should not be significantly correlated with treatment groups. Indeed, we find that the vast majority of individual respondent characteristics are balanced across comparison groups (see the balancing test in Table A.2 of the Appendix).[19]

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[19] Of 22 covariates three ('being married', 'no income declared' or 'other training') are significantly different across our experimental groups at the 10 % or 5% level, respectively. This is well in range of expected false positives which one would observe at random chance.

4   Empirical design and results

4.1   Estimation model and identification

In the following, we employ a linear probability model (LPM) to estimate the determinants of merger preferences. We use a binary dependent variable to measure merger preferences, with values of 1 indicating support and 0 rejection. Our baseline omits undecided opinions, i.e. the 'don't know' category, as our interest is on voter support for mergers as compared to resistance to state consolidation. We include the undecided category in our robustness checks (see section 4.6). LPM has several advantages in the present context compared to other choice models such as probit or logit. Importantly, it allows the direct interpretation of the treatment coefficients as marginal effects. Moreover, LPM allows us an easier interpretation of interaction terms of our economies of scale treatment indicators with measures of political representation as compared to alternative non-linear models. Moreover, OLS gives us consistent estimates of marginal treatment effects in our randomized survey experiment. We use robust White-Huber standard errors to account for heteroscedasticity.

Our first interest is the analysis of the direct causal impact of the experimental treatments which we study through the following estimation model:

$$support_i = \beta \, savings_i^c + \Theta X_i + \alpha_s + \varepsilon_i \qquad (2)$$

with $support_i$ the dummy indicating the respondent's i support (=1) or rejection (=0). α_s is a set of state fixed effects and ε_i is the individual error term. We use state fixed effects to control for all state-level variation which may confound the preferences of individual respondents' to support a merger of his or her home state, e.g. different GDP per capita levels or different levels of transfer dependence.[20] Our main explanatory variables of interest are $savings_i^c$ which represent a set of dummy variables indicating our four treatments, i.e. individual i's savings expectations c (50, 100, 150, 200 euros per capita) compared to a control group in which no further information is given. We also work with a variant that collapses the four treatments dummies for higher savings (150 or 200 euros) or lower savings (50 or 100 euros) or any savings (50, 100, 150 or 200 euros). The randomization of saving opportunities allows a causal interpretation of our estimates for the cost saving expectations.

Although the randomization of saving announcements gives us consistent estimates, we can improve efficiency by accounting for a battery of individual background characteristics X_i from our GIP survey. These include age categories, the highest qualification levels for both schooling and job training, marital status, household size, occupation, party preferences, gender, being employed, income

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[20] We drop state fixed effects when considering the influence of state-level variables such as the salience of merger discussions in a state proxied by the number of discussed merger partners in the media (see section 4.5).

categories, as well as information about whether a person has a left party ideology, is not allowed to vote, or decided not to vote at the last federal election (see Table A1 for descriptive statistics).

As our main interest is the trade-off between merger cost savings and preference costs, we turn to preference costs in the next step. In a first step, we estimate a model that adds our preference indicator $pi_{i,s}$ of person i in state s.:

$$support_i = \beta \, savings_i^c + \gamma \, pi_{i,s} + \Theta X_i + \alpha_s + \varepsilon_i \qquad (3)$$

For $pi_{i,s}$ we employ both the political alignment and political efficacy indicators. For alignment, as described above (section 3.3), we employ several variants that include simple indicators for a conformity of the respondent's political orientation with the state government (static perspective) and more refined measures that indicate the expected seat share change for the preferred party as a consequence of the amalgamation (forward-looking perspective). For the efficacy dimension, we make use of the questions on the self-assessment of political competency and the view on politicians' responsiveness (3.3). β/γ is our key measure of interest and indicates how respondents evaluate the possible trade-off between cost savings and possible higher preference costs as a result of a merger.

Finally, we move on to a further dimension of this trade-off and estimate the model augmented by the interaction between both:

$$support_i = \beta \, savings_i^c + \gamma \, pi_{i,s} + \omega \, savings_i^c * pi_{i,s} + \Theta X_i + \alpha_s + \varepsilon_i \qquad (4)$$

The interaction of expected saving levels with the preference proxies allows us to judge how the positive impact of savings on merger support changes depending on the respective level of preference costs. The expectation is that the positive average impact of high savings on voter support should weaken in the presence of high costs of political misalignment or with low elicited political efficacy.

4.2   Cost savings expectation and merger support

Tables 5 and 6 report the results for the estimation equation (2) and depict the direct causal effects of our experimental treatments that activate different cost saving expectations. In Table 5 column (1) shows the direct results of the saving treatments on our binary support outcome without any additional controls, while subsequent models also include individual background variables in column (2), state fixed effects in column (3), as well as a combination of individual level variables and state fixed effects in column (4), which ultimately represents our preferred empirical specification.

The differences in merger support across treatments in Table 5 are highly significant in joint F-tests for all models. Regardless of the specification, expected cost savings of at least 100 euros per year and

person significantly increase individual voter support for state consolidations. A savings perspective of 50 euro does not, however, make up for a significant difference to the control group. Significance reaches one per cent throughout all specifications for cost savings of at least 100 euros. For specification (4), savings of 100 euro per capita and year increase the probability that a respondent supports a merger by 8 percentage points. Effect size increases with savings of 150 and 200 euro and reaches 11 percentage points. Table 6 presents results for the combined treatment classes of either any savings (i.e. from 50 to 200 euros) or both large (150 or 200 euros) and low savings (50 and 100 euros). The table includes two variants of control variables to limit space: a specification that only includes state fixed effects, and a second one that adds individual controls. The results emphasize that treatment effects are less robust for low savings and that both the robustness and magnitude of support increases further if savings go above the 100 euros per capita and year benchmark.

Table 5: Merger support: impact of cost saving treatments, separate treatments

	(1)	(2)	(3)	(4)
50 euros	0.030	-0.004	0.032	-0.001
	(0.029)	(0.031)	(0.029)	(0.031)
100 euros	0.090***	0.083***	0.091***	0.080***
	(0.029)	(0.031)	(0.028)	(0.030)
150 euros	0.129***	0.111***	0.130***	0.112***
	(0.028)	(0.031)	(0.028)	(0.030)
200 euros	0.129***	0.115***	0.129***	0.112***
	(0.029)	(0.031)	(0.028)	(0.030)
Individual controls	No	Yes	No	Yes
State-fixed effects	No	No	Yes	Yes
N	2883	2476	2883	2476

Notes: The table presents the effects of the randomized treatment interventions on merger support. This is estimated by OLS regressions of preferences for merger support on treatment dummies. Merger support is measured as a dummy variable equaling 1 for "Yes" answers to the question "Would you agree with a fusion of your state of residence with a neighboring state?" and 0 for "No" answers. "I do not know" answers are omitted. Robust standard errors are reported in parentheses. Significance levels: * $p<0.10$, ** $p<0.05$, *** $p<0.01$.

Table 6: Merger support: impact of cost saving treatments, treatments combined

	(1)	(2)	(3)	(4)
Any savings (50-200)	0.095***	0.076***		
	(0.023)	(0.024)		
Small savings (50-100)			0.061**	0.039
			(0.025)	(0.027)
Large savings (150-200)			0.130***	0.112***
			(0.025)	(0.026)
Individual controls	No	Yes	No	Yes
State-fixed effects	Yes	Yes	Yes	Yes
N	2883	2476	2883	2476

Notes: The table presents the effects of the randomized treatment interventions on merger support. This is estimated by OLS regressions of preferences for merger support on treatment dummies. Merger support is measured as a dummy variable equaling 1 for "Yes" answers to the question "Would you agree with a fusion of your state of residence with a neighboring state?" and 0 for "No" answers. "I do not know" answers are omitted. Robust standard errors are reported in parentheses. Significance levels: * $p<0.10$, ** $p<0.05$, *** $p<0.01$.

