Elite Persistence and Policy Persistence: Re-Installed Mayors from Weimar Germany

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Abstract

Why do public policies change little over time in individual places, sometimes for centuries? We investigate different mechanisms for policy persistence. Several city mayors serving in democratic Weimar Germany were expelled by the Nazis in 1933, but re-installed by the Allies after World War II. We find that pre-Nazi patterns in public debt re-appear in cities with a re-installed mayor, albeit all city debt defaulted after the war. We do not find such correlations in a matched sample of cities where the Weimar mayor did not return to office. Historical public debt does also not predict debt today in East Germany and in former German cities in present-day Poland—places where political elites or most of the population changed. We conclude that elite persistence dominates place-based features such as geography or population preferences in explaining persistent policies.

JEL-Codes: H630, H740, N440, N940.

Keywords: elite persistence, public debt, fiscal policy, Weimar Germany.

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1 Introduction

Why are public policies and institutions so sticky and sometimes persistently tied to individual places? Many studies have shown remarkable similarities between historical and today's economic, political or sociodemographic outcomes in individual places (for example, Dell, 2010; Voigtländer and Voth, 2012; Fritsch and Wyrwich, 2014; Becker *et al.*, 2016; Cantoni *et al.*, 2019; Ochsner and Roesel, 2020, see also Voth, 2021), but only few papers were able to isolate the mechanisms of place-based persistence. The literature usually either refers to time-invariant local geographical features such as slope, soil properties or coastal access (Bleakley and Lin, 2012; Ellingsen, 2021), institutional history (Guiso *et al.*, 2016) or population preferences through an intergenerational transmission of traits along the lines of Bisin and Verdier (2001).

We propose endogenous selection and continuity of elites as a yet widely overlooked channel which we call 'elite persistence'. In theory, political elites are able to shape institutions and affect de facto political power (see, Acemoglu and Robinson, 2006, 2008). Elites can contribute to the persistence of economic outcomes even when the institutional environment changes (Acemoglu and Robinson, 2008). The simple idea behind 'elite persistence' is that political leaders are socialized within an existing political system and may learn, adopt, and thus perpetuate successful political strategies. We borrow the idea from the literature on social learning which has mainly focused on intra-family transmission of values and the socialization of children and adolescents (see e.g., Dohmen *et al.*, 2011; Bhalotra and Rawlings, 2011; Jennings *et al.*, 2009). Studies have demonstrated how continuity among elites and elite networks occurs and to which extent such dynasties influence political and economic outcomes in the short run (see e.g., Dal Bó *et al.*, 2009). However, continuity among elites and local politics as a place of socialization have hardly been investigated as a mechanism explaining institutional and economic long-term persistence yet.[1]

We investigate the extent to which elite persistence translates into persistence of local policies and economic outcomes. In general, the (s)election of elites is endogenous with overlapping generations of politicians where juniors learn from the more experienced cohorts.

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[1]Related studies have shown that politicians' values are remarkably stable over time (Searing *et al.*, 2019; Putnam *et al.*, 1979).

We consider a historical case study in which the continuity of elites is interrupted in some cities and not in others. We exploit unique personnel continuities which connect democratic Weimar (1919 to 1933) with modern democratic Germany after 1945. Democratic city mayors serving in Weimar Germany were expelled by the Nazis in 1933, but some of them were re-installed by the Allies after World War II (see, Figure 1). For example, Konrad Adenauer, the later chancellor of Germany, served as city mayor of Cologne until 1933 and was re-appointed by the US army in May 1945 to take over the mayor's office again. Munich's mayor Karl Scharnagl is another example. We collect and compare fiscal policies of the 416 largest cities in democratic Weimar Germany before 1933 with policies of the same cities today. Public debt is a key fiscal policy and particularly suited for our study. All local government debt defaulted after World War II, ruling out any *direct* links in historical and present-day public debt. Our main finding is that pre-Nazi patterns in public debt are strongly correlated with current public debt in German cities with a re-installed mayor. By contrast, we do not find such links in a matched sample of cities where the Weimar mayor did *not* return to office. Our setting also allows to separate the channel of elite persistence from other mechanisms like invariant geographical features and place-based population preferences. We find that historical debt does not predict today's debt levels in East Germany and in former German cities in present-day Poland—places where all political elites or almost the full population changed. We conclude that policy persistence is more tied to elite persistence than to place-based geographical features.

