

# The Constrained Politics of Local Public Investment under Cooperative Federalism

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## Abstract

Public investment spending declined steadily in advanced economies during the last three decades. Germany is a case in point where the aggregate decline coincided with growing inequality in investment across districts. What explains the variation in local investment spending? We assembled a novel data set to investigate the effects of structural constraints and partisanship on German districts' investment spending from 1995 to 2018. We find that the lack of fiscal and administrative capacity significantly influences local investment patterns. Yet, within these constraints, partisanship matters. Conservative politicians tend to prioritize public investment more than the left. This is especially the case when revenues from local taxes are low. As the fiscal conditions improve, left-wing politicians increase investment more strongly, and hence the difference between the left and the right disappears. Our findings are indicative of how regional economic divergence can emerge even within cooperative federal systems and show that, even when decision-makers operate under various institutional and structural constraints, partisanship matters for how these actors allocate discretionary spending.

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## 1. Introduction

Public investment spending has declined continuously in advanced economies since the 1970s, a negative trend further reinforced by severe cuts in the aftermath of the Global Financial Crisis (De Jong et al. 2018). By now, policymakers and experts acknowledge the adverse consequences of this development as reports about decaying infrastructures have accumulated and awareness about the enormous challenges posed by climate and technological change as well as demographics has grown (Mazzucato, 2014; Abiad et al., 2015).

Less recognized, however, is the importance of subnational governments in shaping these aggregate trends. Amongst countries of the Organisation for Economic Co-operation and Development (OECD), regional and local authorities are responsible for about 57% of public gross capital formation,<sup>1</sup> a share that goes up to 70% in federal countries (OECD, 2019). Among these federal systems, Germany stands out as a crucial case where we observe two striking trends. First, the country's overall public investment has declined steadily due to the collapse of local public investment spending. Second, divergence in investment spending across local governments has been on the rise since the mid-2000s. Hidden behind Germany's public investment shortfall thus are mounting regional inequalities in the public capital stock.

Scholars familiar with competitive federalism systems, like the USA, might expect high regional economic inequality to be the norm (Peterson 2012). Yet, this is surprising for Germany which boasts a cooperative federal system and fiscal equalization schemes aimed at reducing subnational governments' differences in fiscal capacity (Spahn and Föttinger, 1997; Börzel, 2002; Hepp and Von Hagen, 2012). Moreover, the German Constitution mandates equivalent living conditions across the country (Art. 72, Basic Law). What explains such marked variation in the provision of local public goods under cooperative federalism?

To answer this question, we investigate the effect of institutional and political factors on local governments' investment spending across Germany. We leverage novel data collected through a comprehensive research effort conducted in collaboration with Germany's 13 state statistical agencies.<sup>2</sup> Our original data set comprises unique information on public investment as well as other fiscal, economic, and demographic variables. We combine this data set with information on the partisanship of local mayors and district administrators from the late 1990s until 2018 coded from the annual reports of the Konrad Adenauer Foundation (*Kommunales Wahllexikon*). We then test the conditional effects of our independent variables on local public investment with time-series-cross-section (TSCS) analyses.

Our results suggest that local governments are strongly influenced by the interacting constraints of Germany's fiscal federalism and regional economic structures. Districts (*Kreise*) invest more when local governments can generate greater disposable resources from local taxes; when they have low levels of debt; and when they possess the administrative capacity to implement investments (i.e., technical personnel).<sup>3</sup> Most surprisingly, however, despite the constraining nature of fiscal rules and unequal economic geographies, we find that local-level partisanship matters: right-wing mayors tend to invest more than left-wing ones. A significant interaction effect between partisanship and business tax revenues reveals that left politicians invest less than conservatives at low levels of revenue but accelerate investments faster as revenues rise.

Our results entail two key insights of relevance for research on public investment, comparative federalism, and the political economy of local public finances. First, multi-level systems like Germany's cooperative federalism inhibit divergence in highly salient welfare state expenditures (e.g., unemployment insurance); expenditures for these domains are protected by laws and (imperfectly) supported through fiscal redistribution. But in this system, public investment is treated as a *discretionary* type of local expenditure that can vary significantly depending on local governments' disposable revenues, discretionary subsidies, debt burdens, and administrative capacity. An asymmetry is thus built into the polity's institutional configuration, which particularly hurts investment spending in regions that are already disadvantaged by weak economic structures and low growth.

Second, we show that, when concentrating on discretionary spending items like public investment, partisanship matters even within highly constraining multi-level state structures. Established literature in political science has for long argued that due to the institutional structures and egalitarian norms of Germany's federalism (Braml and Felbermayr, 2018), partisanship does not exert a significant effect on local fiscal policymaking (e.g., Wagschal, 1996; 2018; Bogumil et al., 2014). Instead, we find that local governments' partisanship affects public investment spending. However, partisan effects do not corroborate the conventional view according to which left-wing parties tend to spend more on public goods than right-wing ones (Boix, 1997). Our results indicate that right-wing mayors in German local governments spend *more* on public investment than left-wing ones. We explain this variation in terms of conservative parties' close ties with local business communities (e.g., chambers of commerce or business associations) that lobby for greater investment in the physical infrastructure needed to ensure their competitiveness. By contrast, left-wing mayors invest less when faced with fiscal constraints and are only willing to increase spending when disposable funds increase. In short, partisanship matters precisely because politicians need to make consequential choices using scarce resources.

The article proceeds as follows. In Section 2, we present data to show the increasing inequality in investment patterns across Germany's subnational governments and discuss it with reference to the literature on subnational fiscal policymaking. In Section 3, we lay out our theory-grounded hypotheses. In Section 4, we introduce our data and the methodology employed for testing the hypotheses in Section 5. We then conclude by summarizing our key findings and discussing the implications of our study.

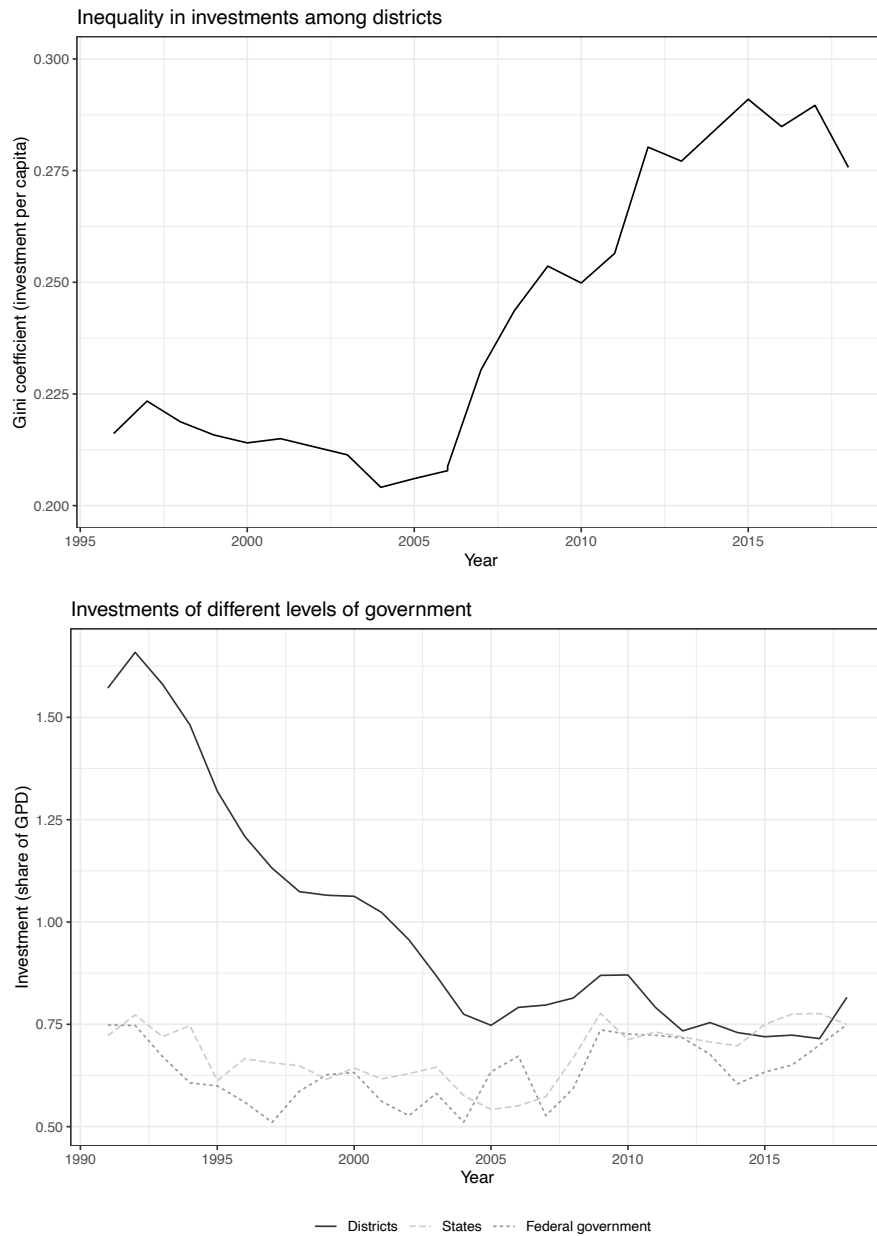
## *2. Germany's divergent patterns of local public investment and the political economy of subnational fiscal policymaking*

Germany's poor record of public investment in physical infrastructure over the past 30 years is largely a local phenomenon (Roth and Wolff, 2018). Due to its federal polity, subnational governments have historically been responsible for the bulk of public investment. As the top panel in Figure 1 indicates, however, local governments' cuts lie behind Germany's collapse in investment spending. Accordingly, economic studies and surveys amongst local authorities reveal a significant gap between the demand and supply of infrastructures at the local level (Bardt et al., 2019; KfW, 2019). This gap has particularly arisen in the maintenance and renewal of roads, schools, public offices, childcare facilities, as well as digital infrastructures.

