

Krause, Manuela; Potrafke, Niklas

Working Paper

The Real Estate Transfer Tax and Government Ideology: Evidence from the German States

CESifo Working Paper, No. 6491

Provided in Cooperation with:

Ifo Institute – Leibniz Institute for Economic Research at the University of Munich

Suggested Citation: Krause, Manuela; Potrafke, Niklas (2017) : The Real Estate Transfer Tax and Government Ideology: Evidence from the German States, CESifo Working Paper, No. 6491, Center for Economic Studies and ifo Institute (CESifo), Munich

This Version is available at:

<https://hdl.handle.net/10419/167477>

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Manuela Krause, Niklas Potrafke

Impressum:

CESifo Working Papers

ISSN 2364-1428 (electronic version)

Publisher and distributor: Munich Society for the Promotion of Economic Research - CESifo GmbH

The international platform of Ludwigs-Maximilians University's Center for Economic Studies and the ifo Institute

Poschingerstr. 5, 81679 Munich, Germany

Telephone +49 (0)89 2180-2740, Telefax +49 (0)89 2180-17845, email office@cesifo.de

Editors: Clemens Fuest, Oliver Falck, Jasmin Gröschl

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Abstract

In 2006, the reform of the German fiscal constitution realigned legislative powers between the federal and the state governments. Since 2007, the German state governments have been allowed to design real estate transfer tax rates. We investigate whether government ideology predicts the levels and increases in the real estate transfer tax rates; and show that leftwing and center governments were more active in increasing the real estate transfer tax rates than rightwing governments. The result is important because many voters were disenchanted with the policies and platforms of the established German parties in the course of the euro and refugee crisis. Disenchantment notwithstanding, the established political parties are still prepared to offer polarized policies.

JEL-Codes: D720, H200, H710, P160, R380.

Keywords: taxation, real estate transfer tax, reform, partisan politics, government ideology, German states.

Manuela Krause
Ifo Institute – Leibniz Institute for
Economic Research
at the University of Munich
Poschingerstrasse 5
Germany – 81679 Munich
krause@ifo.de

Niklas Potrafke
Ifo Institute – Leibniz Institute for
Economic Research
at the University of Munich
Poschingerstrasse 5
Germany – 81679 Munich
potrafke@ifo.de

May 2017

We would like to thank Thiess Buettner, Julie Cullen, Gordon Dahl, Marc Debus and Markus Tepe for helpful comments and Lisa Giani-Contini for proof-reading.

1. Introduction

Partisan theories hold that government ideology influences economic policy-making: leftwing governments are expected to implement more expansionary economic policies than rightwing governments (Hibbs 1977, Chappell and Keech 1986, Alesina 1987), and as a result, the size and scope of government is larger under leftwing than rightwing governments. A large size and scope of government includes, for example, pronounced public expenditure, taxes, debt and regulation of labour and product markets. Partisan politicians gratify the needs of their constituencies. Leftwing politicians are inclined to gratify the needs of low-income citizens (the working class), while rightwing politicians are inclined to gratify the needs of high-income citizens (traditionally the self-employed). Partisan politicians are therefore also expected not just to increase or decrease the size and scope of government; they will also design individual policy measures such as taxes to reward their constituencies. For example, leftwing governments are likely to tax capital to a larger extent than labour.

Many empirical studies have examined whether government ideology predicts individual economic policies.¹ Scholars use panel data for OECD countries and for states within federal countries, univariate time series for individual countries, as well as data for municipalities in particular, to derive causal effects (by employing, for example, Regression Discontinuity Designs – RDD – for close vote margins between leftwing and rightwing politicians). The evidence is mixed as to whether parties influence economic policy-making. For comprehensive surveys on partisan politics, see Potrafke (2016 and 2017).

Investigating whether parties matter in economic policy-making is interesting because in many industrialized countries, the platforms and policies of established parties have converged since the 1990s. It is conceivable that many voters are disenchanted with the policies of the established parties, desire more polarized policies, and in turn, have started to support new parties entering the political arena. Examples include the populist leftwing

¹ For a new study see, for example, Jäger (2017).

SYRIZA in Greece (in the 2000s the social democratic PASOK and the conservative New Democracy won a combined total of around 80 percent of the votes, while in 2015 PASOK and New Democracy won a combined total of just 30 percent of the votes) and the populist rightwing Freedom Party in Austria (the Freedom Party was founded many decades ago, but has won significant electoral support since the 1990s).

Another example is Germany. When he took office in 1998 the then chancellor Gerhard Schröder moved his Social Democratic Party (SPD) towards the middle of the political spectrum. His coalition government with the Greens implemented some fairly market-oriented policies such as liberalizing the labour market. As a result, the populist leftwing party DIE LINKE entered the political arena. Since the mid-2000s, the voting share of the leftwing SPD has decreased in federal elections (see, for example, Debus 2008). The rightwing Christian Conservative Union (CDU) moved towards the middle of the political spectrum when it formed a grand coalition with the SPD in 2005. Economic policy positions in particular became far less market-oriented than at the beginning of the 2000s. Bailout policies in the course of the euro crisis diluted the economic policy platform of the CDU. A new populist rightwing party, the Alternative for Germany, was successful in many German state elections in 2015 and 2016. In the course of the refugee crisis in 2015, the CDU pursued a liberal immigration policy – alienating many core conservative voters. A precondition for the electoral success of the SPD and the CDU would seem to be more polarized policies.

There have been studies showing that the SPD and the CDU, being part of leftwing and rightwing governments, pursued different policies in the German states. For instance, rightwing governments hired more policemen, were more active in introducing tuition fees, spent more on universities, and promoted greater economic freedom than leftwing governments (Tepe and Vanhuysse 2013, Kauder and Potrafke 2013, Oberndorfer and Steiner 2007, Potrafke 2011, Potrafke 2013). By contrast, public debt policies hardly differed between leftwing and rightwing state governments (Jochimsen and Nuscheler 2010,

Jochimsen and Thomasius 2014, Potrafke et al. 2016).² Experts have not yet examined ideology-induced tax policies in the German states. The reason is that German state governments have had basically no authority to design tax policies.³ Empirical tests of ideology-induced policies in the German states require, of course, examining policies that are influenced by the state governments (and not determined by the federal government).