[Figure 1 about here]

After liberating Germany in spring 1945, both the Western Allies and the Red Army instantly removed local Nazi officials. However, military governments often lacked proper language skills and local knowledge and therefore needed the support by Germans. As the Nazis had penetrated the full society for more than a decade, trustworthy and reliable Germans were not easy to find. The appointment of local German authorities by the Allies in the chaotic days after Germany's surrender was often left to chance (Welsh and Welsh, 1989, pp. 40). Anti-fascist attitudes was the main selection criterion for candidates replacing Nazi incumbents (Vollnhals and Schlemmer, 1991, pp. 121; Woller, 2009, pp. 93). Pre-Nazi officials from the Weimar era were first choice—as long as they were available.

Mayors are among the most important and powerful local political players in Germany. In some cities, the mayor serving until the Nazi takeover in 1933 was still available and re-inaugurated by the Allies. Figure 1 provides a geographic overview of the largest German cities where the Allies did (red dots) or did not (hollows) re-install a mayor who was expelled after 1933; cities located in present-day Poland or Russia are not included in the map.[2] The map reveals no local clustering in re-installed mayors, they can be found all over Germany.

We compare historical and present-day fiscal policies in cities with and cities without a re-installed mayor after 1945. We mainly focus on democratic West Germany but also include East Germany later. To balance cities with and without a re-installed mayor properly, we use a propensity score matching on 1932 city characteristics as well as on the tenure and life expectancy of the democratic pre-Nazi mayor. This allows us to compare cities with a similar probability of a re-installed pre-Nazi mayor after the war. We also control for factors which might be related to public debt today.

Our results show that pre-Nazi patterns in public debt re-emerged in West German cities where the Allies re-installed a pre-Nazi mayor in 1945. The effect is statistically significant and substantial. A 1 percent increase in per capita debt in 1932 comes with a 0.7 to 0.9 percent increase in 2012 per capita debt in cities where a pre-Nazi mayor was re-installed. The correlation of present-day and historical public debt is not statistically significant in comparable cities without such personnel continuity. Inferences do hardly change in numerous robustness tests. For example, we compare cities with and without a re-installed mayor that had a similar population and economic structure as well as a mayor of similar age and life expectancy. Moreover, we do not find sizeable and statistically significant effects for East Germany and cities in present-day Poland where elites or almost the full population was replaced. We also do not find differences in the correlation of historical and present-day outcomes between West German cities with and without a re-installed mayor for other variables that measure population preferences or economic development. So, persistence in public finance is not likely to be driven by unobserved informal institutions

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[2]We also drop cities that were merged to another city after 1933 and the federal city states (Berlin, Bremen, Hamburg, Lübeck).

or preferences, such as a generally more historically rooted mentality in cities with a re-installed mayor. Altogether, we provide evidence that historical paths in fiscal policy are mediated by continuity of elites. Policy persistence breaks up when the historical lines of elites are interrupted.

Our paper is also among the first documenting persistence in fiscal policies such as public debt over more than 80 years and despite a full default. The European sovereign debt crisis has triggered a large public debate over nations' differences in debt affinity in the early 2010s. Zimmermann (2015) observes remarkable parallels in nations' public financial attitudes of the 1960s and the post-medieval country profiles that were collected by Klock (1651) more than 300 years earlier. He argues that a deep-rooted mentality in fiscal behavior drives European countries' deficits. Our findings, by contrast, suggest that continuous chains and networks of elites are more important than local mentality, as our results for German cities are always robust when we control for deep-rooted religious or political attitudes. Fiscal policies bear more history than has typically been presumed, but for different reasons than discussed so far.