There is now growing awareness of these deficiencies, and a consensus has emerged among policymakers and social partners about the need for more local infrastructure spending (Expertenkommission des BMWi, 2016). Yet, most observers still overlook that the overall decline in local investment developed alongside mounting variation (Arnold et al., 2015). The bottom panel in Figure 1 documents this divergence by showing the Gini coefficient of per capita gross investment spending among Germany's districts, which has markedly increased since 2005.

Figure 2 reinforces this finding by showing the inequality in per capita investment spending across German districts at three different points in time (1996, 2006 and 2018). The maps indicate that investment spending was initially high in Southern and Eastern Germany's districts during the mid-1990s. In the East, this was a catch-up phenomenon following reunification which involved large federal support programmes aimed at promoting economic reconstruction and the equalization of living conditions (Gunlicks, 2003, p. 184). The fiscal crisis at the turn of the century then induced widespread cuts in investment spending across the country (Streeck, 2007). But, over the last decade, with the improvement of Germany's fiscal conditions after the financial crisis, patterns of local investment spending have increasingly diverged. In 2018, per capita spending for public investment is particularly high in Southern districts, while it remains low in the Western and

Northern districts. For instance, the districts with the highest average per capita investment is in Bavaria (e.g., in and around Munich) while the highest concentration of low investments is around the *Ruhr* valley.

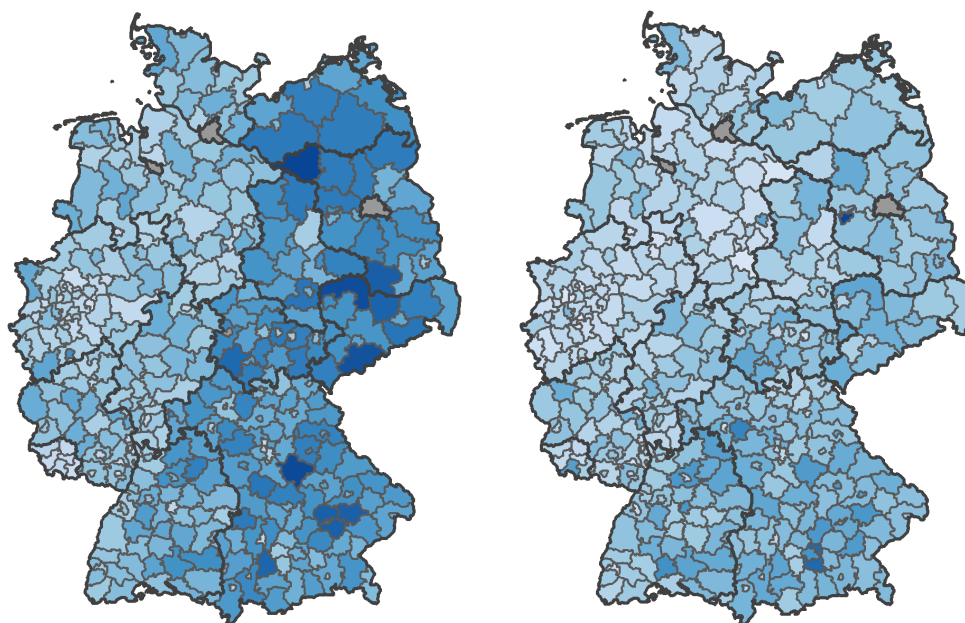


**Figure 1.** The development of public investment in Germany over time

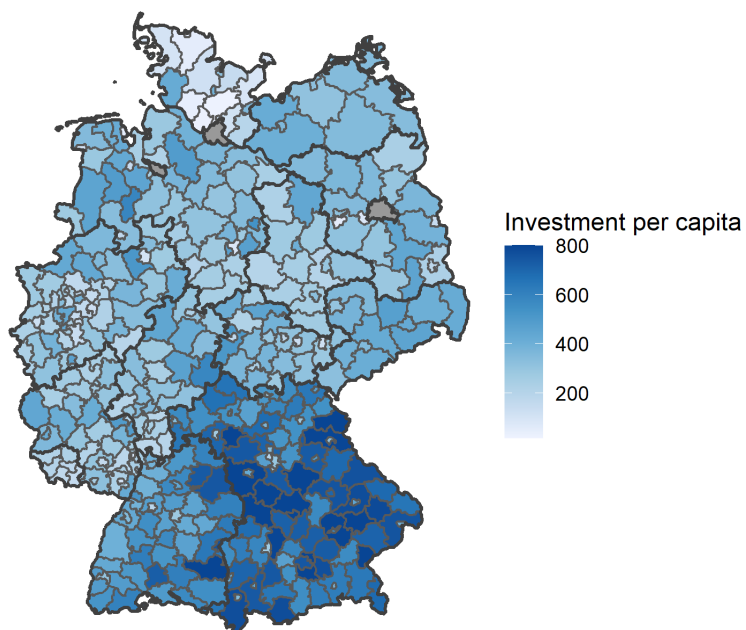
Note: The top panel of the figure shows gross public investment for all districts (sum), states (sum), and the federal government. Each time series is presented as a share of German GDP. Source: Federal Statistical Office of Germany, own calculations. The bottom panel of the figure shows the Gini coefficient in investment per capita among all German districts. Source: Statistical Offices of the States (see below), own calculations.

1996

2006



2018



**Figure 2.** Public investment of all German districts at selected points in time

Note: The figure shows the gross per capita investment of all German districts in 1996, 2006, and 2018 on a scale from €0 to €800. All outliers with per capita investment above €800 are assigned the highest value. Data for Germany's city-states (Berlin, Bremen, and Hamburg), which do not have districts, are missing and marked as grey.

How can we explain such a marked variation in public investment spending among local governments within a cooperative federalism system? We build on two strands of literature on subnational fiscal policymaking to answer this question. First, research highlights that subnational authorities are institutionally constrained in their tax-raising and spending capacity. For instance, fiscal rules and political institutions matter because they define entitlements, obligations, incentives, and constraints for subnational authorities – a long-standing theme in comparative federalism research (Hüglin and Fenna, 2006; Rodden, 2006; Beramendi, 2011). Since any fiscal system entails choices over the degrees and forms of intra-state redistribution versus local autonomy, it creates winners and losers (Beramendi and Jensen, 2019). Similarly, the economic context can affect local governments differently because of heterogeneous patterns of de-industrialization and different pressures on local social spending (Yinger and Ladd, 1989; Beatty and Fothergill, 2014; Toubeau and Vampa, 2020). Particularly for the American case, the literature shows how reforms of federal funding rules (Kincaid, 2011) and intensified tax competition have interacted with processes of de-industrialization in some regions (e.g., the Rust Belt) to produce growing inequalities in local fiscal resources and public spending (Hobor, 2013; Reese et al., 2014). Germany, however, is considered a prototypical system of cooperative federalism aimed at reducing subnational governments' differences in fiscal capacity and public spending (Börzel, 2002; Hepp and Von Hagen, 2012). While most of the literature has focused primarily on fiscal equalization mechanisms at the level of the states (e.g., Rodden, 2006), local governments also receive transfers from the federal level and participate in equalization schemes *within* their respective states.<sup>4</sup> The system of local public finance is thus embedded within an overall fiscal system which is cooperative and redistributive in nature. It is designed to ensure that governments at all levels meet the constitutional mandate to ensure equivalent living conditions across the federal territory, an aim highly valued by German public opinion (Oberhofer et al. 2013, p. 106). Hence, mounting variation in local public investment contradicts theoretical expectations and indicates that the German cooperative system fails to prevent the emergence of strong inter-regional inequalities in some expenditure domains and economic outcomes (see also Dose and Reus, 2016; Jeffery and Pamphilis, 2016).