Controlling for individual level control variables improves the precision of our estimates. Table A.3 of the Appendix shows the anatomy of individual voter support for state mergers, including the effects of all individual level control variables. Interestingly, we find that respondent age is the only variable that explains support aside from our treatment variation with respect to expected scale economies. Both the older (above 50 years) and middle-agers (30-49 years) have a higher likelihood to support state mergers compared to younger respondents (being the omitted age category). Two of the income class dummies are marginally significant. All other individual background characteristics are not significant predictors of merger support at conventional levels.

4.3   Preference costs and merger support

Partisan alignment

Tables 7 and 8 report results for our estimation of equation (3) with its focus on the direct effect of political (mis)alignment on the support for state fusions. To limit the number of specifications, we work with two variants for controls: a specification that only includes state fixed effects, and a second one that adds individual controls. Table 7 employs the static perspective with the assumption that voters merely look at their partisan alignment with their current state. Table 8 makes use of forward-looking indicators that quantify the changes in seat share of the individual's preferred party that would occur following the merger (with different assumptions on merger expectations, see section 2.2).

The signs of all alignment proxies in the static perspective (Table 7) are in line with our expectations. Respondents in a state where the party preferred is in power or has a larger vote and seat share are more likely to oppose a merger. Since an amalgamation of states might change the political equilibrium, this perspective is more attractive for voters who do not support their current state

government. Effects are robustly significant only for continuous indicators (vote and seat share), not for dummies (alignment with government party, *AGP*=1, or prime minister's party, *APM*=1).

The more refined approach quantifying changes in voter representation through state mergers in Table 8 largely leads to the expected signs as well. An increase of the preferred party (as a result of a merger) is associated with a more favorable view of the new state. However, estimates are less precise.

From these results we are able to quantify the trade-off in a merger decision between the benefit from economies of scale and the decrease in voter representation. As expected, our cost savings treatment works in the opposite direction (i.e. high savings increase support) to the alignment with the current state parliament (close alignment decreases support). Based on the results of Table 7, we can now quantify the trade-off (as conceptually described in section 4.1). A simple alignment with a current state government party (AGP=1) or prime minister (APM=1) as such would not suffice to compensate for the cost saving benefit from a merger of 100 euros per capita or more. For the seat and vote shares, we can be more precise and calculate the critical shares of the preferred party in the old state, which would merely neutralize the cost advantage from a larger jurisdiction. For the 200 euros treatment, this critical share lies in a range between 44 and 50%.[21] This implies that only a very strong position of the preferred party in the pre-merger state would prevent a respondent from opting for the merger and its financial return. The large weight to costs savings relative to alignment losses is confirmed for the forward looking measures (Table 8). Already for the 100 euros treatment the merger supporting effect is so large that only an unrealistically high misaligning effect of a merger (a lower seat share of the preferred party by at least 40 percentage points) would be required to make a respondent indifferent.

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[21] An example for column (5) of Table 7: We divide the coefficient for 200 euros (0.106) by the absolute size of the coefficient for vote share (which is 0.0024 for vote share in %).

Table 7: Merger support: impact of political alignment, static perspective

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Cost savings from merger							
50 euros	-0.002	-0.003	-0.002	-0.004	-0.000	-0.002	-0.000	-0.002
	(0.032)	(0.032)	(0.032)	(0.032)	(0.032)	(0.032)	(0.032)	(0.032)
100 euros	0.083***	0.086***	0.082**	0.084***	0.085***	0.088***	0.085***	0.088***
	(0.032)	(0.032)	(0.032)	(0.032)	(0.032)	(0.032)	(0.032)	(0.032)
150 euros	0.114***	0.117***	0.113***	0.116***	0.113***	0.116***	0.113***	0.116***
	(0.032)	(0.032)	(0.032)	(0.032)	(0.032)	(0.032)	(0.032)	(0.032)
200 euros	0.107***	0.106***	0.106***	0.105***	0.106***	0.106***	0.106***	0.105***
	(0.032)	(0.032)	(0.032)	(0.032)	(0.032)	(0.032)	(0.032)	(0.032)
	Alignment losses from merger							
AGP	-0.029	-0.038*						
	(0.020)	(0.022)						
APM			-0.013	-0.014				
			(0.023)	(0.023)				
Vote share					-0.240***	-0.254***		
					(0.071)	(0.071)		
Seat share							-0.213***	-0.226***
							(0.061)	(0.062)
Individual controls	No	Yes	No	Yes	No	Yes	No	Yes
State-fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	2260	2250	2260	2250	2260	2250	2260	2250

Notes: The table presents the effects of the randomized treatment interventions on merger support and the influence of different measures of political alignment as control variables. This is estimated by OLS regressions of preferences for merger support on treatment dummies. Merger support is measured as a dummy variable equaling 1 for "Yes" answers to the question "Would you agree with a fusion of your state of residence with a neighboring state?" and 0 for "No" answers. "I do not know" answers are omitted. Moreover, the table shows the effect of an individual respondent's alignment with incumbent government parties in his home state (AGP) in Column (1)-(2), an individual respondent's alignment with the party of the incumbent prime minister in his home state (APM) in Column (3)-(4), the vote share of the preferred party of an individual respondent in his home state in Column (5)-(6) and the seat share of the preferred party of an individual respondent in his home state in Column (7)-(8) on merger support. Robust standard errors are reported in parentheses. Significance levels: * p<0.10, ** p<0.05, *** p<0.01.

Table 8: Merger support: impact of political alignment, forward looking

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Cost savings from merger							
50 euros	-0.003	-0.004	-0.002	-0.003	-0.003	-0.004	-0.002	-0.003
	(0.032)	(0.032)	(0.032)	(0.032)	(0.032)	(0.032)	(0.032)	(0.032)
100 euros	0.082**	0.083***	0.084***	0.086***	0.081**	0.083***	0.083***	0.085***
	(0.032)	(0.032)	(0.032)	(0.032)	(0.032)	(0.032)	(0.032)	(0.032)
150 euros	0.112***	0.115***	0.113***	0.116***	0.112***	0.115***	0.113***	0.116***
	(0.032)	(0.032)	(0.032)	(0.032)	(0.032)	(0.032)	(0.032)	(0.032)
200 euros	0.105***	0.104***	0.108***	0.107***	0.105***	0.104***	0.107***	0.106***
	(0.032)	(0.032)	(0.032)	(0.032)	(0.032)	(0.032)	(0.032)	(0.032)
	Alignment gains from mergers							
ΔSeatD	0.074	-0.010						
	(0.177)	(0.176)						
ΔSeatDW			0.218*	0.208*				
			(0.115)	(0.115)				
ΔSeatN					0.042	-0.043		
					(0.189)	(0.188)		
ΔSeatNW							0.224*	0.209*
							(0.123)	(0.123)
Individual controls	No	Yes	No	Yes	No	Yes	No	Yes
State-fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	2260	2250	2260	2250	2260	2250	2260	2250

Notes: The table presents the effects of the randomized treatment interventions on merger support and the influence of different measures of political alignment as control variables. This is estimated by OLS regressions of preferences for merger support on treatment dummies. Merger support is measured as a dummy variable equaling 1 for "Yes" answers to the question "Would you agree with a fusion of your state of residence with a neighboring state?" and 0 for "No" answers. "I do not know" answers are omitted. Moreover, the table shows the effect of a hypothetical change of seat shares from all discussed mergers on the party representation of an individual respondent in his home state (ΔSeatD) in Column (1)-(2), the effect of the same measure but adjusted with population weights (ΔSeatDW) in Column (3)-(4), the effect of a hypothetical change of seat shares from discussed mergers with neighboring states on the party representation of an individual respondent in his home state (ΔSeatN) in Column (5)-(6) and the same measure but adjusted with population weights (ΔSeatNW) in Column (7)-(8) on merger support. Robust standard errors are reported in parentheses. Significance levels: * $p<0.10$, ** $p<0.05$, *** $p<0.01$.