2   Theory of persistence

A growing number of studies show remarkable similarities between maps covering past times and today, but only few discuss the underlying mechanisms or conditions under which persistence breaks up (Voth, 2021). In this section, we briefly review the three main channels for long-term persistence described by previous studies: population preferences, institutions, and geography. We conclude that 'elite persistence'—endogenous selection and continuity of elites—has been largely overlooked by the literature so far as a channel of persistence. These channels are often closely intertwined. Various studies, for example, show a two-way interaction between population preferences and institutions. Democratic institutions and democratic values may reinforce each other (Besley and Persson, 2019). Elites, in turn, can affect and reflect population preferences. They can even be understood as part of the institutional environment. It is therefore important to clearly delineate

the contribution of each channel to long-term persistence and to elaborate the special importance of elites in this context.

2.1 Population preferences

One driver of long-term persistence in economic outcomes can be found in the preferences of the population. Voters elect politicians who best represent their own preferences. Consequently, these preferences are also reflected in policies. In general, those preferences can be passed on from generation to generation. The idea of behavioral transmission of populations preferences pioneered by Bisin and Verdier (2001, 2011) is a first explanation for long-term persistence. In families, parents socialize their children according to their own preferences, motivated by paternalistic altruism (Bisin and Verdier, 2001). Within this framework, parents decide to socialize their children inside the family (directly) or by the society (indirectly) for a particular trait.

Spolaore and Wacziarg (2013) discuss how intergenerationally transmitted traits affect the persistence of socioeconomic outcomes. They show that population rather than geography matters for persistence in (socio)economic outcomes and explains sticky regional differences (see also, Guiso *et al.*, 2016; Putterman and Weil, 2010; Easterly and Levine, 2016; Tabellini, 2008). Moreover, they provide a taxonomy of the mechanisms through which such traits can be transmitted from generation to generation. Two main mechanisms have been identified. First, there is a direct transmission channel through social learning by observation and imitation or genetic heredity. Thus far, empirical studies have convincingly demonstrated the intra-familiar transmission of values (see e.g., Dohmen *et al.*, 2011) or living conditions such as health (Bhalotra and Rawlings, 2011). In particular, various studies examined intra-family socialization in terms of political values and show that parents have a strong and persistent influence on their children's party preferences (see e.g., Jennings *et al.*, 2009; Aggeborn and Nyman, 2021). Individual party identification is often assumed to form in adolescence or early adulthood and remains largely stable for the rest of life (Campbell *et al.*, 1960, pp. 146 and pp. 148 et seqq.). Second, intergenerationally transferred traits may have an indirect impact on future outcomes and behavior by creating barriers, for example to the implementation of new ideas. (Ockenfels and Weimann, 1999),

for example, show in public good and solidarity experiments that seven years after German reunification study participants from East Germany behave more selfish than West German participants. They therefore suggest that cooperation and solidarity behavior depend strongly on culture-specific norms, resulting from socialisation in different political systems. Moreover, (Alesina and Fuchs-Schündeln, 2007) also look at feedback effects of economic systems on individual preferences using the historical case study of German reunification. They show that East Germans are more open to state intervention after reunification than West Germans. The differences in individual preferences persist for about one to two generations.

2.2   Institutions

Another important factor for long-term persistence in economic outcomes are institutions. Formal political institutions, such as legislation, often last for many years and can thus directly influence long-term economic development paths. Different empirical studies show that past institutions have an impact on present institutions and economic outcomes (Tabellini, 2008; Giuliano and Nunn, 2013; Dell *et al.*, 2018).

A key question is why past institutions are still good predictors of present economic outcomes, even if the institutional environment has since changed. One possible explanation could be found in the existence of formal institutions such as local political networks that preserve specific ideologies even if, for example, legislation changes. Ochsner and Roesel (2020) show that local party branches can influence political sentiments in the long run by preserving ideologies even when outside conditions change. A second explanation are informal institutions (such as cultural values, norms and attitudes toward specific institutions) that continue to exist after formal institutions have been abolished. Often, these informal institutions are linked to population preferences and, as such, they are passed on from generation to generation (see section 2.1). In this line, empirical studies have shown that past institutions may shape the values of the population (Guiso *et al.*, 2016, e.g.) and thus indirectly influence long-term economic outcomes. Putterman and Weil (2010), for example, show that countries whose population's ancestors originate from

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regions with a longer history of organized states and an early adoption of agriculture today have higher incomes.