A second strand of research suggests that despite the existence of institutional constraints, party politics matters for public investment. Studying the national level, Boix (1997) argued that left-wing governments spend heavily on physical and human capital formation to increase the economy's productivity while right-wing governments rely on market actors. Along similar lines, Keman (2010) found that right-wing governments cut investment spending in an attempt to shrink the size of the state. Cuts in investment spending have indeed become more common under the

post-financial crisis regime of budgetary austerity and low fiscal capacity (Breunig and Busemeyer, 2012; Haffert and Mehrtens, 2015; Jacques, 2020a). However, when it comes to subnational policymaking, the conventional view has generally been that partisanship has little impact on economic outcomes and evidence on the effect of partisanship on local governments' budgetary decisions remains mixed. Studying the US case, for instance, some scholars find that Democratic mayors spend substantially more than Republican ones (de Benedictis-Kessner and Warshaw, 2016; 2020), while others find no discernible effects (Ferreira and Gyourko, 2009). Recent scholarship shows that partisanship matters for the budgets' composition and that Republicans prioritize infrastructure over social spending. Yet, most of this research is at the state level (Adolph et al., 2020). Jacques (2020b) offers one of the few compositional analyses of local fiscal politics, showing that left governments in Canadian provinces protect social expenditures while right-wing ones retrench them.

For the German case, the literature has traditionally been reluctant to acknowledge the importance of partisanship for subnational policymaking. Most studies show that partisanship does not affect governments' budgetary decisions due to the polity's rigid institutional constraints (Schmidt, 1996; Wagschal, 1996; 2018; Holtkamp, 2000; Kunz 2000, p. 344; Galli and Rossi, 2002). Recently, however, scholars have argued that partisanship and electoral competition can impact local governments' budgets (Seuberlich, 2017, p. 160; Timm-Arnold, 2011), for example with left-wing local governments and electorally more competitive districts running higher deficits (Rösel, 2017). One limitation of the literature, however, lies in the lack of detailed analyses of partisanship on local-level *discretionary* fiscal spending (for an exception, see Kunz, 2000). While we cannot fully remedy this deficit due to difficulties in disentangling mandatory from voluntary expenditures in local budgets, we examine the effect of local partisanship on fiscal policy by studying public investment, which is one of the most important items of discretionary expenditure.

### *3. Structural constraints and partisan choices: Public investment in a multi-level polity*

In this article, we aim to uncover the factors that determine the observed divergence in local governments' investment policy in Germany and investigate whether partisanship contributes to these differences. Our theoretical framework draws on insights from state-centred political economy and fiscal federalism (Katzenstein, 1987; Scharpf, 1988; Di Carlo, 2019), economic geography and regional economics (Dauth et al., 2018) as well as recent literature on national and subnational partisan politics (Beramendi et al., 2015; Garritzmann et al., 2021).



### 3.1 Structural constraints on local governments' decisions for public investment

As highlighted above, local governments' policymaking capacity in Germany is highly constrained by the polity's fiscal and political institutions. Germany's federal system, as set up in the Basic Law, consists of various governmental tiers: the federal government (*Bund*), the states (*Länder*), and the local governments divided into districts (*Kreise*) and municipalities (*Gemeinde*). Due to its peculiar features, Germany's federalism has been characterized as both asymmetric (Benz, 1999) and cooperative (Börzel, 2002). The system is considered asymmetric due to the vertical decoupling between the federal government's main legislative powers and the subnational governments' administrative functions.<sup>5</sup> While the federal government is responsible for most national legislation, including tax policy, administrative powers are assigned to the states and through them delegated to local governments. Local governments are then responsible for mandatory functions (e.g., local social welfare, administrative services, and schools' maintenance) and discretionary tasks such as public investment, but also additional voluntary measures that include welfare-related policies (e.g., youth support, women's shelter, counselling services, etc.).<sup>6</sup>

The high decentralization of administrative powers implies that local governments have large expenditures but, due to legal restrictions and structural constraints, they retain little *real* capacity to adjust their fiscal resources based on local needs (Kropp and Behnke, 2016). Local governments' tax revenues encompass both shared and own-source taxes. Shared taxes originate in the system of fiscal equalization which characterizes Germany's cooperative federalism and determines their distribution within and across states. Germany's fiscal system is enshrined in the constitution and determined by the federal parliament subject to the approval of the upper chamber (*Bundesrat*). From this equalization system, local governments receive a share of the personal income tax and the value-added tax but have no discretionary capacity to alter the apportionment of shared taxes accruing to them (WOFI, 2019). While shared taxes constitute around 20%, local governments receive around half of their revenues through grants from the state governments via the system of intra-state fiscal equalization (Buettner and Holm-Hadulla, 2008, p. 17). Own-source taxes include the local business tax (*Gewerbesteuer*), the property tax (*Grundsteuer*), and other minor taxes as well as fees, which on average make up the remaining third of revenues.

The local business tax levied on industrial and commercial companies is the most important own-source tax for local governments, representing 17% of total local revenues. We thus use it as an indicator of a district's capacity to generate its own disposable revenues because it is the largest single source of independent revenues, which varies significantly between districts.<sup>7</sup> The local business tax is set at a uniform base rate of 3.5% of business profits to which local governments

can add a discretionary multiplier (*Hebesatz*). However, competition among jurisdictions often implies that when local governments try to increase the local multiplier, the tax base shrinks, and the “business tax rate changes mostly do not yield significant revenue changes” (Blesse et al., 2018, p. 20). Thus, local tax-raising capacity in Germany is largely beyond local governments’ control and, most importantly, it is highly heterogeneous because it hinges on the presence of a vibrant local economy and industrial clusters (Blesse et al., 2018; Dauth et al., 2018). For example, local governments’ tax-raising capacity in the *Ruhr* valley has diminished due to regional deindustrialization, while local governments in the South have benefitted from the flourishing automotive and machinery industries (Dauth and Suedekum, 2016). As a result, we see significant differences in discretionary spending, which reflect local governments’ heterogeneous tax-raising capacity. This translates into our first hypothesis:

*H1: The more business tax revenues a local government collects, the more it will invest.*

A second constraint that arises from this institutional setting relates to the accumulation of public debt by local governments, particularly through the use of short-term liquidity loans (*Kassenkredite*) (Junkernheinrich and Wagschal, 2014). These loans have grown popular among cash-strapped governments in need to execute their mandatory functions despite their chronic underfunding (Bogumil et al., 2014; Beznoska and Kauder, 2020). However, levels of mandatory expenditures, most notably for local social protection, vary substantially across the country due to differences in unemployment levels but also in local living costs (e.g., for housing and heating). As a result, the incidence of mandatory social expenditures in local governments’ current expenditures differs greatly (Goerl et al., 2014; Arnold et al., 2015) and so does the need to resort to short-term loans. Excessive indebtedness reduces the scope for discretionary investment spending as interest payments crowd out other expenditures. Moreover, local governments with high debts are incentivized to cut on investment spending to avoid falling under the state’s budget surveillance programmes (*Kommunalaufsichten*) which then require further consolidation of discretionary expenditures (Holtkamp 2010, p. 15; Diermeier, 2020). This translates into our second hypothesis:

*H2: The more liquidity loans a local government has accumulated, the less it will invest.*

Moreover, to plan and execute investments, local authorities need administrative personnel. After reunification, the number of public personnel decreased substantially across Germany’s local governments due to the country’s fiscal crisis at the turn of the century (Holtkamp, 2010). Municipalities were highly affected by austerity measures (Keller, 2014) and, as a result, municipal public personnel was reduced from over 2 million to around 1.4 million employees between 1991

and 2005 (Di Carlo, 2019, p. 104). However, budgetary pressures were not equally distributed across local governments, leading especially the poorer and highly indebted local governments to make savings on the local wage bill through privatizations and outsourcing (Dribbusch and Schulten, 2007). Although local governments may hire new staff again when trying to expand investment, reversing personnel shortages is often a cumbersome task – also for wealthier local governments. Public employers compete for skilled personnel with the more-attractive private sector where salaries are higher and have grown much faster over the last three decades (Di Carlo, 2020, pp. 193-194). The result is that local governments cannot easily upscale their administrative capacity when wishing to expand local public investment. Insufficient personnel can thus become a constraining factor beyond the control of local governments, leading to discrepancies between desired levels of local public investment and actual spending capacity (KfW, 2019; Sachverständigenrat, 2019).<sup>8</sup> This leads to our third hypothesis:

*H3: The more administrative capacity a local government has, the more it will invest.*

### *3.2 Local partisanship, voluntary spending priorities, and responsiveness to different constraints*

While the literature generally maintains that partisanship does not matter for subnational policymaking in Germany, we expect party differences in the provision of public investment. Investment is a crucial item of local discretionary spending, which competes with other voluntary expenditures under conditions of scarce fiscal resources (Kunz, 2000, p. 342; Schneider et al., 2011). This expectation dovetails with literature on the USA, which finds that the effect of partisanship on local budgetary outcomes is higher in policy domains where local discretion is high (Gerber and Hopkins, 2011).