Political efficacy

Our second set of preference indicators refers to respondents' confidence in their own political competence and politicians' responsiveness. The expectation is that a low confidence along both dimensions will increase the support for a state merger. Voters who are more positive about their own political participation with the current shape of states should be more skeptical about the further distant decision making with a larger state. The signs of the efficacy coefficients are mostly in line with this expectation (Table 9). However, neither for the internal (*understand/participate*) nor the external (*close/care*) dimension of efficacy can we detect direct effects at conventional significance levels.

Table 9: Merger support: impact of political efficacy

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Cost savings							
50 euros	0.030	-0.004	0.032	-0.001	0.032	-0.001	0.029	-0.003
	(0.029)	(0.031)	(0.029)	(0.031)	(0.029)	(0.031)	(0.029)	(0.031)
100 euros	0.090***	0.078**	0.091***	0.080***	0.089***	0.078**	0.089***	0.078**
	(0.029)	(0.030)	(0.029)	(0.030)	(0.029)	(0.030)	(0.029)	(0.030)
150 euros	0.126***	0.108***	0.128***	0.109***	0.126***	0.108***	0.126***	0.108***
	(0.028)	(0.031)	(0.028)	(0.031)	(0.028)	(0.031)	(0.028)	(0.031)
200 euros	0.128***	0.110***	0.129***	0.112***	0.129***	0.111***	0.128***	0.111***
	(0.028)	(0.030)	(0.028)	(0.030)	(0.028)	(0.030)	(0.028)	(0.030)
	Internal political efficacy (self-assessment)							
Understand	-0.014	-0.016						
	(0.024)	(0.028)						
Participate			0.004	0.016				
			(0.019)	(0.023)				
	External political efficacy (image of politicians)							
Close					-0.027	-0.025		
					(0.020)	(0.021)		
Care							-0.037	-0.020
							(0.024)	(0.026)
Individual controls	No	Yes	No	Yes	No	Yes	No	Yes
State-fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	2877	2470	2877	2470	2874	2468	2876	2469

Notes: The table presents the effects of the randomized treatment interventions on merger support and the influence of different measures of political efficacy as control variables. This is estimated by OLS regressions of preferences for merger support on treatment dummies. Merger support is measured as a dummy variable equaling 1 for "Yes" answers to the question "Would you agree with a fusion of your state of residence with a neighboring state?" and 0 for "No" answers. "I do not know" answers are omitted. Moreover, the table shows the effect of a dummy on understanding political questions in Column (1)-(2) and the effect of a dummy on participating in political questions in Column (3)-(4). Both dummies are measures of internal political efficacy. Column (5)-(6) include a dummy on perceived closeness of politicians to the population and Column (7)-(8) consider a binary indicator whether respondents think that politicians care for them. The latter two measures represent the concept of external political efficacy. Robust standard errors are reported in parentheses. Significance levels: * p<0.10, ** p<0.05, *** p<0.01.

4.4 Interaction analysis

Our third analytical step following model (4) allows for the possibility that our cost treatment effect as such is modified by different degrees of preference costs.

Partisan alignment

Table 10 reports the interaction analysis for our static measure of political alignment. Most interactions have the expected negative sign, namely a higher alignment with the state government under the jurisdictional status quo tends to weaken the appeal of high financial benefits from amalgamations. However, almost all interactions miss statistical significance. The picture is not different for the forward-looking measures of alignment (Table 11) where we limited the analysis to the population-weighted state counterfactuals. A higher partisan appeal of the expected new political majorities in a

post-merger state tends to strengthen the causal impact of the cost savings. But, again, interactions fail to be significant. There is thus no support for an indirect effect of alignment on merger support in addition to the direct effect established above.

Political efficacy

Estimates for the political efficacy proxies are in line with expectations (Table 12). Our cost savings treatments show larger effects for those respondents who have a low confidence in their control of the political process under the status quo. Coefficients for the internal dimension of political efficacy (understand and participate in politics) are estimated with high precision, but not for the external dimension.

The magnitude of the interaction effects is substantial: for the small savings treatment (50 to 100 euros per capita and year), the interaction matches the treatment's direct effect almost entirely. This implies that the merger-supporting effect of expected small cost savings is almost entirely absent for those respondents who have high confidence in their own capacity to understand and participate in political processes given the current federal structure.[22] While we thus cannot identify any direct effect of political efficacy on merger support, related voter perceptions clearly matter indirectly, as they modify the treatment effect of announcing saving potentials through state mergers in a significant manner.

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[22] Interestingly, the more efficacious respondents also have stronger opinions on the merger question as they answer "I don't know" significantly less often (results not reported). This could be an indication of more information about the federal reform debate in Germany and, hence, explain the lower effectiveness of the survey treatment.

Table 10: Merger support: interacting cost savings and political alignment, static perspective

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Small savings (50-100)	0.069*	0.070*	0.060*	0.060*	0.052	0.048	0.049	0.046
	(0.036)	(0.036)	(0.032)	(0.032)	(0.051)	(0.051)	(0.049)	(0.049)
Large savings (150-200)	0.136***	0.135***	0.125***	0.125***	0.089*	0.085*	0.086*	0.083*
	(0.036)	(0.036)	(0.032)	(0.032)	(0.051)	(0.050)	(0.049)	(0.049)
AGP # small savings	-0.072	-0.072						
	(0.057)	(0.057)						
AGP # large savings	-0.065	-0.059						
	(0.056)	(0.056)						
AGP	0.027	0.016						
	(0.047)	(0.047)						
APM # small savings			-0.083	-0.080				
			(0.065)	(0.065)				
APM # large savings			-0.068	-0.061				
			(0.064)	(0.064)				
APM			0.050	0.045				
			(0.054)	(0.054)				
Vote share # small savings					-0.000	-0.000		
					(0.002)	(0.002)		
Vote share # large savings					0.001	0.001		
					(0.002)	(0.002)		
Vote share					-0.003	-0.003*		
					(0.002)	(0.002)		
Seat share # small savings							-0.025	-0.010
							(0.167)	(0.167)
Seat share # large savings							0.097	0.113
							(0.167)	(0.167)
Seat share							-0.240*	-0.265*
							(0.137)	(0.137)
Individual controls	No	Yes	No	Yes	No	Yes	No	Yes
State-fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	2260	2250	2260	2250	2260	2250	2260	2250

Notes: The table presents the effects of the randomized treatment interventions on merger support and their interaction with different measures of political alignment. This is estimated by OLS regressions of preferences for merger support on treatment dummies. Merger support is measured as a dummy variable equaling 1 for "Yes" answers to the question "Would you agree with a fusion of your state of residence with a neighboring state?" and 0 for "No" answers. "I do not know" answers are omitted. Moreover, the table shows the interaction of small and large saving expectations with: an individual respondent's alignment with incumbent government parties in his home state (AGP) in Column (1)-(2), an individual respondent's alignment with the party of the incumbent prime minister in his home state (APM) in Column (3)-(4), the vote share of the preferred party of an individual respondent in his home state in Column (5)-(6) and the seat share of the preferred party of an individual respondent in his home state in Column (7)-(8) on merger support. Significance levels: * $p<0.10$, ** $p<0.05$, *** $p<0.01$.