In the course of the reform of the German fiscal constitution in 2006, the allocation of rights and duties between the federal and the state governments was realigned.⁴ German state governments were allowed to design real estate transfer tax rates. The real estate transfer tax thus became the first tax for which the state governments have the authority to design the tax rates.⁵ Some state governments began to increase the real estate transfer tax rate immediately in 2007. Other states have not increased the tax rate since then. Allowing the German state governments to design the real estate transfer tax rates provides an excellent laboratory for investigating the prediction of partisan theories.

The real estate transfer tax is likely to influence citizens who own property – usually high-income citizens – and therefore seems suitable for redistributing income from the rich to the poor. Rightwing politicians are generally more hesitant to increase tax rates and view the purchase of real estate as worthy of support.⁶ Leftwing politicians, by contrast, are more in favour of redistribution. The hypotheses to be tested empirically are: leftwing governments are more active in increasing real estate transfer tax rates than rightwing governments, and as a result, real estate transfer tax rates are higher under leftwing than rightwing governments. We examine these hypotheses by case study evidence and descriptive statistics. We use state-

² On ideology-induced policies at the local level see, for example, Roesel (2017).

³ See Herwartz and Theilen (2014) for the extent to which state government ideology predicted efforts to collect tax revenues (for taxes designed at the federal level).

⁴ Hildebrandt (2015) portrays the implications of the federalism reforms on the state fiscal policies.

⁵ Scholars investigate the economic consequences of the real estate transfer tax in Germany. Buettner (2017) examines welfare effects of the real estate transfer tax. Buettner and Krause (2017a, b) examine the extent to which the fiscal equalization scheme affects states' tax policy. Fritzsche and Vandrei (2016) investigate how the real estate transfer tax influences the number of real estate transactions in Germany. Petkova and Weichenrieder (2017) investigate the effect of the real estate transfer tax on prices of single-family houses and apartments.

⁶ Studies on ideology-induced tax policies include Angelopoulos et al. (2012), Beramendi and Rueda (2007), Cusack and Beramendi (2006), Osterloh and Debus (2012).

year data for the 16 German states over the period 2007-2017. As we could not overcome the potential endogeneity of the government ideology variable when regressing real estate transfer tax rates on government ideology, we cannot estimate causal effects but elaborate on correlations.

2. The German real estate transfer tax

The German real estate transfer tax has to be paid on the price of the real estate determined in the contract between the selling and the purchasing party. The German real estate transfer tax law describes that both seller and buyer are held responsible for the liability of the tax (§ 13 Nr. 2 GrEStG). The amount of tax will be transferred to the authorities by the contracting party that has been declared the taxpayer in the contract, which is usually the buyer of the real estate. Purchases of less than 2,500 euros or real estate transfers due to inheritance or donation are exempt from the tax (§ 3 GrEStG).

Since 2006, 14 out of the 16 states have increased real estate transfer tax rates to levels of up to 6.5 percent (Brandenburg, North Rhine-Westphalia, Saarland, Schleswig-Holstein, Thuringia). Bavaria and Saxony are the only two states where the tax rate remains at its pre-reform level of 3.5 percent. The real estate transfer tax revenue collected by the federal states has risen from 4.8 in 2005 to 11.25 billion Euro in 2015, amounting to an increase of 135 percent according to the German Ministry of Finance. In 2015, the real estate transfer tax was the most important state tax. The share of the real estate transfer tax with regard to the overall state taxes, whose amounts are exclusively for the states, was 55.3 percent of overall state taxes. However, the real estate transfer tax amounts to only 4.2 percent of the total amount of taxes received by federal states, which also includes transfers from the German federal government to the states.

Comparing real estate transfer taxes internationally remains difficult, because the laws of tax exemption and the taxable bases differ across countries. For example, in contrast to

Germany, some countries design real estate transfer rates on constituent real estate, while newly-built real estate applies to the value-added taxation. Moreover, in Germany, the tax base is taxed by a fixed rate differing across states. In Australia and Cyprus, for example, the real estate transfer tax rate increases progressively with the value of the real estate and is determined at the national level. In any event, real estate transfers tax rates are fairly high in Germany compared to other countries (Bechtoldt et al. 2014).

3. Case study evidence

Table 1 shows the real estate transfer tax rates and the ideology of the government implementing tax increases in the individual states. In Baden-Wuerttemberg, there was a rightwing government for many decades (a grand coalition over the period 1992-1996 being an exception). In spring 2011, however, a leftwing Green-SPD government came into power which increased the real estate transfer tax rate from 3.5 percent to 5 percent as of 5 November 2011. In Bavaria, there has been a rightwing government since the 1950s. Bavaria is one of the two German states in which the government has not increased the real estate transfer tax rate. The leftwing government in the city state of Berlin increased the real estate transfer tax rate from 3.5 percent to 4.5 percent as of 1 January 2007. The grand coalition (SPD and CDU) increased the real estate transfer tax rate to 5 percent as of 1 April 2012 and to 6 percent as of 1 January 2014. In Brandenburg, the leftwing government increased the real estate transfer tax rate to 5 percent as of 1 January 2011 and to 6.5 percent as of 1 July 2015. In the city state of Bremen, the leftwing SPD has been in power since the 1950s in manifold governments (in single party governments when having the absolute majority of the seats in parliament, in center governments with the conservative CDU, or in leftwing coalitions with the Green party, and in a coalition with the Green party and the market-oriented FDP). The grand coalition (SPD and CDU) did not change the real estate transfer tax rate in the years 2007, 2008 and 2009 in Bremen. By contrast, the leftwing SPD-Green government increased

the real estate transfer tax rate from 3.5 percent to 4.5 percent as of 1 January 2011 and to 5 percent as of 1 January 2014 while in office. In Hamburg, the center CDU-Green government increased the real estate transfer tax rate to 4.5 percent as of 1 January 2009. The SPD-led government, however, has not further increased the real estate transfer tax rate since 2012. In Hesse, the rightwing government did not change the real estate transfer tax rate for six years, and then increased the real estate transfer tax rate to 5 percent as of 1 January 2013. The center government (CDU and Greens) increased the real estate transfer tax rate further to 6 percent as of 1 August 2014. In Mecklenburg-Western Pomerania, the grand coalition increased the real estate transfer tax rate to 5 percent as of 1 July 2012. In Lower Saxony, the rightwing government increased the real estate transfer tax rate to 4.5 percent as of 1 January 2011; the leftwing government increased the real estate transfer tax rate to 5 percent as of 1 January 2014.