For the German case, the intuition is that because local decision-makers face institutional constraints which limit their tax-raising capacity, partisanship matters in how policymakers make trade-offs between competing discretionary expenditure items. Echoing recent scholarship on the impact of partisanship on subnational policymaking (e.g. Adolph et al., 2020; Jacques, 2020b; Toubeau and Vampa, 2020; Garritzmann et al., 2021), we argue that these choices are likely to reflect allegiances with different local constituencies (Beramendi et al., 2015) and producer groups (Gourevitch, 1986; Swenson, 1991) that benefit from different types of spending.

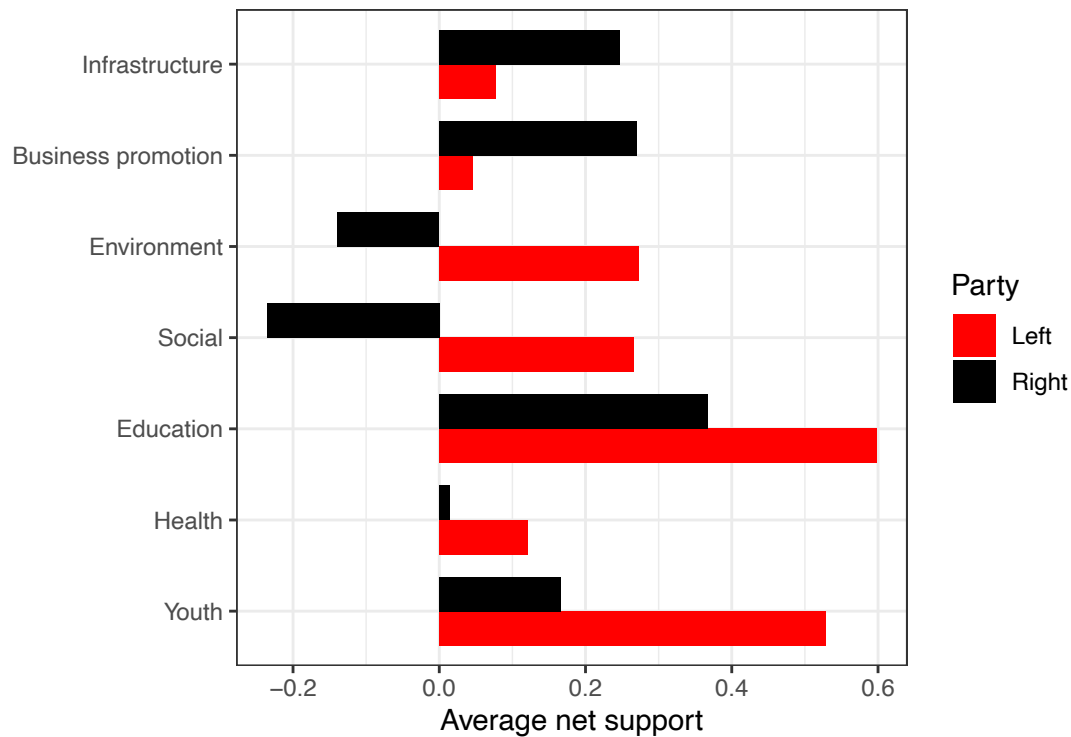
Left-wing parties have historically been supported by vulnerable constituencies that benefit from and endorse the welfare state (Esping-Andersen, 1985). Although social democratic parties have increasingly appealed to middle-class voters (Kitschelt, 1994; Gingrich and Häusermann, 2015),

left parties are still more likely to support voluntary expenditures for social assistance and associated budgetary items (e.g., on public services, for youth groups, etc.) than right-wing parties (Jacques, 2020b; Toubreau and Vampa, 2020). Clearly, local left-wing voters would also benefit from public investment. Yet, these more vulnerable social groups benefit directly from consumption-oriented expenditures as opposed to future and uncertain returns from physical capital investments (Jacques, 2020a; Gouvêa and Girardi, 2021). Therefore, under conditions of limited fiscal capacity, we expect left-wing mayors to prioritize keeping up with local voluntary social expenditures over investment spending.

This should be different for right-wing parties due to their links to the local business community. Business groups lobby for conditions that help local firms to succeed. Regional economies' infrastructural endowment is among the key factors conferring competitive advantages to firms (Camagni, 2002; Martin and Simmie, 2008). In fact, in the German export-oriented economy (Baccaro and Pontusson, 2016; Hassel and Palier, 2021), the business community demands the upgrading of physical infrastructures to ensure efficient logistics and transportation services. Moreover, German employers need highly skilled employees (Diessner et al., 2022). These groups of workers derive their incomes and wealth from markets and prefer investment expenditures (e.g., schools, roads, public services) – rather than welfare spending – to improve the quality of public services in the community where they live (Beramendi et al., 2015). Therefore, it is no surprise that the Federation of German Industries (BDI) prioritizes public investment to sustain the competitiveness of German firms in the era of digitalization over social expenditures, asking governments to: “no longer spend the majority of public money on welfare state benefits” and, instead, “invest strongly in public infrastructures such as schools, roads, broadband networks, and modern electricity networks” (BDI, 2014).

Overall, right-wing parties are thus likely to respond to these demands from businesses by prioritizing investment spending, which makes local communities more attractive to producers' coalitions. Survey evidence based on city councils' members in Germany supports this argument (Seuberlich, 2017, p. 170). Figure 3 shows that left-wing politicians on average advocate for greater spending on social protection, youth support, education, public administration personnel, and health, while these are the items where conservatives see possibilities for cuts. In contrast, conservatives advocate for greater public spending on road traffic, infrastructures, and business development policies, areas in which left-wing politicians would find cuts more acceptable. We thus formulate the following hypothesis:

*H4: Investment spending is higher when pro-business parties are in government.*



**Figure 3.** Average net support for different types of spending amongst members of city councils by partisanship

Note: The figure shows results from a survey of German mayors conducted by Seuberlich (2017). It shows the average of respondents' support for higher (=+1), lower (= -1), or constant (=0) spending for each budgetary category. A positive value indicates that mayors are in favor of spending increases; a negative value indicates that they are in favor of spending decreases.

However, parties can be expected to deal differently with changing fiscal conditions. While left parties are expected to deprioritize public investment to protect welfare spending under fiscal constraints, any government will face pressures to maintain and improve public infrastructure when deficiencies become increasingly visible. Therefore, one can expect that when local governments' fiscal space improves and the trade-off among scarce resources weakens, left parties will readily catch up with past public investment shortfalls by expanding investments at a faster pace than right-wing governments. Should this interaction effect exist, this would corroborate our assumption that trade-off logics are behind the partisan differences in public investment. This leads to the following hypothesis:

*H5: Left-wing parties invest more when fiscal capacity increases and the trade-off weakens.*

## *4. Data and methodology*

### *4.1 Data*

To test our hypotheses, we assembled two novel data sets. First, we collected a unique data set on local governments' investment in Germany from 1995 until 2018. The data was collected in collaboration with the statistical agencies of all German *Länder*. This allowed us to disaggregate public investments to the level of Germany's 401 districts. We then merged this information with additional data on other fiscal, economic, and demographic variables to investigate the determinants of public investment spending by local governments since the 1990s.

The data set includes information on districts from all federal states except the three city-states (Berlin, Hamburg, and Bremen) that have no districts. Moreover, the data set for the other thirteen states is unbalanced. For some districts – primarily in Eastern Germany – data was unavailable in given years due to changes in the accounting system. Overall, however, the data gives a comprehensive overview of local public investment developments in Germany. Detailed information on the data set is accessible in Online Appendix A.