Table 11: Merger support: interacting cost savings and political alignment, forward-looking perspective

	(1)	(2)
Small savings (50-100)	0.069**	0.070**
	(0.034)	(0.034)
Large savings (150-200)	0.138***	0.141***
	(0.034)	(0.034)
ΔSeatDW	-0.027	
	(0.191)	
Small savings # ΔSeatDW	0.291	
	(0.211)	
Large savings # ΔSeatDW	0.285	
	(0.210)	
ΔSeatNW		-0.076
		(0.203)
Small savings # ΔSeatNW		0.348
		(0.224)
Large savings # ΔSeatNW		0.354
		(0.224)
Individual controls	Yes	Yes
State-fixed effects	Yes	Yes
N	2250	2250

Notes: The table presents the effects of the randomized treatment interventions on merger support and the interaction with different measures of political alignment. This is estimated by OLS regressions of preferences for merger support on treatment dummies. Merger support is measured as a dummy variable equaling 1 for "Yes" answers to the question "Would you agree with a fusion of your state of residence with a neighboring state?" and 0 for "No" answers. "I do not know" answers are omitted. Moreover, the table shows the interaction of small and large saving expectations with: a hypothetical change of seat shares from all discussed mergers on the party representation of an individual respondent in his home state (ΔSeatD) in Column (1), the same measure but adjusted with population weights (ΔSeatDW) in Column (2), a hypothetical change of seat shares from discussed mergers with neighboring states on the party representation of an individual respondent in his home state (ΔSeatN) in Column (3) and the same measure but adjusted with population weights (ΔSeatNW) in Column (4) on merger support. Robust standard errors are reported in parentheses. Significance levels: * p<0.10, ** p<0.05, *** p<0.01.

Table 12: Merger support: interacting cost savings with political efficacy

	(1)	(2)	(3)	(4)
	Internal political efficacy		External political efficacy	
Small savings (50-100)	0.179**	0.133***	0.058*	0.053*
	(0.072)	(0.051)	(0.032)	(0.029)
Large savings (150-200)	0.311***	0.231***	0.116***	0.130***
	(0.071)	(0.051)	(0.032)	(0.029)
Understand	0.147**			
	(0.065)			
Participate		0.135***		
		(0.050)		
Small savings # understand	-0.161**			
	(0.078)			
Large savings # understand	-0.233***			
	(0.076)			
Small savings # participate		-0.126**		
		(0.060)		
Large savings # participate		-0.164***		
		(0.059)		
Close			0.006	
			(0.046)	
Care				0.059
				(0.054)
Small savings # close			-0.061	
			(0.057)	
Large savings # close			-0.019	
			(0.057)	
Small savings # care				-0.086
				(0.069)
Large savings # care				-0.111*
				(0.067)
Individual controls	Yes	Yes	Yes	Yes
State-fixed effects	Yes	Yes	Yes	Yes
N	2470	2470	2468	2469

Notes: The table presents the effects of the randomized treatment interventions on merger support and the interaction with different measures of political efficacy. This is estimated by OLS regressions of preferences for merger support on treatment dummies. Merger support is measured as a dummy variable equaling 1 for "Yes" answers to the question "Would you agree with a fusion of your state of residence with a neighboring state?" and 0 for "No" answers. "I do not know" answers are omitted. Moreover, the table shows the interaction of small and large saving expectations with a dummy on the respondent's understanding of political questions in Column (1) and a dummy on participating in political questions in Column (2) as proxies for the concept of internal political efficacy. Column (3) and (4) depict interactions of small and large saving expectations with a dummy on perceived closeness of politicians to the population and a binary indicator whether respondents think that politicians care for them, respectively. The latter two measures represent the concept of external political efficacy. Robust standard errors are reported in parentheses. Significance levels: * $p<0.10$, ** $p<0.05$, *** $p<0.01$.

4.5   The role of salience of merger discussions for merger support

The descriptive analysis (3.4) suggests that citizens from states with particular salient merger debates may have more skeptical views. This might be the case if a more concrete discussion activates resistance and tends to reinforce the support for the status quo. We explore that possibility further.

We make use of salience proxies that relate both to the extensive and intensive margin (section 2.2, Figure 1): Our dummy *merger discussed* identifies whether there has been any significant merger discussion for the respondent's home state at all (i.e. the extensive margin). Our variable *number discussed* counts the number of potential partner states in all debated merger projects for a given federal state and, hence, is informative about the comprehensiveness of an amalgamation debate a state is involved in (i.e. the intensive margin).

We explore both a direct effect of salience (Table 13) and an indirect effect that modifies the impact of our cost treatments (Table 14). We do not find support for the former but for the latter. According to Table 13, respondents from states that are subject to an ongoing merger debate do not show a systematically different position as compared to those living in states without a serious discussion. However, our cost treatment has different effects for both groups (see Table 14). Generally, treatments are less effective for respondents from states which are candidates for a fusion (column (1) of Table 14) or for which the discussed new jurisdiction is more comprehensive (column (2) of Table 14). The interaction effect is particularly strong for the small savings treatments (50 to 100 euros per capita and year): for these small savings, a salient merger debate fully eliminates the positive treatment effect.

Table 13: Salience of merger discussion and merger support, direct effect

	(1)	(2)
50 euros	-0.003	-0.004
	(0.031)	(0.031)
100 euros	0.083***	0.083***
	(0.031)	(0.031)
150 euros	0.112***	0.111***
	(0.031)	(0.031)
200 euros	0.116***	0.115***
	(0.031)	(0.031)
Merger discussed	0.028	
	(0.020)	
Number discussed		-0.002
		(0.028)
Individual controls	Yes	Yes
State-fixed effects	No	No
N	2476	2476

Notes: The table presents the effects of the randomized treatment interventions on merger support and the influence of different salience measures of merger discussions. This is estimated by OLS regressions of preferences for merger support on treatment dummies. Merger support is measured as a dummy variable equaling 1 for "Yes" answers to the question "Would you agree with a fusion of your state of residence with a neighboring state?" and 0 for "No" answers. "I do not know" answers are omitted. Moreover, the table shows the effect of a dummy variable whether a merger was discussed in the home state of a respondent in Column (1) or the number of potential merger partners discussed in a respondent's home state in Column (2). Robust standard errors are reported in parentheses. Significance levels: * p<0.10, ** p<0.05, *** p<0.01.

Table 14: Salience of merger discussion and merger support, indirect effect

	(1)	(2)
Small savings (50-100)	0.104***	0.092**
	(0.038)	(0.036)
Large savings (150-200)	0.166***	0.144***
	(0.038)	(0.036)
Merger discussed	0.123***	
	(0.044)	
Small savings # merger discussed	-0.130**	
	(0.054)	
Large savings # merger discussed	-0.106**	
	(0.053)	
Number discussed		0.105*
		(0.062)
Any savings # number discussed		
Small savings # number discussed		-0.169**
		(0.076)
Large savings # number discussed		-0.098
		(0.076)
Individual controls	Yes	Yes
State-fixed effects	No	No
N	2476	2476

Notes: The table presents the effects of the randomized treatment interventions on merger support and the interaction with different salience measures of merger discussions. This is estimated by OLS regressions of preferences for merger support on treatment dummies. Merger support is measured as a dummy variable equaling 1 for "Yes" answers to the question "Would you agree with a fusion of your state of residence with a neighboring state?" and 0 for "No" answers. "I do not know" answers are omitted. Moreover, the table shows the interaction of small and large saving expectations with a dummy variable whether a merger was discussed in the home state of a respondent in Column (1) or the number of potential merger partners discussed in a respondent's home state in Column (2). Robust standard errors are reported in parentheses. Significance levels: * p<0.10, ** p<0.05, *** p<0.01.

4.6   Robustness checks

At last, we show that our results are robust to various alternative specifications. First, we use alternative specifications for our binary outcome of supporting mergers versus not supporting mergers. We both test a probit and a logit model instead of the linear probability model from our baseline estimation in Tables A.4 and A.5 of the Appendix, respectively. The effects are very similar to our baseline findings.