Informal institutions, however, also endure apart from population preferences. For example, Ochsner and Roesel (2017) show that out-group sentiments (in form of anti-Muslim attitudes) in Austrian regions re-emerge as a result of political election campaigns using historical narratives even if they had disappeared for a long time. They suggest that collective memories of the Turkish siege of Vienna were preserved in municipality and church chronicles, monuments and historical buildings as well as the school curriculum. Such historical documentation and legacies are another source of the feedback effect of institutions.

2.3 Geography

A third factor for long-term persistence is location-based geography. It could be relevant, if, for example, specific climate conditions or an economically unfavorable geographical location affect economic behavior and policies. Several studies demonstrate the importance of geographical fundamentals for long-term socioeconomic outcomes. Bleakley and Lin (2012), for example, show that the historical distribution of portage sites in the U.S. is still relevant to present-day population density, even though the benefits of portage sites have long since become obsolete.[3] Ellingsen (2021) stresses the importance of geographic factors in a study on trade restrictions between Europe and places of the Spanish Empire. He shows that modern settlement patterns are less correlated with pre-colonial population density and more with coastal access, where cities grew only after trade restrictions with Europe were relaxed. Moreover, in a study of long-term regional population distribution in Japan, Davis and Weinstein (2002) show that the spatial distribution of city sizes is resilient even to extreme shocks. After the Allied bombing of Japan in World War II, most cities returned to their relative position in the population distribution of cities within 15 years. Thus, geography seems to be another candidate for long-term development and persistence as well.

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[3] *Portage* here refers to activities and services offered to overcome obstacles on waterways to complete trade routes.

2.4   Elite continuity

One point hardly discussed so far by literature on long term persistence of economic outcomes are political elites. Political elites should be considered as a separate channel. Acemoglu and Robinson (2006, 2008) argue that political institutions (legislation) determine the distribution of de jure political power. However, political elites fill positions *within* political institutions. In this position, they are able to affect the de facto political power by shaping political institutions in order to offset changes in de jure political power (see, Acemoglu and Robinson, 2008). Both de jure and de facto power may then follow different paths. For example, many autocrats operate under the same constitution than their democratic predecessors. Vice versa, de facto powers may also persist under new institutional frameworks. After regime changes formal institutions often change dramatically but a large number of public servants remain in office or return to the administration.[4] In this argumentation, political elites and their ability to preserve de facto political power even in new institutional frameworks are the reason why economic institutions and policies may persist over time while political institutions have changed. We elaborate on this mechanism in detail in the next section where we discuss the example of re-installed mayors from Weimar Germany.

3   Re-installed mayors from Weimar Germany

3.1   Institutional background

We investigate re-installed mayors from Weimar Germany as a case study for personal continuity. After 1933, many mayors elected in the Weimar era were expelled and replaced by Nazis mayors. Some expelled Weimar mayors were re-installed by the Allies after Germany's surrender in spring 1945. Famous examples are Konrad Adenauer, the later chancellor of Germany, or Karl Scharnagl. Both mayors served until 1933 and were

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[4]Several studies show, for example, that political elites of previous regimes have an electoral advantage after democratic transitions (see e.g., Martinez-Bravo *et al.*, 2017; González *et al.*, 2021).

re-installed by the Allies in 1945 in the cities of Cologne and Munich. There are more examples all over Germany (see the map in Figure 1).[5]

The usually observed continuity of elites was interrupted by the Nazi era. Thus, mayor continuities bridging democratic Weimar and modern democratic Germany are ideal to study the importance of elite persistence. First, as the head of the administration, the mayor is the most important and influential player in local politics in Germany. Studies demonstrate that the mayor and his experience in office matter for the local (fiscal) policy (Freier and Thomasius, 2016).[6] Second, the appointment of local German authorities by the Allies in the chaotic days after Germany's surrender was often left to chance and can be characterized as close to random (Welsh and Welsh, 1989, pp. 40). After liberating Germany in spring 1945, both the Western Allies and the Red Army instantly removed local Nazi officials. However, military governments often lacked proper language skills and local knowledge and therefore needed the support by Germans. As the Nazis had penetrated the full society for more than a decade, trusted and reliable Germans were not easy to find. Anti-fascist attitudes was the main selection criterion for candidates replacing Nazi incumbents (Vollnhals and Schlemmer, 1991, pp. 121; Woller, 2009, pp. 93). Pre-Nazi officials from the Weimar era were first choice—as long as they were available.[7] Third, there are several circumstances that may cause breaks in the transmission paths and reduce the importance of historical roots for today's economic outcomes. Our variable of interest is the level of local public debt. Because of a total default of local public debt after World War II, we can rule out a direct impact of historical on present-day public debt. Moreover, the institutional frameworks for local government spending and borrowing were