Furthermore, to investigate partisanship effects, we coded local governments' partisanship from 1999 to 2018. Information on the partisanship of Germany's local governments has hitherto been unavailable in a single data set. We leveraged the annual reports by the Konrad Adenauer Foundation (*Kommunales Wablllexikon*), which include districts' electoral information. We focus primarily on the local executive including mayors (*Bürgermeister*) and district administrators (*Landrat*)<sup>9</sup> because those are key decision-makers in German local politics (Fuchs, 2012; Heinelt and Egner, 2012). Moreover, their importance vis-à-vis the local legislature has increased thanks to constitutional reforms establishing their direct appointment in local elections (Wollmann, 2004; Garmann, 2015).<sup>10</sup> In most cases, our resulting data set allows us to proxy the partisanship of the governing party in a given district. It thus gives a unique overview of which party was in control of Germany's district-level governments from 1999 until 2018.<sup>11</sup>

### *4.2 Independent and dependent variables*

For the analyses, we merged both data sets. The main dependent variable used in our analysis is districts' gross public investment spending per capita. We construct a variable for local governments' total investments by taking the sum of investment funds spent on physical infrastructures and other investments. We then calculate investment per capita by combining our

data with data on the population of each district, as provided by Germany's federal statistical agency.

To test our main expectations, we use several independent variables. First, we investigate the effect of fiscal revenues by focusing on the per capita tax revenues that districts collect from the local business tax (*Gewerbesteuer*). This item constitutes the single largest local tax. Since it is the major source of revenue that gives local governments disposable funds, the local business tax is particularly relevant for providing the financial resources necessary for investment spending.

Second, considering local governments' structural underfunding, we test the effect of public debt. We focus on the districts' liquidity loans, which local governments increasingly used to cope with shortfalls of revenue in the last few decades. They make up the largest share of districts' public debt that constrain voluntary spending, for fiscal and political reasons as explained above.

Third, we test the effects of administrative capacity on investment spending. A district's administrative capacity is difficult to operationalize. However, given our interest in policy implementation, we rely on the number of technical personnel employed in local administration (per 1,000 capita) as a proxy. These are the employees responsible for planning and executing public investment, thus influencing local governments' capacity to carry out investment.

Fourth, we created a categorical variable that measures local mayors' party affiliation. Historically, three party groups have dominated local elections in Germany: the conservative Christian Democratic Union (CDU) and its Bavarian sister party (CSU), the Social Democratic Party (SPD), and regional voter associations. Until recently, there have been very few instances of smaller parties winning local-level elections. To include these parties in the analyses, we merged left- (SPD, Greens, *Die Linke*) and right-wing parties (CDU/CSU, the Free Democratic Party) into two categories. Survey evidence and party manifestos suggest that this left-right divide is in line with the parties' positioning on economic issues (Figure A.1 and Figure A.2). We then combined regional voter associations and independent politicians in a residual category, leaving us with three categories (left, right and regional voter associations).

Finally, we use several control variables to account for additional variation in investment spending. First, we control for the district's expenditures on social assistance (*Sozialhilfe*). They are one of the main items of local governments' mandatory spending. Second, higher levels of government often directly subsidize investment projects. To control for the level of subsidies, we measure the size of purpose-specific subsidies by the *Bund* and the *Länder* to individual districts. Due to Germany's fiscal constitution, most of these subsidies come from the states.<sup>12</sup> Finally, we also control for local economic and demographic developments that can influence public investment by including cross

domestic product (GDP), changes in the unemployment rate, and net migration as control variables.

Similar to the dependent variable, we use per capita (business tax revenue, liquidity loans, investment subsidies, social security expenditure and GDP) or per 1,000 capita (capacity and net migration) measures for all our independent variables. Summary statistics and further information about the measurement of all variables are included in the Online Appendix A.

### 4.3 Methods

Ideally, we would have implemented a compositional-dependent variable analysis to test the effects of partisanship on alternative budgetary items under conditions of fiscal constraints (Breunig and Busemeyer, 2012; Adolph et al., 2020; Jacques, 2020b). However, districts' balance sheets do not differentiate neatly between mandatory and discretionary expenditures, which makes the operationalization of a compositional analysis difficult. We, therefore, focus solely on public investment per capita as our dependent variable and assume that variation in such spending reflects allocational choices over discretionary funds.

We use time-series-cross-section (TSCS) analysis to estimate the relationship between our independent variables and the dependent variable. Unit root tests show that all our data are stationary, which allows for time-series analysis. Our dependent variable has an autoregressive component, indicating that current levels of investment depend on previous levels. We thus use a first-order autoregressive model that includes one lagged dependent variable (LDV) [AR(1)]. We then use ordinary least squares (OLS) regression to estimate the following model:

$$Y_{it} = \beta_0 Y_{it-1} + \beta_k X_{kit} + \theta Z_{it} + \alpha_i + \gamma_t + \varepsilon_{it}$$

where investment  $Y_{it}$  is regressed on  $k$  independent variables  $X$ , a vector of control variables  $Z$ , unit  $\alpha_i$  and time  $\gamma_t$  fixed effects, and an error term. This two-way fixed-effects research design is commonly used by economists to control for unobserved confounders across time and space (Allison, 2009; Wooldridge, 2010). While it does not address all concerns related to causal identification (Imai and Kim, 2020), it goes a long way in limiting selection bias and reducing concerns about omitted variables.

Our data is cross-sectional dominant, but due to the inclusion of the lagged dependent variable (LDV) in our models, the effect of all independent variables on  $Y$  is dynamic. The initial impact exerts itself in a contemporaneous fashion with delayed effects accumulating over time, at a rate dictated by the coefficient for the LDV (De Boef and Keele, 2008). While the short-term effect of



an independent variable  $k$  is given by  $\beta_k$ , the long-run effect is thus given by  $\frac{\beta_k}{1-\beta_0}$ . To estimate the long-run effects, we use dynamic simulations (King et al., 2000). Specifically, we follow Williams and Whitten (2011) by simulating the predicted long-term value (and its confidence intervals) for different scenarios over a given number of time intervals based on our autoregressive models, as explained below.

The inclusion of a LDV and fixed effects can potentially bias our estimation (Nickell, 1981). The Nickell bias is particularly large for time series with very short time periods, but it becomes negligible as  $T$  increases. To check the robustness of our estimates, we include several alternative model specifications in Online Appendix C where: we drop the fixed effects and use pooled OLS regression, we drop the year-fixed effects and only control for district-fixed effects, and we estimate differenced Generalized Methods of Moments models suggested by Arellano and Bond (1991). To avoid misspecifications (Keele and DeBoef, 2008), we also tested whether our results are robust to alternative model specifications, including autoregressive distributed lag models with varying lag lengths (Plümper and Troeger, 2019). Overall, these estimations do not change our results.

To show that our results are not biased by observations from specific regions we also perform several robustness checks in Appendix D. We rerun the analysis separately for East and West Germany (Tables D.1 and D.2) and exclude Germany's prosperous southern states from the analysis (Table D.3). Moreover, we use a Jackknife resampling approach, which systematically drops districts from a given state from the analysis and then calculates the average regression coefficient from the thirteen different samples (Table D.4). Finally, we also only use physical investment (i.e., construction) as the dependent variable (Table D.5).

## 5. Empirical results

### 5.1 The constraining effects of Germany's multi-level state on local public investment

Table 1 shows the results of our regression analysis. In all the models there is a positive correlation between investment at  $t$  and investment at  $t-1$ , as indicated by the LDV. This suggests that public authorities increase/decrease investment gradually over the years, which reflects a usual feature of budgeting (Wildavsky, 1964) and is particularly plausible for investments, which often span multiple years.