Second, we make use of the full sample by also including "I do not know" responses to the merger support question. Then, we code the merger support variable as follows: "no," "yes," and "I do not know" responses equal values of 1, 2, and 3, respectively, and run ordered probit models which account for the ordinal nature of our outcome variable of interest. Table A.6 and Table A.7 show the respective results. Results for positive effects of cost saving announcements are only robust for at least 150 euros per capita.

Third, we check whether cost saving announcements affect the share of undecided voters by running linear probability models using "I do not know" responses vs. all other answers as our dependent variable. Cost saving announcements do not seem to have an effect on the fraction of undecided voters with respect to merger support. Table A.8 of the Appendix shows the respective results.

Fourth and last, we test whether the effects of voter representation on merger support depends on the measurement of individual party preferences in our survey: instead of using a question of vote intention for the next federal election, we use information on the vote in the last election from wave 13 of the German Internet Panel. Effects of voter alignment with the parties in the respondent's home state on merger support are virtually identical (see Table A.9 of the Appendix).

5   Discussion and conclusions

Our findings confirm that voters' reflections on jurisdictional mergers indeed mirror the rationale of Oates' decentralization theorem. As predicted by this theory, respondents make a trade-off concerning economies of scale against preference costs. The appeal of larger jurisdictions increases with cost savings expectations as activated through our experimental treatment. Conversely, concerns about a deteriorating political alignment with the new state's government reduce the support for larger states. At first sight, the effect of the cost saving treatment appears to be large relative to the impact of alignment costs.

An important refinement of the general pattern in our results is that the shape of the trade-off is co-determined by respondents' self-assessment of his own political competence, i.e. his internal political

efficacy. The attraction of a financial return from amalgamations is low for those citizens who are optimistic about their own political involvement and influence under the current structure. Conversely, less self-confident voters appear to be less concerned about larger jurisdictions and, as a consequence, focus more on the single dimension of financial benefits. This indicates that smaller jurisdictions with their safeguards against a loss of voter control are less appealing for those who, already with the current state size, doubt that they have a say in the democratic process.

Regarding the external validity of our setting, an important caveat relates to the plausibility of cost saving magnitudes as implemented in our survey experiment. In the survey year 2014, German states spent on average about 4,300 and 2,450 euros per capita in total current spending or on outlays on administrative purposes (including all personal and operative costs), respectively (Statistisches Bundesamt, 2015). Our cost saving announcements referred specifically to savings in administrative spending. Hence, our randomized treatments (50, 100, 150 and 200 euros per capita and year) imply economies of scale from mergers of 2, 4, 6, or 8 % of administrative costs, respectively. Due to the absence of actually implemented state amalgamations, there is no existing evidence to put these magnitudes in perspective. For the much better researched municipal level it is contested whether and to what extent mergers can actually reduce costs. Some studies do actually find a reduction of administrative spending of up to 10% (Blom-Hansen et al., 2014). However, a considerable part of the literature also detects substantial cost increases in other parts of the budget, which partially or fully eliminates savings (Blesse & Rösel, 2017; Blom-Hansen et al., 2016)[23]. Blesse & Rösel (2017) and Rösel (2017) study district-level mergers and find that mergers of somewhat larger local government tiers do not necessarily decrease expenditures. Thus, overall, our experimental announcements of hypothetical cost savings range does correspond to the variety of findings in the municipal literature, but the higher savings treatments are very likely to be found in the upper range of what could be realistically expected.

Politicians who want to foster voter support for larger states would therefore have to communicate financial advantages that will be difficult to achieve in reality. If an actual debate reveals the uncertainties of cost savings, this debate would make voters indeed more skeptical about bright promises. This reasoning is consistent with our result that the saving treatments lose their impact for respondents that have been exposed to actual merger debates in their own states.

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[23] Also Allers & Geertsema (2016) and Reingewertz (2012) find significant negative effects of municipal mergers on administrative spending. However, most studies report insignificant effects (Hansen et al., 2014; Harjunen et al., 2019; Mughan, 2019; Rösel, 2017).

Overall, our findings seem to allow one suggestive answer to the initial "puzzle" of a highly persistent sub-national federal structure. Resistance to federal reforms might simply partially mirror voter preferences even though there may be, of course, other political reasons to abstain from mergers on side of the involved political actors (e.g. Hyytinen et al., 2014). Especially for those citizens who currently experience a functioning democratic process, the risk of increasing alienation between voters and elected politicians in larger states might not outbalance i.e. be worth the limited financial return that can realistically be expected.

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6 Appendix

Figure A.1: Average number of top-tier subnational jurisdictions in OECD countries
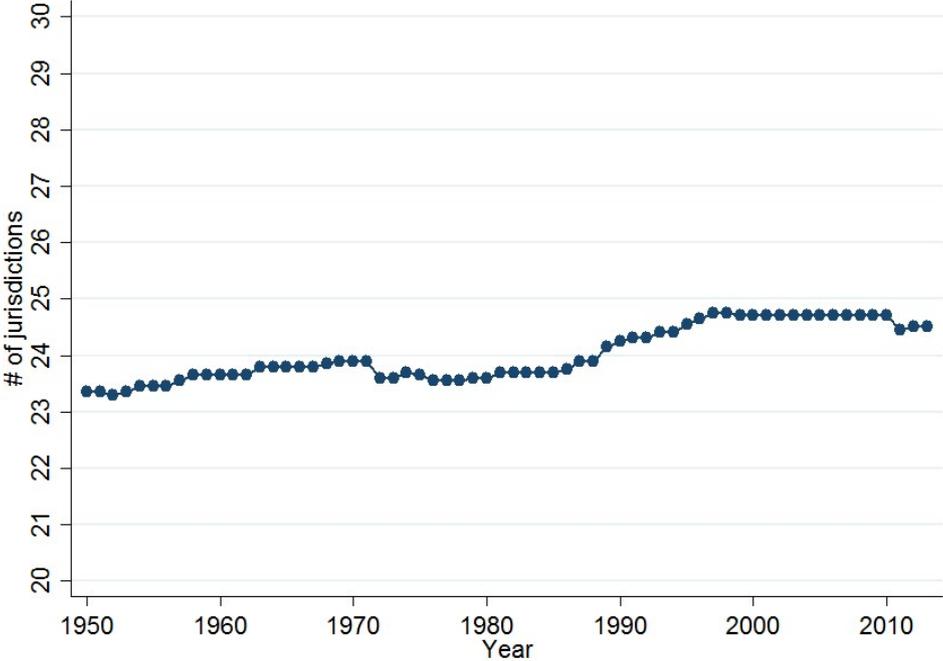
Notes: Own compilation. Figure depicts the average number of top tier subnational governments in OECD countries which are not from former post-soviet countries (Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovac Republic, Slovenia). We also focus on federations, i.e. countries with 3 or more government layers. Hence, we exclude Israel and Iceland. We also exclude countries which underwent reforms which changed the number of government tiers during the sample period (France, Chile, Denmark, Finland, New Zealand). Altogether, the figure includes top tier subnational governments from Australia, Austria, Belgium, Canada, Germany (here West-Germany throughout the sample period), Greece, Ireland, Italy, Japan, Korea, Luxembourg, Mexico, Netherlands, Norway, Portugal, Spain, Sweden, Turkey, UK and the United States. Source: Statoids.com.