North Rhine-Westphalia is another prime example for partisan politics. The rightwing government (which did not change the real estate transfer tax rate) was voted out of office in 2010. The new leftwing government increased the real estate transfer tax rate to 5 percent as of 1 October 2011 and to 6.5 percent as of 1 January 2015. In Rhineland-Palatinate, the leftwing government did not increase the real estate transfer tax rate for a long time, and finally increased it to 5 percent as of 1 March 2012. In the Saarland, the rightwing government also did not increase the real estate transfer tax rate for a long time. The new mixed coalition (CDU, FDP and Greens) increased the tax rate to 4.5 percent as of 1 January 2012 and to 5.5 percent as of 1 January 2013; the grand coalition (CDU and SPD) increased the real estate transfer tax rate to 6.5 percent as of 1 January 2015. The Saarland and Bremen have the largest debt-to-GDP ratios of the German states. It is conceivable that the state governments in the Saarland and Bremen believed they could increase tax revenues and reduce the debt-to-GDP ratio (to better fulfill the requirement of the debt brake) by increasing the real estate transfer tax rates. The real estate transfer tax rate was not changed and

remained at 3.5 percent in Saxony. The conservative CDU has reigned in Saxony for a long time: till 2012 in a rightwing government (with the FDP) and since 2012 in a grand coalition (with the SPD). In Saxony-Anhalt, the grand coalition (CDU and SPD) increased the real estate transfer tax rate to 4.5 percent as of 2 March 2010 and to 5 percent as of 1 March 2012. In Schleswig-Holstein, the rightwing government did not increase the real estate transfer tax rate for a long time and finally increased the tax rate to 5 percent as of 1 January 2012. The newly elected leftwing government (SPD, Greens and the Danish minority party) increased the real estate transfer tax rate to 6.5 percent as of 1 January 2014. In Thuringia, the grand coalition increased the tax rate to 5 percent as of 7 April 2011; and the leftwing government (LINKE, SPD, and Greens) increased the real estate transfer tax rate to 6.5 percent as of 1 January 2017.

4. Empirical analysis

4.1 Unconditional correlations

The real estate transfer tax was increased 26 times over the period 2007-2017: three times by a rightwing government, eleven times by a center government and twelve times by a leftwing government.⁷ No state government decreased the tax rate over the period 2007-2017. We use data on increases in the real estate tax rate from state law and ordinance gazettes, in which the states typically codify adjustments in the tax rate of the real estate transfer tax.

The average increase in the real estate tax rate was 0.09 percentage points under rightwing governments, 0.18 percentage points under center governments and 0.22 percentage points under leftwing governments (Figure 1). T-tests on means show that increases under rightwing governments were significantly different from increases under center and leftwing governments (statistically significant at the 10 percent level). The results thus indicate that

⁷ A leftwing government is SPD (single party government), SPD/Greens, Greens/SPD, SPD/LINKE, LINKE/SPD/Greens. A center government is CDU/SPD, SPD/CDU, CDU/Greens, CDU/Greens/FDP. A rightwing government is CDU or CSU (single party government) and CDU/FDP. We follow related studies such as Potrafke et al. (2016) in coding the types of government.

rightwing governments increased real estate transfer tax rates to a lower extent than center and leftwing governments. The average real estate transfer tax rates were thus lower under rightwing governments than under center and leftwing governments (statistically significant at the 1 percent level). In fact, the average real estate transfer tax rate was 3.6 percent under rightwing governments, 4.5 percent under center governments and 4.9 percent under leftwing governments (Figure 2). The averaged tax rates and t-tests are computed for a sample of 176 observations (annual data for 16 states over the period 2007-2017). The descriptive statistics in Figure 2 thus consider years in which governments did not increase the real estate transfer tax rates – which was probably intended to keep the size of government small.

Ideology-induced effects may well differ across the East German and West German states (e.g., Potrafke 2013, Tepe and Vanhuysse 2014). In the West German states, the average increase in the real estate tax rate was 0.11 percentage points under rightwing governments, 0.26 percentage points under center governments and 0.18 percentage points under leftwing governments (Figure 3). T-tests on means show that increases under rightwing governments were not significantly different from increases under their center and leftwing counterparts. The average real estate transfer tax rate for the sample of the West German states was 3.6 percent under rightwing governments, 5.1 percent under center governments and 4.8 percent under leftwing governments (Figure 4). The sample includes 121 observations from 11 states. T-tests on means show that the real estate transfer tax rates were significantly lower under rightwing than under leftwing and center governments (statistically significant at the 1 percent level).

In the East German states, the average increase in the real estate tax rate was 0 percentage points under rightwing governments, 0.13 percentage points under center governments and 0.41 percentage points under leftwing governments (Figure 5). Rightwing governments in the East German states thus did not increase the real estate tax rate. T-tests on means show that increases under leftwing governments were significantly higher than

increases under their center and rightwing counterparts (statistically significant at the 5 percent level). The average real estate transfer tax rate in the East German states was 3.5 percent under rightwing governments, 4.2 percent under center governments and 5.3 percent under leftwing governments (Figure 6). The sample includes 55 observations from five states. Real estate transfer tax rates in the East German states were significantly lower under rightwing than under center and leftwing governments (statistically significant at the 1 percent level).

By comparing the average tax rates in the East German and West German states – conditioned on government ideology – the results seem to indicate that the average real estate transfer tax rates for each type of government did not differ much between West and East German states. In fact, the average tax rates under leftwing governments were statistically significant higher in East German states than in West German states (significant at the 5 percent level). Under center governments, the average tax rates were statistically significant higher in West German states than in East German states (significant at the 1 percent level). Under rightwing governments the tax rates did not turn out to differ statistically significant between West and East German states. Inferences showing that leftwing and center governments were more active in increasing the real estate transfer tax rates than rightwing governments do not change when we include Berlin in the sample of the East German states and exclude it therefore in the sample of the West German states.

We also examine the results for the thirteen non-city states in Germany (the city states are Berlin, Bremen and Hamburg). In the non-city states, the average real estate transfer tax rate was 5.1 percent under leftwing governments, 4.5 percent under center governments and 3.6 percent under rightwing governments. T-tests on means show that real estate transfer tax rates were significantly different under rightwing than under center and leftwing governments (statistically significant at the 1 percent level).