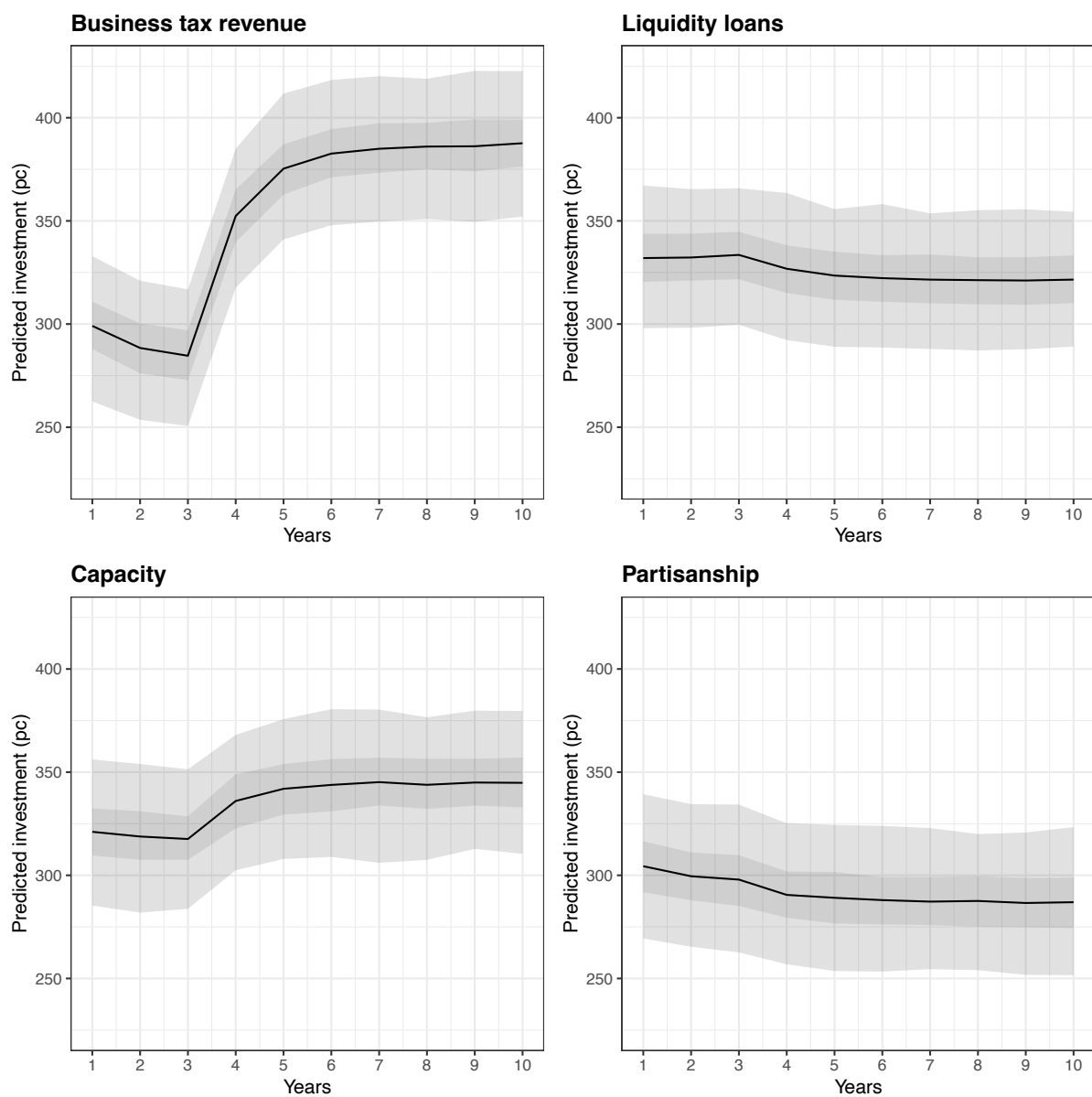
**Table 1.** The determinants of public investment across Germany's districts (OLS regression)

	<i>Dependent variable: Investment (per capita)</i>		
	(1)	(2)	(3)
lag(Investment (per capita))	0.346*** (0.010)	0.314*** (0.011)	0.314*** (0.011)
Business tax revenue (per capita)	0.162*** (0.009)	0.164*** (0.010)	0.141*** (0.012)
Liquidity loans (per capita)	-0.007*** (0.002)	-0.009*** (0.002)	-0.010*** (0.002)
Admin. Capacity (per 1,000 capita)	15.290*** (3.197)	19.493*** (3.653)	19.488*** (3.651)
Party: Left (ref.: right)		-6.813* (3.386)	-19.147*** (4.873)
Party: Regional voter assoc. (ref: right)		-0.667 (4.310)	-10.418 (7.331)
Investment subsidies (per capita)	0.733*** (0.021)	0.762*** (0.023)	0.767*** (0.023)
Social security expenditure (per capita)	0.002 (0.007)	0.004 (0.008)	0.002 (0.008)
GDP (per capita)	0.383 (0.262)	0.303 (0.298)	0.234 (0.299)
Unemployment (change)	0.516 (0.341)	0.578 (0.375)	0.579 (0.375)
Net migration (per 1,000 capita)	-0.276 (0.213)	-0.399 (0.248)	-0.406 (0.248)
Business tax rev. x left			0.036*** (0.010)
Business tax rev. x regional voter assoc.			0.033 (0.022)
Constant	45.744* (19.548)	27.467 (20.454)	35.443 (20.561)
Observations	7,263	6,394	6,394
R <sup>2</sup>	0.808	0.804	0.804
Adjusted R <sup>2</sup>	0.797	0.790	0.790
Residual Std. Error	68.591 (df = 6849)	70.142 (df = 5982)	70.078 (df = 5980)
F Statistic	69.971*** (df = 413; 6849)	59.520*** (df = 411; 5982)	59.371*** (df = 413; 5980)

\*p&lt;0.05, \*\*p&lt;0.01, \*\*\*p&lt;0.001

Model 1 tests the association between investments and business tax revenue, liquidity debt, and administrative capacity, respectively. In line with Hypothesis 1, it shows that investment decisions are strongly influenced by the size of revenues from the local business tax levied by districts. In the short-run, a €100 increase in per capita tax revenues leads to a €16.2 increase in per capita investments. The model specification, however, is dynamic. This implies that the estimated

coefficients of the independent variables merely serve to indicate the immediate response while the total impact over time is augmented by the long-run multiplier — provided by the coefficient of the LDV. In the case of business tax revenues, the total effect accumulates to €24.8. To estimate how this effect accumulates gradually over time, we perform dynamic simulations. Figure 4's upper-left quadrant shows how per capita investment changes when business tax revenues increase from the 10th to the 90th percentile between years 3 and 4, keeping all other variables constant. The simulation suggests that there is an immediate effect in response to the shock in year 4, but that the total effect accumulates over time until year 8.<sup>13</sup>



**Figure 4.** Impulse response functions of independent variables on per capita investment over time

Note: The impulse response functions are based on models 1 (business tax revenue, liquidity loans, capacity) and 2 (partisanship), respectively. The graphs for business tax revenue, liquidity loans, and capacity simulate the evolution

of the dependent variable over time in response to an increase of the respective variable from the 10<sup>th</sup> to the 90<sup>th</sup> percentile between periods *t*3 and *t*4. The graph for partisanship simulates a change from a right- to a left-wing party in government. All other variables are kept at their mean.

Model 1 further suggests that liquidity loans are negatively correlated with investment spending, as suggested by Hypothesis 2. However, the association is much smaller. In the short-run, a €100 increase in per capita liquidity loans only leads to a €0.7 decrease in per capita investments. In the long run, this accumulates to €1.07. Figure 4's upper-right quadrant visualizes the response function over time. It shows that investment decisions are somewhat influenced by the amount of debt that districts have but that this effect is much weaker than the effect of the business tax revenue. However, results from alternative regression models (see Table D.6 in the Online Appendix) including a measure of over-indebtedness show that the effect is substantial if debt is large. In the short-run, being overindebted reduces per capita investment by €12.5-€17. All other things equal, average-sized districts which are overindebted spend €2.4-€3.2 million less on investments in any given year.

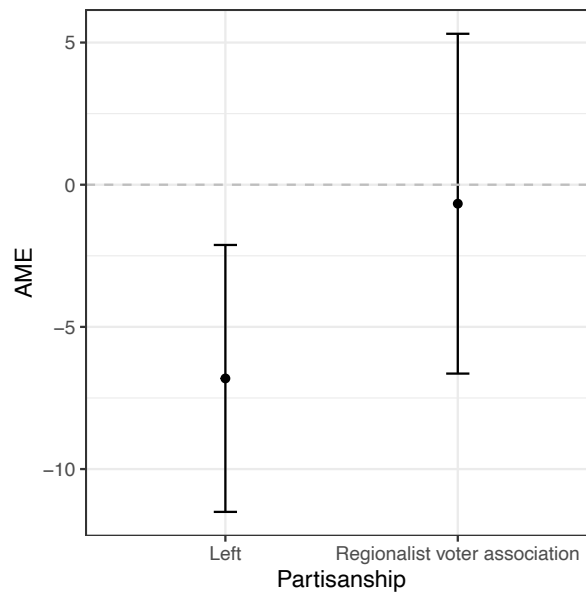
Finally, model 1 also includes administrative capacity as an independent variable, proxied by each districts' number of technical employees (per 1,000 capita). Results show that administrative capacity is positively related to investment (Hypothesis 3): one additional employee per 1,000 capita is associated with an instantaneous increase of €15.3 in investment spending. All other things equal, in an average-sized district, one additional employee is thus correlated with an increase in investment spending of €2,947 in any given year. In the long run, this effect is even larger as the effect accumulates over time, which is again visualized by the response function in Figure 4's lower-left quadrant.