Figure A.2: Merger support across states
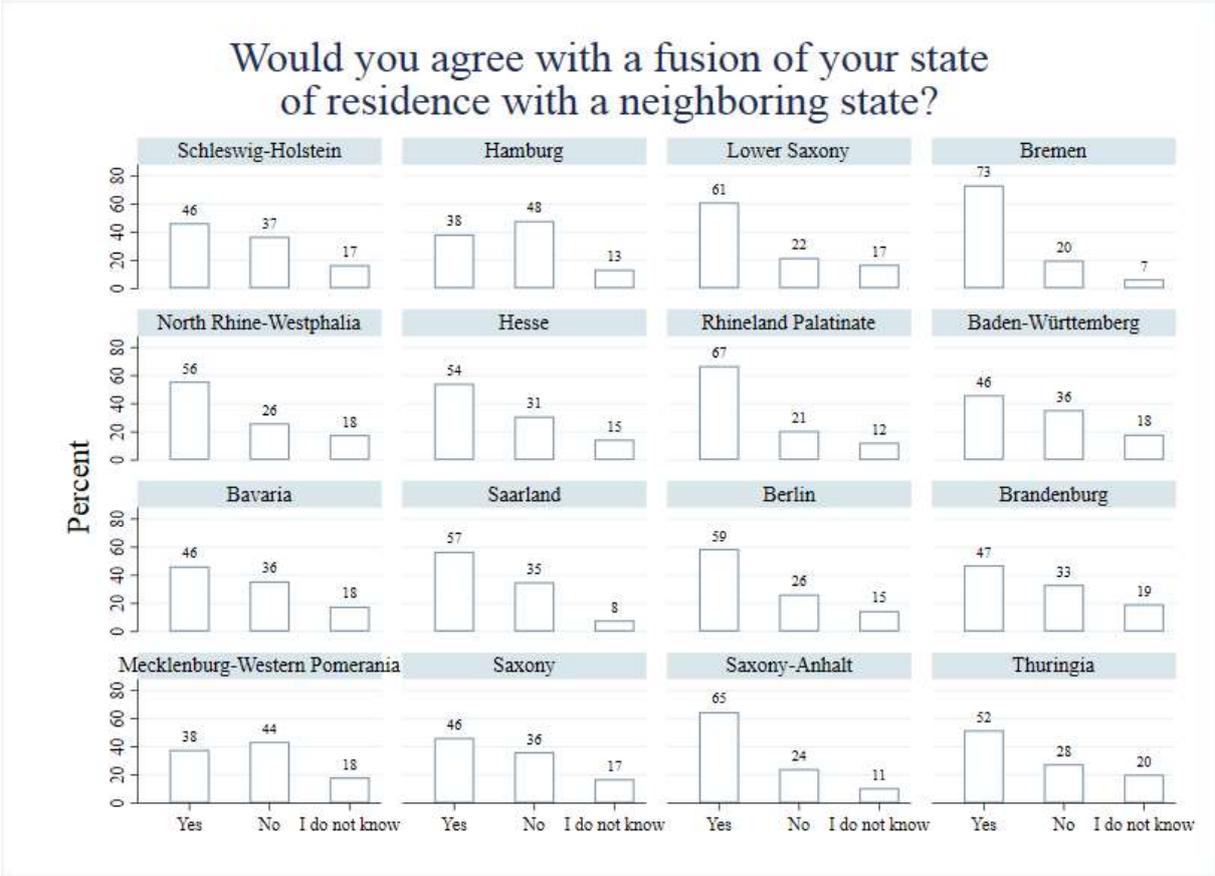
Notes: The figure shows the frequency of responses by answer category to the survey question "Would you agree with a fusion of your state of residence with a neighboring state?" from GIP wave 14 by state.

Table A.1: Descriptive statistics

	Definition	Source	Mean	SD	Min	Max	Count
Announced cost savings							
50 euros	Dummy: cost saving treatment 50 euros = 1	GIP 14	0.199	0.399	0.000	1.000	3509
100 euros	Dummy: cost saving treatment 100 euros = 1	GIP 14	0.198	0.399	0.000	1.000	3509
150 euros	Dummy: cost saving treatment 150 euros = 1	GIP 14	0.199	0.399	0.000	1.000	3509
200 euros	Dummy: cost saving treatment 200 euros = 1	GIP 14	0.197	0.398	0.000	1.000	3509
Preference costs							
AGP	Dummy: party preference aligned to government party of current state = 1	Own calculation	0.430	0.495	0.000	1.000	2621
APM	Dummy: party preference aligned to prime minister in current state = 1	Own calculation	0.271	0.445	0.000	1.000	2621
Vote share	Share of preferred party's votes in current state parliament	Own calculation	0.225	0.143	0.000	0.484	2621
Seat share	Share of preferred party's seats in current state parliament	Own calculation	0.248	0.165	0.000	0.561	2621
ΔSeatD	Change of seats of preferred party in merger state (merger includes all discussed states)	Own calculation	-0.006	0.056	-0.166	0.180	2621
ΔSeatDW	Like ΔSeatD, but population weighted calculation	Own calculation	-0.094	0.130	-0.434	0.030	2621
ΔSeatN	Change of seats of preferred party in merger state (merger includes only discussed neighbor states)	Own calculation	-0.005	0.053	-0.197	0.153	2621
ΔSeatNW	Like ΔSeatN, but population weighted calculation	Own calculation	-0.084	0.121	-0.399	0.123	2621
Understand	Dummy: Response of 3, 4 or 5 = 1 for self-assessment to understand political questions over scale of 1 to 5.	GIP 13	0.820	0.385	0.000	1.000	3493
Participate	Dummy: Response of 3, 4 or 5 = 1 for self-assessment to participate in political conversations over scale of 1 to 5	GIP 13	0.295	0.456	0.000	1.000	3490
Close	Dummy: Response of 3, 4 or 5 = 1 for image of closeness of politicians over scale from 1 to 5	GIP 13	0.658	0.474	0.000	1.000	3493
Care	Dummy: Response of 3, 4 or 5 = 1 for image of how politicians care about simple people over scale from 1 to 5	GIP 13	0.172	0.378	0.000	1.000	3492
Merger discussion	Dummy: state involved in discussion of any state merger in 2014 = 1	Own calculation	0.475	0.499	0.000	1.000	3509
Number discussed	Number of other states a given state was discussed to merge with in 2014	Own calculation	4.062	1.873	1.000	9.000	3509

Table A.1: Descriptive statistics (continued)

	Definition	Source	Mean	SD	Min	Max	Count
Control variables							
Age<29	Dummy: =1 if age of respondent <= 29	GIP 14	0.178	0.382	0.000	1.000	3509
29<age<=49	Dummy: =1 if age of respondent > 29 and <=49	GIP 14	0.353	0.478	0.000	1.000	3509
Age>=50	Dummy: =1 if age of respondent >=50	GIP 14	0.469	0.499	0.000	1.000	3509
Job trainee	Dummy: = 1 if respondent does not (yet) have a certificate of professional qualification	GIP 14	0.116	0.320	0.000	1.000	3494
Vocational	Dummy: = 1 if respondent does have a certificate of professional qualification but not on college or university level	GIP 14	0.577	0.494	0.000	1.000	3494
College	Dummy: = 1 if respondent does have a college/university level education	GIP 14	0.274	0.446	0.000	1.000	3494
Other training	Dummy: = 1 if respondent does have other form of professional qualification	GIP 14	0.034	0.181	0.000	1.000	3494
Married	Dummy: =1 if respondent is married	GIP 14	0.583	0.493	0.000	1.000	3508
Widowed	Dummy: =1 if respondent is widowed	GIP 14	0.021	0.145	0.000	1.000	3508
Divorced	Dummy: =1 if respondent is divorced	GIP 14	0.086	0.280	0.000	1.000	3508
Female	Dummy: =1 if respondent is female	GIP 14	0.507	0.500	0.000	1.000	3508
Employed	Dummy: = 1 if respondent has some job or in some form of vocational training	GIP 14	0.655	0.475	0.000	1.000	3506
Income class 1	Dummy: =1 if net household income of respondent is <1500 Euro	GIP 13	0.128	0.334	0.000	1.000	3509
Income class 2	Dummy: =1 if net household income of respondent is => 1500 and <2500 Euro	GIP 13	0.217	0.413	0.000	1.000	3509
Income class 3	Dummy: =1 if net household income of respondent is => 2500 and <3500 Euro	GIP 13	0.220	0.414	0.000	1.000	3509
Income class 4	Dummy: =1 if net household income of respondent is => 3500 and <4500 Euro	GIP 13	0.144	0.351	0.000	1.000	3509
Income class 5	Dummy: =1 if net household income of respondent is =>4500 Euro	GIP 13	0.123	0.328	0.000	1.000	3509
No income declared	Dummy: =1 if net household income of respondent is not declared in survey	GIP 13	0.168	0.374	0.000	1.000	3509
Left voter	Dummy: =1 if respondent intends to vote for either SPD, Die Linke, Bündnis 90/Grüne or Die Piraten in the next federal election	GIP 14	0.475	0.499	0.000	1.000	2931
Right voter	Dummy: =1 if respondent intends to vote for either CDU/CSU, FDP, AFD or NPD in the next federal election	GIP 14	0.419	0.494	0.000	1.000	2931
Can't vote	Dummy: =1 if respondent is not allowed to vote in next federal election	GIP 14	0.031	0.175	0.000	1.000	2957
Non voter	Dummy: =1 if respondent does not intend to vote in next federal election	GIP 14	0.073	0.261	0.000	1.000	2957