4.2 Conditional correlations

We investigate the correlation between government ideology and real estate transfer tax rates conditional to other variables. The baseline panel-data model has the following form:

$$\begin{aligned} Tax\ rate_{it} = & \beta\ Government\ ideology_{it-1} + \gamma\ Voter\ preferences_{it} + \delta\ Debt\ per\ capita_{it-1} \\ & + \varepsilon\ Combined\ taxes\ per\ capita_{it-1} + \eta_i + \tau_t + u_{it} \end{aligned}$$

$$\text{with } i=1,\dots,16; t=1,\dots,11$$

where $Tax\ rate_{it}$ measures the tax rate of the real estate transfer tax in state i in year t . $Government\ ideology$ measures ideology-induced policy-making and assumes the value one when a leftwing government was in office, the value 0.5 for a center government, and the value zero for a rightwing government (e.g., Kauder and Potrafke 2013). We use the government variable measured in period $t-1$ because decisions on the tax rates are usually taken in the year before the adjustment takes place.⁸ We use the variable $Voter\ preferences$, which measures the share of rightwing voters (CDU/CSU and FDP) in federal elections. We do so to disentangle the effect of government ideology and voter preferences on tax policy (see, e.g. Elinder and Jordahl 2013, Freier and Odendahl 2015 and Liang 2013). We use the vote shares of the last federal election for each state. It is conceivable that governments use the possibility to increase tax rates for budget consolidation. We therefore include a variable $Debt-per-capita$, which measures the amount of debt per capita of the respective state from the previous year. The lion's share of the states' tax revenues are combined federal and states taxes (e.g., income taxes, corporate taxes and the value added taxes). The state governments have basically no authority to design the tax policies of the combined federal and states taxes and may thus have an incentive to increase the real estate transfer tax rate when the share of the combined federal and states taxes decreases. We therefore include the amount of the

⁸ In some cases the decision on and the adjustment of the tax rate took place in the same year. We always consider the government which decided on the tax adjustment.

combined federal and states taxes per capita as another explanatory variable (*Combined taxes per capita*). The *Debt-per-capita* and *Combined taxes per capita* are measured in period t-1. We also include fixed time and fixed state effects. We estimate the fixed-effects model with standard errors robust to heteroskedasticity (Huber/White/sandwich standard errors – see Huber 1967 and White 1980).

Table 2 shows descriptive statistics of the individual variables. Table 3 shows the correlation coefficients between our variables. Government ideology and the real estate transfer tax rates are positively correlated (the coefficient of correlation is 0.499) which is significant at the 1 percent level. The real estate transfer tax rates are also positively correlated with the debt-per-capita variable and the combined taxes per capita variable but negatively with the variable measuring the share of rightwing voters in federal elections.

Table 4 shows the regression results excluding fixed state effects. In discussing the results, we focus on our preferred specification including all control variables in column (4). The coefficient of the *Government ideology* variable is positive and statistically significant at the 1 percent level. The tax rate of the real estate transfer tax is 0.50 percentage points higher under leftwing than under rightwing and center governments. All the other control variables do not turn out to be statistically significant. Based on the regression results, Figure 7 shows the average tax rates under leftwing, center and rightwing governments conditional to voter preferences (the vote shares for the CDU/CSU and the FDP in federal elections), the debt-per-capita ratio, the combined taxes per capita ratio in the states and fixed time effects.

In Table 5 we include fixed state effects. The coefficient of the government ideology variable is positive and statistically significant at the 5 percent level indicating that the real estate transfer tax rate is 0.52 percentage points higher under leftwing than under rightwing and center governments. The coefficients of the *Debt per capita* variable and the *Combined taxes per capita* variable do not turn out to be statistically significant. Based on the regression results, Figure 8 shows the average tax rates under leftwing, center and rightwing

governments conditional to voter preferences, the debt-per-capita ratio, the combined taxes per capita ratio and fixed time and state effects.

We also investigate the correlation between government ideology and the first difference in the real estate transfer taxes conditioned on other variables. The conditional correlation between government ideology in period $t-1$ and the first difference in the real estate transfer tax is positive and statistically significant at the 10 percent level when we condition on the vote shares for the CDU/CSU and the FDP in federal elections, the debt-per-capita-ratio, the combined taxes per capita ratio and time fixed effects. Inferences do not change when we include fixed state effects.

4.3 Robustness tests

We also condition the correlation between government ideology and the real estate transfer tax rate on demographic variables by taking into account the share of young citizens up to 20 years and the share of old citizens above 60 years. Firstly, by excluding fixed state effects but including fixed time effects, the correlation between the government ideology variable and the real estate transfer tax is positive and statistically significant at the 1 percent level. When fixed state effects are also included, the correlation between the government ideology variable and the real estate transfer tax remains positive and statistically significant at the 5 percent level. We also include the share of leftwing voters (SPD, Greens, Left Party and SPD, Greens) instead of the share of rightwing voters. Inferences do not change regarding the government ideology variable. The results show that government ideology was significantly correlated with the real estate transfer tax rates also when conditioning on other variables.

We also examine the increases in the real estate transfer tax by the type of government on the basis of cabinet periods (Schmitt 2015). There were 35 different full cabinet periods between 2007 and 2017. The average increase in the real estate transfer tax is 0.31 percentage

points lower under rightwing governments than under leftwing governments, but the difference does not turn out to be statistically significant.

5. Conclusion

In 2006, the German fiscal constitution was reformed. Since 2007, the German state governments are allowed to design real estate transfer tax rates (the tax rate was 3.5 percent at the end of 2006). The reform lends itself to an examination because German state governments have had hardly any tools for designing tax rates. The real estate transfer tax revenues amount to about two percent of overall tax revenue. Allowing the German state governments to design the rates of the real estate transfer tax since 2007 is an excellent case in point to investigate whether government ideology predicts economic policy-making. The real estate transfer tax is likely to influence high-income citizens (often voters of rightwing parties) to a larger extent than low-income citizens (often voters of leftwing parties). We focus on case study evidence and descriptive statistics in the 16 German states because we cannot estimate an econometric model to derive causal effects in the small sample. The results show that rightwing governments were less active in increasing the real estate transfer tax rates than leftwing and center governments. Over the period 2007-2017, the real estate transfer tax was increased 26 times: three times under rightwing governments, eleven times under center governments and twelve times under leftwing governments. The average tax rate was 3.6 percent under rightwing governments, 4.5 percent under center governments and 4.9 percent under leftwing governments. Bavaria and Saxony, two German states with quite conservative electorates (and governments) did not increase the real estate transfer tax rate over the period 2007-2017. In Baden-Wuerttemberg and North Rhine-Westphalia the newly elected leftwing governments increased the real estate transfer tax rates when following rightwing governments. We also examine the correlation between government ideology and real estate transfer tax rates conditional to other variables. The results show that government

ideology is correlated with the real estate transfer tax rates when taking into account other variables such as fixed state effects, public debt per capita, combined federal and states taxes per capita and demographic variables.