Overall, model 1 suggests that local policymakers first and foremost need enough disposable fiscal resources from business taxes to finance investment spending but that, *ceteris paribus*, lower liquidity loans, and higher administrative capacity are also associated with higher investments.<sup>14</sup>

## 5.2 *The constrained partisanship of investment spending*

To analyse the effects of partisanship on investment spending, we turn to model 2 in Table 1. The model includes two additional dummy variables from our data set on the partisanship of local mayors and district administrators (which now covers the period from 1999 to 2018). Mayors from the right, primarily from the CDU/CSU, are used as the reference category. They are compared with left-wing mayors and regional voter associations. The results indicate that left-wing mayors,

on average, reduce public investments compared with the right. Controlling for all other variables, the instantaneous effect of left-wing mayors leads to a decline in per capita investments by €6.8, as shown in Figure 5. For the average German district, this means that left-wing mayors reduce investments by €1.31 million. Since the model is again dynamic due to the LDV, the total effect increases to €1.70 million for the average-sized district over time.



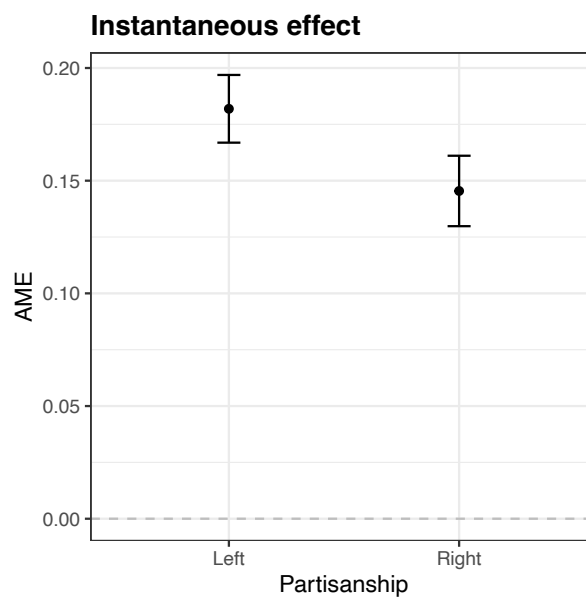
**Figure 5.** Average marginal effect of partisanship (left and regionalist voter association)

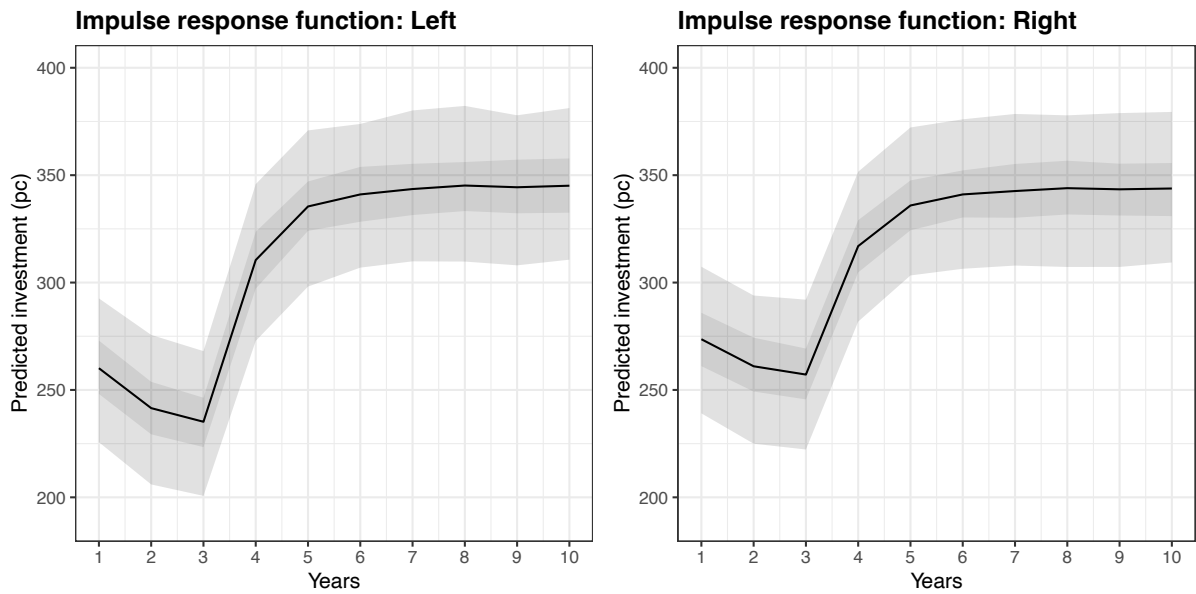
Note: The figure shows the instantaneous average marginal effect (AME) of partisanship on investment per capita based on model 2 in Table 1. It shows the effect of a mayor from a left-wing party or a regionalist voter association compared to a right-wing mayor (the reference category).

This is in line with Hypothesis 4 according to which right-wing mayors, who are generally more pro-business, invest more than mayors from the left. Although we cannot test this directly with our data, it seems that left-wing mayors are more likely to reduce investments under fiscal stress to preserve other, non-mandatory consumption spending, particularly voluntary local welfare services. Left-wing mayors draw their support from voters who are more likely to benefit from these kinds of expenditures, while the right is more likely to be influenced by local businesses. Business associations proactively demand the reorientation of public expenditures towards spending for public infrastructures that improve the capital stock and enhance the competitiveness of German industry.<sup>15</sup> This interpretation is also supported by additional analyses shown in the Online Appendix that use the fiscal balance as the dependent variable (Table E.3). In line with existing scholarship (Bogumil et al., 2014; Kunz, 2000: 344), our results show that partisanship is not correlated with the fiscal balance. Hence, our argument is strengthened by the fact that partisan

differences reflect political priorities in the composition of budgets (and here: voluntary expenditures) rather than their size. At low levels of fiscal capacity, conservatives neither increase debt nor cut investments; therefore, they are likely to cut elsewhere.

The unconditional effect of partisanship may, however, hide important contextual differences. Do parties invest differently depending on the fiscal situation of a given district? To answer this question, we include an interaction effect in model 3. Based on our theoretical expectations, the analysis focuses on interactions of partisanship with business tax revenues (as a strong predictor of local fiscal capacity). The coefficient on the interaction term indicates that left-wing mayors respond differently to increases in business tax revenues. To interpret this interaction effect, we plot the average marginal effect (AME) of business tax revenues for the left and the right in Figure 6's upper panel. The figure shows that both party blocs increase investments in response to an increase in revenues but that the left increases investment spending more. The AME for the left is 0.181 compared with 0.145 for the right.<sup>16</sup>





**Figure 6.** Average marginal effect of business tax revenue by partisanship

Note: The top panel of the figure shows the instantaneous average marginal effect (AMEs) of business tax revenue (per capita) by partisanship (left vs. right) based on model 3 in Table 1. The AME for the regional voter associations is shown in the appendix. The bottom panel of the figure shows the impulse response functions based on model 3 in Table 1. They simulate the evolution of the dependent variable over time in response to an increase of business tax revenues from the 10<sup>th</sup> to the 90<sup>th</sup> percentile between periods  $t-3$  and  $t-4$  for the right and left, respectively. All other variables are kept at their mean.

The dynamic simulations used to visualize the long-run effect over time confirm that the left increases investments more in response to increases in the business tax revenue than the right. The bottom panel of Figure 6 shows that the left invests less than the right at low levels of tax revenues (years 1-3); at high levels of revenues (year 4 to 10), however, there is no partisan difference. Left-wing mayors, therefore, increase investments more strongly in response to an increase in tax revenues, which is also indicated by the steeper slope in the response function for the left than the right.<sup>17</sup>

Overall, our results suggest that parties respond differently to the constraints imposed by Germany's fiscal federalism. The right is more willing to prioritize public investment than the left, and hence it invests more at low levels of revenue. As revenues increase, however, left mayors increase spending more strongly than right-wing mayors, and consequently, the difference between the left and the right vanishes at high levels of revenue.

## 6. Concluding discussion

Hidden behind the negative trend in public investment spending in many advanced economies are the budgetary decisions of subnational governments that are responsible for financing and

executing most investment. This holds especially true for federal systems like Germany where the significant drop in public investment has been driven mostly by the decline in local expenditures as well as growing divergence among local governments. Germany's low public investment expenditures thus have a distinct geographical pattern, with high levels of spending in the South and low levels in the North and the West.

Our article has shown that this variation is explained by a combination of structural constraints and partisan choices. First, our analysis shows how Germany's fiscal federalism can lead to sizable differences in subnational fiscal capacity, despite the system's widely discussed equalizing mechanisms. Discretionary spending depends on disposable revenues, which stem primarily from the capacity to raise revenues from local business taxes. This tax-raising capacity is distributed unequally across the country, primarily due to the clustering of 'winning' versus 'losing' industries. At the same time, Germany's fiscal federalism creates endemic pressures for poorer districts, as they carry larger burdens of local welfare spending. Some districts have relied on liquidity loans to finance a share of their current expenditures. This choice, however, constrains discretionary spending through direct (fiscal) and indirect (budget surveillance) mechanisms. Moreover, local governments' administrative capacity matters independently of fiscal conditions. Since local governments cannot easily expand their staff due to competition with private sector employers, previous reductions in personnel prevent the expansion of public investment spending even in those districts where budgetary conditions have improved.