Notes: The table depicts the summary statistics for all treatment group dummies and all variables used except for our outcome variable on merger support. Source of data is also stated in the table.

Table A.2: Balancing table: mean comparison of control variables across treatment groups

	Control	50 euros	100 euros	150 euros	200 euros	Total	Chi2	Chi2 (p-value)
				Mean				
Age<29	0.166	0.149	0.167	0.158	0.184	0.165	3.942	0.414
29<age<=49	0.362	0.337	0.359	0.355	0.321	0.347	3.418	0.490
Age>=50	0.473	0.514	0.474	0.487	0.495	0.488	1.767	0.779
Job trainee	0.087	0.116	0.131	0.101	0.111	0.109	3.777	0.437
Vocational	0.565	0.559	0.587	0.602	0.542	0.571	6.365	0.174
College	0.305	0.304	0.253	0.271	0.307	0.288	6.753	0.150
Other training	0.043	0.021	0.030	0.026	0.040	0.032	12.243	0.016
Married	0.565	0.602	0.570	0.619	0.618	0.595	7.832	0.098
Widowed	0.027	0.022	0.021	0.031	0.016	0.023	3.393	0.494
Divorced	0.089	0.099	0.089	0.072	0.083	0.086	4.266	0.371
Female	0.480	0.483	0.474	0.485	0.483	0.481	0.911	0.923
Employed	0.650	0.647	0.646	0.686	0.644	0.655	6.961	0.138
Income class 1	0.130	0.125	0.131	0.115	0.134	0.127	2.744	0.602
Income class 2	0.210	0.220	0.221	0.221	0.203	0.215	1.887	0.757
Income class 3	0.217	0.230	0.251	0.225	0.222	0.229	1.757	0.780
Income class 4	0.142	0.156	0.150	0.142	0.161	0.150	1.278	0.865
Income class 5	0.154	0.133	0.129	0.111	0.130	0.132	5.956	0.202
No income declared	0.148	0.137	0.118	0.185	0.149	0.148	8.606	0.072
Left voter	0.473	0.457	0.484	0.448	0.517	0.476	6.904	0.141
Right voter	0.420	0.433	0.425	0.431	0.391	0.420	2.571	0.632
Can't vote	0.029	0.033	0.030	0.034	0.028	0.031	0.647	0.958
Non voter	0.078	0.078	0.061	0.087	0.064	0.074	4.200	0.380

Notes: The table shows mean values of all individual level covariates across control and treatment groups. Statistical independence across groups is tested using a chi-square test.

Table A.3: Anatomy of merger support, baseline LPM models

	(1)	(2)	(3)	(4)
50 euros	0.026	0.025	0.025	-0.001
	(0.028)	(0.029)	(0.029)	(0.031)
100 euros	0.091***	0.089***	0.091***	0.080***
	(0.028)	(0.028)	(0.028)	(0.030)
150 euros	0.127***	0.127***	0.126***	0.112***
	(0.028)	(0.028)	(0.028)	(0.030)
200 euros	0.128***	0.128***	0.127***	0.112***
	(0.028)	(0.028)	(0.028)	(0.030)
29<age<=49	0.075**	0.069**	0.066*	0.062
	(0.032)	(0.035)	(0.035)	(0.038)
Age>=50	0.138***	0.129***	0.127***	0.131***
	(0.034)	(0.037)	(0.037)	(0.041)
Married	0.002	0.002	0.012	-0.012
	(0.026)	(0.027)	(0.028)	(0.030)
Widowed	-0.028	-0.026	-0.026	-0.071
	(0.066)	(0.066)	(0.066)	(0.069)
Divorced	0.024	0.024	0.018	0.024
	(0.038)	(0.038)	(0.038)	(0.041)
Female	0.017	0.016	0.015	0.006
	(0.018)	(0.018)	(0.018)	(0.020)
Vocational		0.033	0.040	0.040
		(0.035)	(0.036)	(0.040)
College		0.022	0.034	0.041
		(0.036)	(0.037)	(0.041)
Other training		0.023	0.027	0.021
		(0.058)	(0.058)	(0.065)
Employed			0.008	0.009
			(0.021)	(0.023)
Income class 2			-0.054*	-0.047
			(0.032)	(0.035)
Income class 3			-0.055*	-0.042
			(0.033)	(0.036)
Income class 4			-0.053	-0.035
			(0.037)	(0.040)
Income class 5			-0.063	-0.048
			(0.039)	(0.041)
No income declared			-0.041	-0.053
			(0.035)	(0.038)
Left voter				0.011
				(0.020)
Can't vote				0.008
				(0.061)
Non voter				0.039
				(0.041)
Socio-demographics	Yes	Yes	Yes	Yes
Education	No	Yes	Yes	Yes
Household income	No	No	Yes	Yes
Political preferences	No	No	No	Yes
N	2881	2869	2867	2476

Notes: The table presents the determinants effects of merger support. This is estimated by OLS regressions of preferences for merger support on treatment dummies and various covariates. Merger support is measured as a dummy variable equaling 1 for "Yes" answers to the question "Would you agree with a fusion of your state of residence with a neighboring state?" and 0 for "No" answers. "I do not know" answers are omitted. The columns differ by included covariates while always controlling for state-fixed effects. Column (1) considers socio-demographic controls only (29<age<=49, age>=50 and being married, widowed, divorced or female), Column (2) adds education measures (having vocational, college or other training), Column (3) adds household income categories (income class 2-5 and no income declared) and Column (4) also includes political preferences (left voter, cannot vote and non-voters). Robust standard errors are reported in parentheses. Significance levels: * p<0.10, ** p<0.05, *** p<0.01.

Table A.4: Effects of cost savings expectations on merger support, probit models

	(1)	(2)	(3)	(4)
50 euros	0.077	-0.011	0.083	-0.003
	(0.074)	(0.080)	(0.075)	(0.081)
100 euros	0.235***	0.217***	0.241***	0.216***
	(0.075)	(0.081)	(0.076)	(0.082)
150 euros	0.339***	0.294***	0.347***	0.304***
	(0.076)	(0.082)	(0.076)	(0.083)
200 euros	0.342***	0.306***	0.348***	0.305***
	(0.076)	(0.082)	(0.077)	(0.083)
Individual controls	No	Yes	No	Yes
State-fixed effects	No	No	Yes	Yes
N	2883	2476	2883	2476

Notes: The table presents the effects of the randomized treatment interventions on merger support. This is estimated by probit regressions of preferences for merger support on treatment dummies. Merger support is measured as a dummy variable equaling 1 for "Yes" answers to the question "Would you agree with a fusion of your state of residence with a neighboring state?" and 0 for "No" answers. "I do not know" answers are omitted. Robust standard errors are reported in parentheses. Significance levels: * $p<0.10$, ** $p<0.05$, *** $p<0.01$.