The results are interesting because government ideology retired to the background at the federal level. There has hardly been any difference in the policies pursued by CDU- and SPD-led federal governments since the 1990s (e.g. Potrafke 2012, Kauder and Potrafke 2016). Many voters were disenchanted by the catch-all policies of the CDU and SPD; in the early 2000s the populist leftwing party (DIE LINKE) entered the political arena and gained some electoral support. In 2015 and 2016, the populist rightwing Alternative for Germany was successful in many state elections. With polarized tax policies of CDU/CSU and SPD-led state governments, voters may well find the established parties attractive, rather than supporting parties at the fringe of the political spectrum.

We have conjectured that voters of leftwing parties are more inclined to increase the real estate transfer tax rates than voters of rightwing parties. Future research may well compile survey evidence describing the nexus between political ideologies and voters' preferences regarding the real estate transfer tax.

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Table 1: Real estate transfer tax rates in the German states. 2007-2017. Type of government pursuing the tax rate increases.

State	Tax rate since 1998 (in percent)	Tax rate increase since	To a tax rate of (in percent)	Type of government implementing the tax rate increase
Baden-Wuerttemberg	3.5	05.11.2011	5.0	leftwing
Bavaria	3.5	No increase		(rightwing)
Berlin	3.5	01.01.2007	4.5	leftwing
		01.04.2012	5.0	center
		01.01.2014	6.0	center
Brandenburg	3.5	01.01.2011	5.0	leftwing
		01.07.2015	6.5	leftwing
Bremen	3.5	01.01.2011	4.5	leftwing
		01.01.2014	5.0	leftwing
Hamburg	3.5	01.01.2009	4.5	center
Hesse	3.5	01.01.2013	5.0	rightwing
		01.08.2014	6.0	center
Mecklenburg-Western Pomerania	3.5	01.07.2012	5.0	center
Lower Saxony	3.5	01.01.2011	4.5	rightwing
		01.01.2014	5.0	leftwing
North Rhine-Westphalia	3.5	01.10.2011	5.0	leftwing
		01.01.2015	6.5	leftwing
Rhineland-Palatinate	3.5	01.03.2012	5.0	leftwing
Saarland	3.5	01.01.2012	4.5	center
		01.01.2013	5.5	center
		01.01.2015	6.5	center
Saxony	3.5	No increase		(rightwing and center)
Saxony-Anhalt	3.5	02.03.2010	4.5	center
		01.03.2012	5.0	center
Schleswig-Holstein	3.5	01.01.2012	5.0	rightwing
		01.01.2014	6.5	leftwing
Thuringia	3.5	07.04.2011	5.0	center
		01.01.2017	6.5	leftwing

Table 2: Descriptive statistics

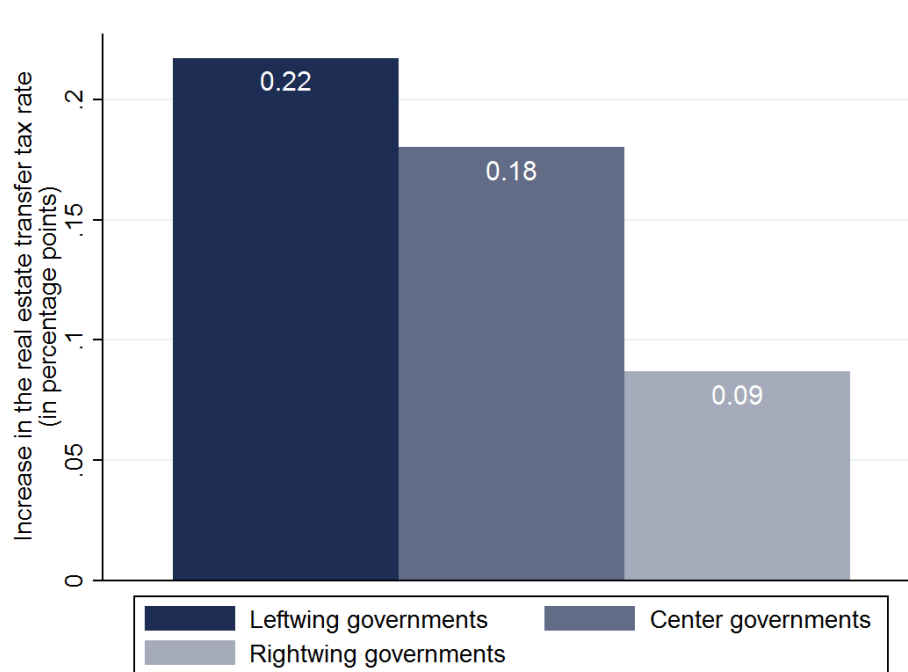
	Obs.	Mean	Std. Dev.	Min	Max
Real estate transfer tax rate	176	4.418	0.958	3.5	6.5
Government ideology (leftwing)	176	0.565	0.400	0	1
Share of rightwing voters (CDU/CSU and FDP) in federal elections	176	43.141	6.929	27.5	58.7
Debt per capita	176	9768.18	6654.57	1746.62	35089.3
Combined taxes per capita	176	2240.08	292.484	1770.83	3238.64
Share of leftwing voters (SPD, Greens and Left) in federal elections	176	48.915	7.840	32.2	67.5
Share of young citizens (younger than 21)	176	31.936	3.793	25.218	38.6
Share of old citizens (older than 60)	176	49.580	5.435	40.1	64.4

Table 3: Correlation between the main variables

	Real estate transfer tax rate	Government ideology	Voter preferences	Share of rightwing voters (CDU/CSU and FDP) in federal elections	Combined taxes per capita	Share of leftwing voters (SPD, Greens and Left) in federal elections	Share of young citizens (younger than 21)	Share of old citizens (older than 60)
Real estate transfer tax rate	1							
Government ideology (leftwing)	0.499***	1						
Share of rightwing voters (CDU/CSU and FDP) in federal elections	-0.185**	-0.352***	1					
Debt per capita	0.292***	0.504***	-0.599***	1				
Combined taxes per capita	0.475***	0.124	0.150*	0.000	1			
Share of leftwing voters (SPD, Greens and Left) in federal elections	-0.073	0.218***	-0.901***	0.553***	-0.359***	1		
Share of young citizens (younger than 21)	-0.049	-0.116	0.623***	-0.144*	0.065	-0.512***	1	
Share of old citizens (older than 60)	0.248***	-0.024	0.040	-0.201**	-0.049	-0.176**	-0.223***	1