Although the bulk of the variation in investment spending can be explained by these structural factors, our results further show that partisanship matters for local spending. In fact, partisanship matters particularly for public investment because this is a discretionary type of spending that competes with other voluntary expenditures. Due to data constraints, we are unable to analyse directly partisan choices over budget compositions. However, we provide indirect evidence that parties need to make fiscal trade-offs and that they decide differently on discretionary expenditures, based on their constituencies' priorities. While there are no discernible effects of partisanship on the overall size of local governments' budgets, we do find that partisanship affects local budgets when it comes to public investment.

This article's main empirical contribution lies in providing and analyzing of a novel data set that enabled us to trace and document growing inequalities in investment spending among Germany's local governments since the 1990s. Yet, two broader theoretical insights emerge from our analysis. First, while existing scholarship has analysed how intensified competition among local governments leads to growing territorial inequality in economic outcomes and public goods



provision within competitive federal systems, our findings highlight the emergence of worrying inequality patterns even within cooperative federal systems like Germany. In particular, within Germany's polity, the system of mandatory local welfare provision puts budgetary pressures on local governments in deprived areas, which are confronted with high and growing social expenditures. Additionally, poorer districts cannot increase their local revenues due to low fiscal autonomy and structural economic constraints. Without disposable fiscal resources, they cut public investment. Despite Germany's system of fiscal equalization, our article thus highlights that the country's asymmetric fiscal federalism has so far failed to address the mechanisms that reinforce inequality in this crucial spending domain.

Second, the article provides new evidence that partisanship matters in fiscal policymaking, even at the subnational level (e.g., Beramendi et al., 2015; Adolph et al., 2020; Garritzmann et al., 2021). According to our analysis, this is because different local decision-makers deal with constraints differently, especially in making choices over voluntary expenditures that matter to their constituencies. In contrast to previous research but in line with more recent studies, our results suggest that left local authorities deprioritize public investment in favour of welfare spending. Conservative local leaders appear more responsive to the preferences of businesses and the broader producer coalitions, demanding infrastructure spending to increase the competitiveness and attractiveness of local economic systems.

We should note, though, that further research is needed to strengthen and expand on our findings. First, while we are confident that the direction of causality is from fiscal and administrative constraints to spending choices in the short term, our models may have endogeneity problems in the mid to long run. In particular, in the long run, changes to the public capital stock can raise fiscal capacities, while persistent demand for more public investments can lead authorities to expand the technical capacities needed for their implementation. While we partially addressed these issues with control variables and two-way fixed effects, a more satisfactory solution would exploit non-endogenous changes in our independent variables, like fiscal windfalls. Second, we only included subsidies from federal and state governments as control variables in our analysis. Yet, investment subsidies are the primary mechanism for higher governments to address inequality in local public investment, and we aim to study the determinants of these subsidies in future work. Third, we are confident that partisan differences in public investment spending result from a trade-off logic, but we lack data on the composition of districts' voluntary spending to fully support this interpretation. Similarly, we also lack data to further disaggregate public investment to disentangle whether different parties prioritize different types of investment. Lastly, our operationalization of partisanship focuses on the role of mayors, who are powerful actors in local German politics

(Garmann, 2015; Fuchs, 2012; Heinelt and Egner, 2012). But elected chambers such as city councils also matter. Since council members and mayors are elected separately in most states, complex political constellations are possible in which the executive and legislative arms are not necessarily aligned. We started to explore these issues (see Online Appendix E) but more detailed data is necessary to better understand the underlying politics.

Despite these open questions for further research, our study has important policy implications. Citizens in left-behind regions struggle with deficient infrastructure and the under-provision of important public goods. As a matter of fact, regional economic divergence has been on the rise in Western Europe (Storper, 2018) and it is no coincidence that populism has become ever more rooted in these disadvantaged areas (Rodríguez-Pose, 2018). While many of the responses to these problems rely on targeted programmes and associated funding (often to be obtained through competitive bids), our study suggests the need for national governments to invest in local fiscal and administrative capacities that provide the basis for more targeted investment initiatives. If the distribution of funds for public investment is competitive and purely programme-based, districts with stronger local economies and more capacities are likely to further enhance their competitive advantage vis-à-vis areas that are already left behind. Over time, these regional inequalities and the politics of hard fiscal choices in disadvantaged areas may threaten economic as well as political stability and undermine the progressive potential inherent in policy ideas like the Green New Deal.

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<sup>1</sup> We focus here on physical capital, i.e., public investment in infrastructure and other physical assets.

<sup>2</sup> This excludes Germany's three city states (Hamburg, Berlin, and Bremen) that do not have independent districts.

<sup>3</sup> In this article, we use the terms local governments and districts (*Kreise*) interchangeably. Within Germany's states (*Länder*), districts are an intermediate level of government above municipalities (*Gemeinden*), but they are the lowest

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level for which data is available. Online Appendix A.1 provides a more detailed discussion of why we focus on districts and the implications of this choice.

<sup>4</sup> Local governments do not directly take part in the horizontal equalization scheme among the states. However, all German states (except for the city states Berlin, Bremen, and Hamburg) have an intra-state system aimed at equalizing local governments' spending capacities (Buettner and Holm-Hadulla 2008). The states provide local governments within their jurisdictions with grants needed to cover expenditures for delegated administrative tasks.

<sup>5</sup> We are grateful to an anonymous reviewer for pointing out that this definition of asymmetric federalism diverges from another one which emphasizes that powers or privileges of subnational units vary within the same multilevel system.

<sup>6</sup> Due to lack of disaggregated data, we treat local governments' investment as discretionary, although differences exist between domains in which authorities have generic obligations to invest (e.g., schools, cemeteries, and local streets) and those domains where investments are fully discretionary (e.g., public transport or sport facilities).

<sup>7</sup> Studies suggest that districts have more leverage to influence property tax revenues through changes in multipliers (Blesse et al. 2018). However, property taxes make up only a small share of revenues compared to business tax revenues and they are constrained by other factors, most notably the absence of up to date property valuations and homeowners' political opposition against tax increases.

<sup>8</sup> The case of Cologne illustrates this point. Based on the city's financial reports, the local government earmarked more than €1.5bn for investment spending over the years 2016–18 but only managed to execute investments for around €660 million due to a lack of administrative capacity.

<sup>9</sup> In the following, we use the term mayors to refer to both mayors (elected representatives in cities) and district-level administrators (elected representatives in rural districts).

<sup>10</sup> In most states, the head of the public administration has voting rights in the council and can veto council decisions, in others he/she is only responsible for implementation (Garmann, 2015). Moreover, local district administrators decide on the location of public policy and the employment and organization of the district's administration are at their full discretion. Mayors and local district administrations thus have a lot of influence over a district's investment decisions, which is reflected in survey evidence: 67.5 percent of surveyed council members in cities believe that mayors are the determining persons in budget policies (Seuberlich 2017: 182).

<sup>11</sup> Information on majorities in local legislatures is difficult to collect systematically, given that complex political coalitions are possible at the local level. However, in further analysis we also test whether the partisanship effect depends on whether or the majority in the legislature aligns with the partisanship of the mayor.

<sup>12</sup> We treat subsidies from higher levels of governments as a control variable for theoretical and methodological reasons. These subsidies are purpose-specific and often only pass through local governments' budgets. Yet, local governments need to commit to spending some of their own resources on specific investment projects under co-financing agreements. This introduces endogeneity concerns, as districts that invest more may be more likely to apply for subsidies.

<sup>13</sup> We cannot entirely exclude reverse causality. In the long run, public investments can also influence the tax revenues that districts can collect. However, the effect of business tax revenues on investment in any given year should still be larger than the reverse effect because annual investment comes on top of the existing capital stock. Existing capital stock is captured by fixed effects and it is likely correlated with our control variables, which control for changes over time that may influence fiscal capacity.

<sup>14</sup> All control variables are insignificant except the investment subsidies. By design these subsidies are strongly correlated with investments.

<sup>15</sup> The results also hold when we exclude the districts from Bavaria and Baden-Württemberg, which have historically been dominated by the right and have recently seen higher levels of investment (Online Appendix D).

<sup>16</sup> In line with expectations, Table E.2 and Figure E.3 in Appendix E show that partisanship does not matter for social security expenditure, which is mandatory.

<sup>17</sup> Although our analyses focus on mayors as the most important authorities at the local level, investment decisions could also be influenced by the local legislative. Appendix E show that our results are robust, even if we control for ideological alignment between the mayor and the largest party group in the legislative majority.