Table A.5: Effects of cost savings expectations on merger support, logit models

	(1)	(2)	(3)	(4)
50 euros	0.123	-0.018	0.134	-0.006
	(0.119)	(0.128)	(0.120)	(0.130)
100 euros	0.378***	0.351***	0.392***	0.352***
	(0.121)	(0.131)	(0.123)	(0.133)
150 euros	0.549***	0.481***	0.568***	0.499***
	(0.123)	(0.133)	(0.125)	(0.136)
200 euros	0.553***	0.500***	0.567***	0.502***
	(0.123)	(0.134)	(0.125)	(0.135)
Individual controls	No	Yes	No	Yes
State-fixed effects	No	No	Yes	Yes
N	2883	2476	2883	2476

Notes: The table presents the effects of the randomized treatment interventions on merger support. This is estimated by logit regressions of preferences for merger support on treatment dummies. Merger support is measured as a dummy variable equaling 1 for "Yes" answers to the question "Would you agree with a fusion of your state of residence with a neighboring state?" and 0 for "No" answers. "I do not know" answers are omitted. Robust standard errors are reported in parentheses. Significance levels: * $p<0.10$, ** $p<0.05$, *** $p<0.01$.

Table A.6: Effects of cost savings expectations on merger support, ordered probit models

	(1)	(2)	(3)	(4)
50 euros	-0.012	-0.012	-0.010	-0.009
	(0.063)	(0.069)	(0.063)	(0.070)
100 euros	0.117*	0.107	0.118*	0.106
	(0.062)	(0.068)	(0.062)	(0.068)
150 euros	0.173***	0.185***	0.178***	0.193***
	(0.061)	(0.067)	(0.061)	(0.068)
200 euros	0.188***	0.192***	0.192***	0.195***
	(0.061)	(0.067)	(0.061)	(0.067)
Individual controls	No	Yes	No	Yes
State-fixed effects	No	No	Yes	Yes
N	3469	2896	3469	2896

Notes: The table presents the effects of the randomized treatment interventions on merger support. This is estimated by ordered probit regressions of preferences for merger support on treatment dummies. Merger support is measured as a dummy variable equaling 1 for "Yes" answers to the question "Would you agree with a fusion of your state of residence with a neighboring state?" and 0 for "No" answers. "I do not know" answers are coded as a value of 2. Robust standard errors are reported in parentheses. Significance levels: * $p<0.10$, ** $p<0.05$, *** $p<0.01$.

Table A.7: Marginal effects of cost savings expectations on merger support, ordered probit models (predicted outcome is merger support)

	(1)	(2)	(3)	(4)
50 euros	-0.001	-0.002	-0.001	-0.001
	(0.006)	(0.009)	(0.006)	(0.009)
100 euros	0.012*	0.014	0.012*	0.014
	(0.006)	(0.009)	(0.006)	(0.009)
150 euros	0.017***	0.025***	0.018***	0.026***
	(0.006)	(0.009)	(0.006)	(0.009)
200 euros	0.019***	0.026***	0.019***	0.026***
	(0.006)	(0.009)	(0.007)	(0.009)
Individual controls	No	Yes	No	Yes
State-fixed effects	No	No	Yes	Yes
N	3469	2896	3469	2896

Notes: The table presents the effects of the randomized treatment interventions on merger support. This is estimated by ordered probit regressions of preferences for merger support on treatment dummies. Merger support is measured as a dummy variable equaling 1 for "Yes" answers to the question "Would you agree with a fusion of your state of residence with a neighboring state?" and 0 for "No" answers. "I do not know" answers are coded as a value of 2. Marginal effects are calculated for merger support ("Yes" responses). Robust standard errors are reported in parentheses. Significance levels: * $p<0.10$, ** $p<0.05$, *** $p<0.01$.

Table A.8: Effects of cost savings expectations on being undecided on merger support, LPM

	(1)	(2)	(3)	(4)
50 euros	-0.015	0.001	-0.016	-0.001
	(0.019)	(0.020)	(0.019)	(0.020)
100 euros	0.004	-0.003	0.004	-0.004
	(0.020)	(0.020)	(0.020)	(0.020)
150 euros	0.006	0.013	0.006	0.013
	(0.020)	(0.021)	(0.020)	(0.021)
200 euros	0.012	0.012	0.012	0.012
	(0.020)	(0.020)	(0.020)	(0.020)
Individual controls	No	Yes	No	Yes
State-fixed effects	No	No	Yes	Yes
N	3509	2913	3509	2913

Notes: The table presents the effects of the randomized treatment interventions on being undecided on mergers. This is estimated by OLS regressions of preferences for mergers on treatment dummies. Being undecided is measured as a dummy variable equaling 1 for "I do not know" answers to the question "Would you agree with a fusion of your state of residence with a neighboring state?" and 0 for "Yes" and "No" answers. Robust standard errors are reported in parentheses. Significance levels: * $p<0.10$, ** $p<0.05$, *** $p<0.01$.

**Table A.9: Effects of cost savings expectations on merger support,
using voting at last election for alignment**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Cost savings from merger							
50 euros	-0.021	-0.022	-0.021	-0.022	-0.016	-0.017	-0.016	-0.017
	(0.032)	(0.032)	(0.032)	(0.032)	(0.032)	(0.032)	(0.032)	(0.032)
100 euros	0.044	0.046	0.045	0.048	0.045	0.047	0.045	0.047
	(0.032)	(0.032)	(0.032)	(0.032)	(0.032)	(0.032)	(0.032)	(0.032)
150 euros	0.084***	0.088***	0.085***	0.088***	0.084***	0.088***	0.085***	0.089***
	(0.032)	(0.032)	(0.032)	(0.032)	(0.032)	(0.032)	(0.032)	(0.032)
200 euros	0.076**	0.075**	0.078**	0.077**	0.074**	0.071**	0.074**	0.071**
	(0.032)	(0.032)	(0.032)	(0.032)	(0.032)	(0.032)	(0.032)	(0.032)
	Alignment losses from merger							
AGP	-0.001	-0.014						
	(0.028)	(0.032)						
APM			-0.045	-0.061*				
			(0.032)	(0.035)				
Vote share					-0.002***	-0.002***		
					(0.001)	(0.001)		
Seat share							-0.182***	-0.210***
							(0.058)	(0.059)
Individual controls	No	Yes	No	Yes	No	Yes	No	Yes
State-fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	2304	2297	2304	2297	2304	2297	2304	2297

Notes: The table presents the effects of the randomized treatment interventions on merger support and the influence of different measures of political alignment as control variables. This is estimated by OLS regressions of preferences for merger support on treatment dummies. Merger support is measured as a dummy variable equaling 1 for "Yes" answers to the question "Would you agree with a fusion of your state of residence with a neighboring state?" and 0 for "No" answers. "I do not know" answers are omitted. Moreover, the table shows the effect of an individual respondent's alignment with incumbent government parties in his home state (AGP) in Column (1)-(2), an individual respondent's alignment with the party of the incumbent prime minister in his home state (APM) in Column (3)-(4), the vote share of the preferred party of an individual respondent in his home state in Column (5)-(6) and the seat share of the preferred party of an individual respondent in his home state in Column (7)-(8) on merger support. Significance levels: * p<0.10, ** p<0.05, *** p<0.01.

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