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

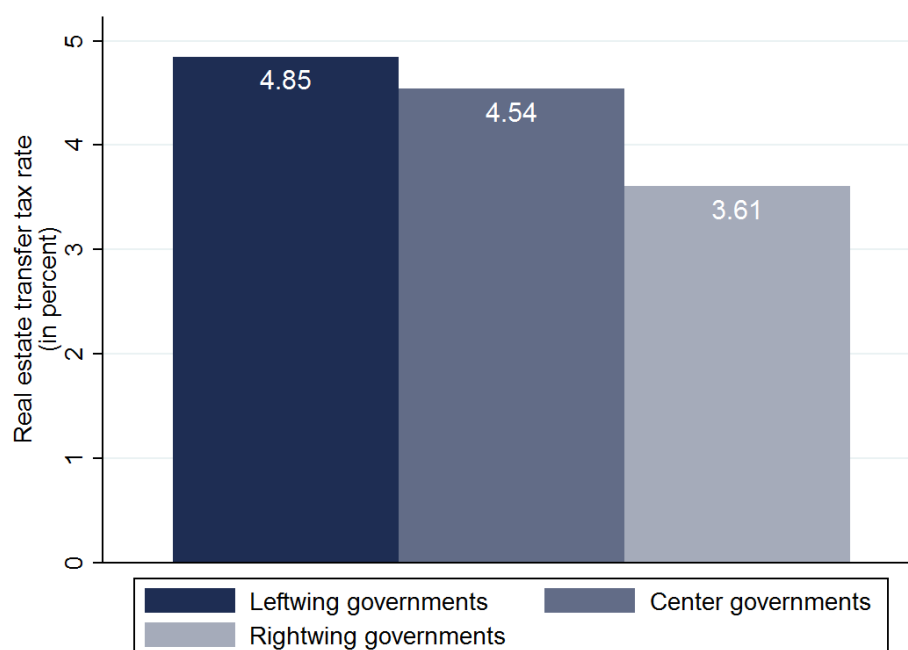
Figure 1: Increases in the real estate transfer tax rates by type of governments (2007-2017)



Source: State law gazettes; own calculation

The averaged increases in the tax rates and t-tests are computed for a sample of 176 observations (annual data for 16 states over the period 2007-2017).

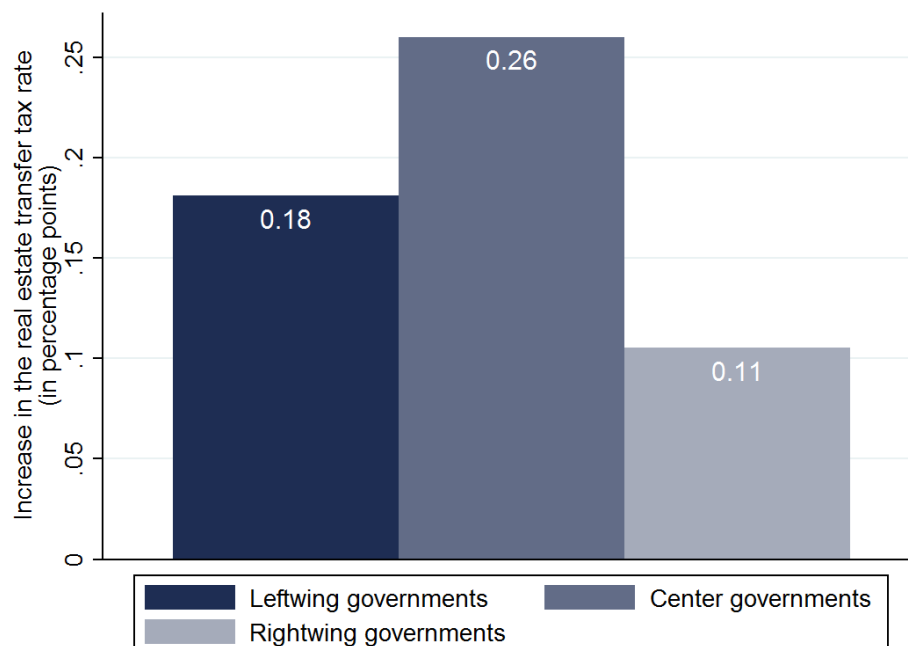
Figure 2: Real estate transfer tax rates by type of governments (2007-2017)



Source: State law gazettes; own calculation

The averaged tax rates and t-tests are computed for a sample of 176 observations (annual data for 16 states over the period 2007-2017).

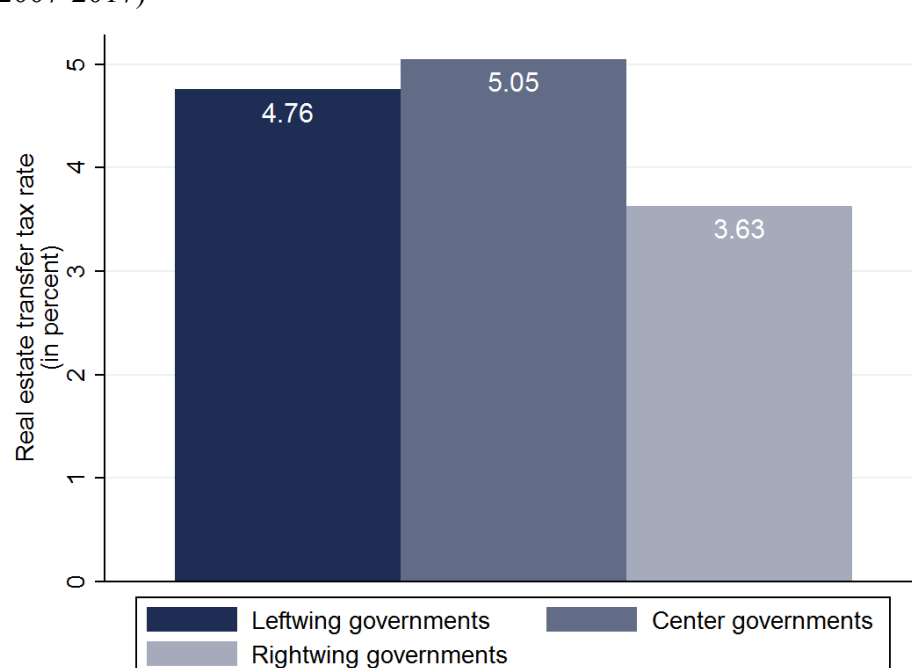
Figure 3: Increases in the real estate transfer tax rates for the West German states by type of governments (2007-2017)



Source: State law gazettes; own calculation

The averaged increases in the tax rates and t-tests are computed for a sample of 121 observations (annual data for 11 states over the period 2007-2017). The sample includes Baden-Wuerttemberg, Bavaria, Berlin, Bremen, Hamburg, Hesse, Lower Saxony, North Rhine-Westphalia, Rhineland-Palatinate, Saarland and Schleswig-Holstein.

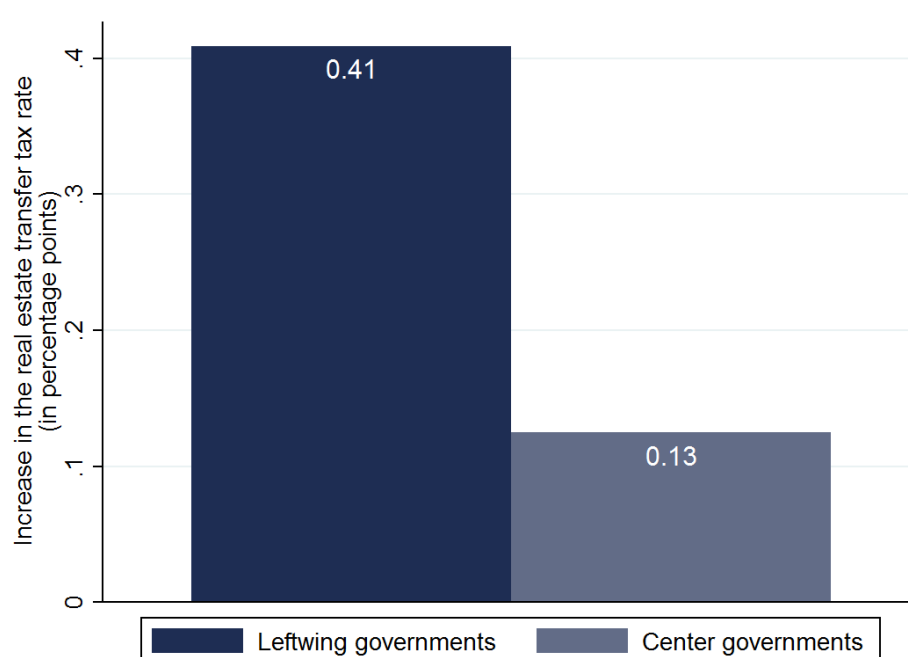
Figure 4: Real estate transfer tax rates for the West German states by type of governments (2007-2017)



Source: State law gazettes; own calculation

The averaged tax rates and t-tests are computed for a sample of 121 observations (annual data for 11 states over the period 2007-2017). The sample includes Baden-Wuerttemberg, Bavaria, Berlin, Bremen, Hamburg, Hesse, Lower Saxony, North Rhine-Westphalia, Rhineland-Palatinate, Saarland and Schleswig-Holstein.

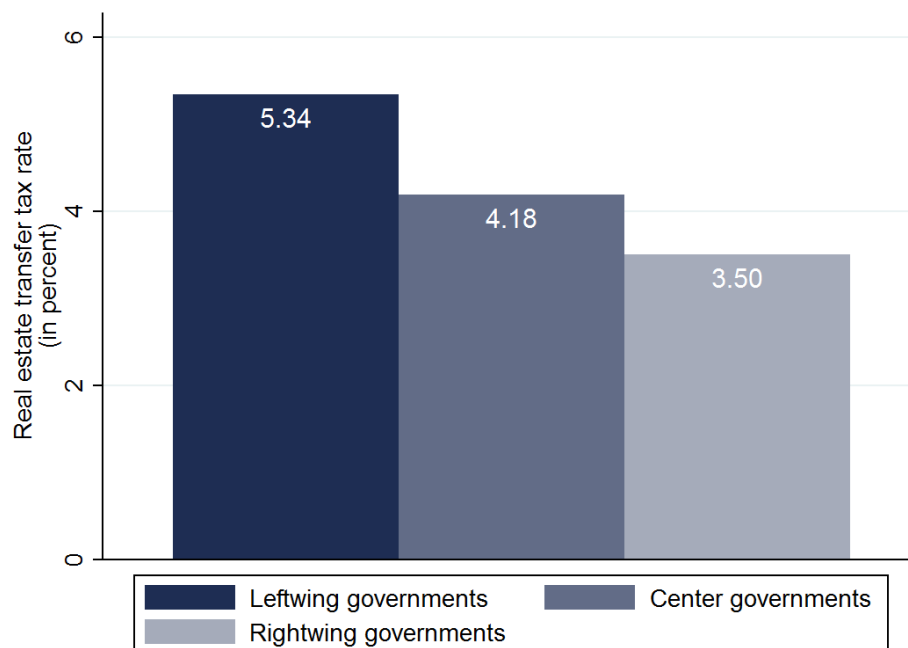
Figure 5: Increases in the real estate transfer tax rates for the East German states by type of governments (2007-2017)



Source: State law gazettes; own calculation

The averaged increases in the tax rates and t-tests are computed for a sample of 55 observations (annual data for 5 states over the period 2007-2017). The sample includes Brandenburg, Mecklenburg-Western Pomerania, Saxony, Saxony-Anhalt and Thuringia. Rightwing governments did not increase the real estate transfer tax rates.

Figure 6: Real estate transfer tax rates for the East German states by type of governments (2007-2017)



Source: State law gazettes; own calculation

The averaged tax rates and t-tests are computed for a sample of 55 observations (annual data for 5 states over the period 2007-2017). The sample includes Brandenburg, Mecklenburg-Western Pomerania, Saxony, Saxony-Anhalt and Thuringia.

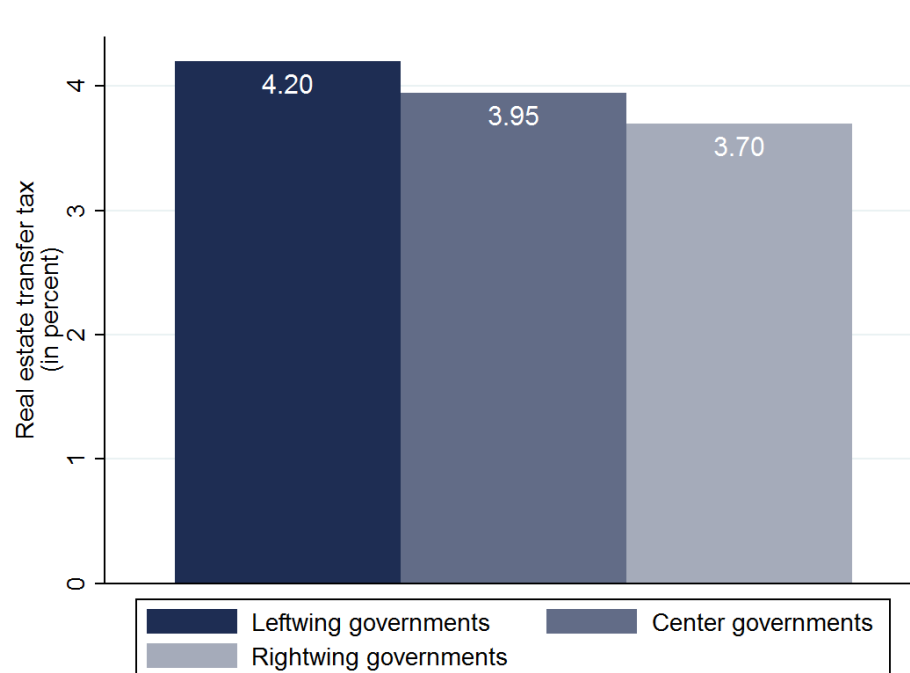
Table 4: Regression results – **excluding fixed state effects**.

Dependent variable: Real estate transfer tax rate. Fixed-effects model with standard errors robust to heteroskedasticity (Huber/White/sandwich standard errors)

	(1)	(2)	(3)	(4)
Government ideology (leftwing)	0.619*** (0.224)	0.548*** (0.216)	0.519*** (0.198)	0.508*** (0.188)
Share of rightwing voters (CDU/CSU and FDP) in federal elections		-0.010 (0.011)	-0.001 (0.017)	-0.002 (0.015)
Debt per capita			0.000 (0.000)	0.000 (0.000)
Combined taxes per capita				-0.000 (0.000)
Fixed time effects	Yes	Yes	Yes	Yes
Fixed state effects	-	-	-	-
Observations	176	176	176	176
Groups	16	16	16	16
R ² within	0.727	0.725	0.727	0.731
R ² between	0.194	0.253	0.266	0.378
R ² overall	0.621	0.631	0.643	0.671

Standard errors in parentheses; * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Figure 7: Conditional correlations - real estate transfer tax rates by type of governments (2007-2017)



The figure shows averaged tax rates conditional to the share of rightwing voters (CDU/CSU and FDP) in federal elections, the debt-per-capita ratios, the combined taxes per capita ratios (all evaluated at the mean) and fixed time effects.

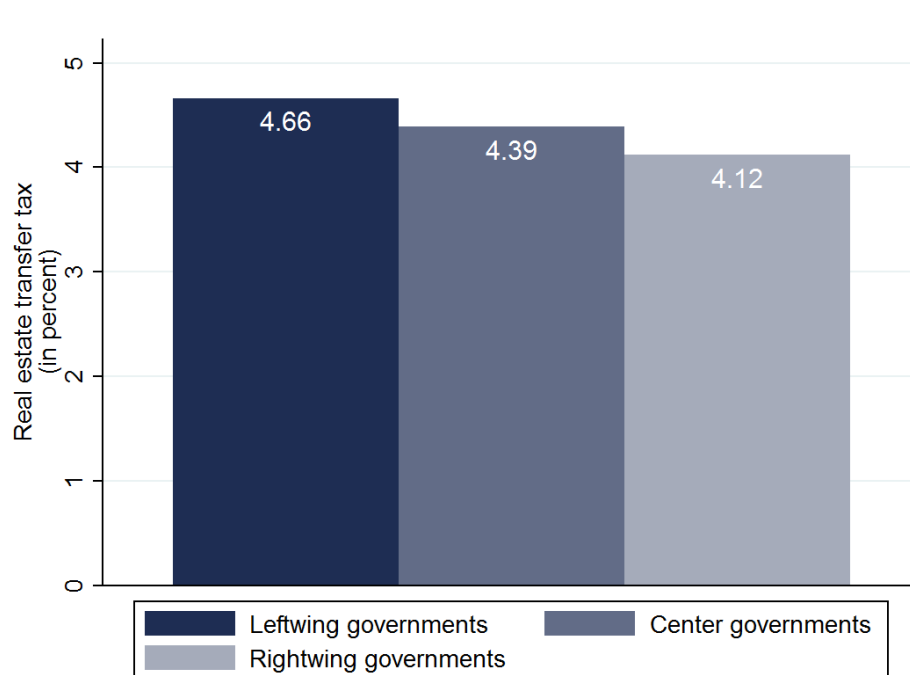
Table 5: Regression results – **including fixed state effects**.

Dependent variable: Real estate transfer tax rate. Fixed-effects model with standard errors robust to heteroskedasticity (Huber/White/sandwich standard errors)

	(1)	(2)	(3)	(4)
Government ideology (leftwing)	0.608** (0.222)	0.632** (0.220)	0.544** (0.192)	0.519** (0.186)
Share of rightwing voters (CDU/CSU and FDP) in federal elections		0.0295 (0.041)	0.028 (0.041)	0.033 (0.042)
Debt per capita			0.000 (0.000)	0.000 (0.000)
Combined taxes per capita				-0.000 (0.001)
Fixed time effects	Yes	Yes	Yes	Yes
Fixed state effects	Yes	Yes	Yes	Yes
Observations	176	176	176	176
Groups	16	16	16	16
R ² within	0.727	0.730	0.731	0.733
R ² between	0.194	0.031	0.082	0.073
R ² overall	0.621	0.525	0.585	0.579

Standard errors in parentheses; * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Figure 8: Conditional correlations - real estate transfer tax rates by type of governments (2007-2017)



The figure shows averaged tax rates conditional to the share of rightwing voters (CDU/CSU and FDP) in federal elections, the debt-per-capita ratios, the combined taxes per capita ratios (all evaluated at the mean), fixed time effects and fixed state effects.