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[5]A number of mayors (in the cities of Mannheim, Würzburg, Heidelberg, Ingolstadt, Amberg, Straubing, Goslar, Rendsburg, Memmingen, Holzminden, Heide, Fellbach and Kitzingen) returned to office in the early years after 1945 and was –strictly speaking– not re-installed.

[6]For this reason, we focus only on mayors of German cities in this study. Of course, vice mayors or members of the local administration were sometimes re-installed, but we argue that they had only minor influences on local (fiscal) policy.

[7]If officials from the Weimar period were not available, often politically inexperienced people were appointed (such as entrepreneurs, journalists or doctors). Wilhelm Hollbach, for example, postwar mayor in Frankfurt am Main worked as a journalist and reported to the military government quarters only to help with reconstruction. After a brief consultation between two officers, he was taken in with the words *"You Are The Bürgermeister"* (Ruhl, 1982, pp. 125). The case of Wilhelm Rheinländer, who was appointed mayor of Herten by means of a handwritten note, appears similarly unbureaucratic (see: Stadt Herten (2009), http://www.presse-service.de/data.aspx/static/717487.html). These mayors did not yet hold office during the Weimar period, however, these anecdotes demonstrate how left to chance and spontaneous the appointment of mayors often was.

rather comparable in 1932 and 2012 (see section 4.1). Our setting also allows to separate the channel of elite persistence from other mechanisms like location-based geography and population preferences. In East Germany, almost the entire political elite was replaced during socialism. In former German cities that are now located in present-day Poland even an almost complete exchange of the population took place.

3.2 Mechanisms of elite continuity

After several breaks during the Nazi era, including a removal of political elites from the Weimar era, re-installed mayors can be seen as re-activators of pre-Nazi politics, carrying over their practices, policies and values from the Weimar era into the postwar period and shaping the institutional environment. In general, politicians are assumed to be very stable carriers of values. Elites often retain their political values, once formed and learned, over the course of their tenure. Searing *et al.* (2019) empirically investigate the endurance of politicians' values over a time period of more than 40 years and show that their values are remarkably stable over time. Putnam *et al.* (1979) comes to a similar conclusion in their study on attitude stability among Italian elites, but over a much shorter period of time. An important question, however, is how the impact of re-installed mayors may have carried over from the postwar period to the present. Based on the literature, some arguments can be pointed out.

The first argument refers to the (s)election of incumbents and future politicians. Established elites have advantages in maintaining their power over a long period of time. Either by re-election, or by means of successors who continue the policies and working practices of their predecessors. This point is closely related to the literature on elite persistence and political dynasties, which suggests that social ties play an important role in the (s)election of politicians, leading to a so-called 'incumbency advantage' (see, for example, Dal Bó *et al.*, 2009; Fisman *et al.*, 2020). Freier (2015) provides causal evidence for an incumbency advantage of German mayors in mayoral elections between 1945 and 2010. The literature on elite persistence also shows that in political transitions old-regimes mayors have an incumbency advantage, are more likely to cling to old policies and hamper change at the local level (González *et al.*, 2021; Martinez-Bravo *et al.*, 2017). (Aidt *et al.*, 2022)

show connections to be an important channel for old-regime elites to 'survive' political transitions. To date, however, no studies have considered the long-term effects of elite persistence and political dynasties. We propose elite persistence as a factor for persistent policies.

Second, the idea of elite persistence as a driver for policy persistence is closely related to a learning and imitation process in overlapping generations along the lines of Spolaore and Wacziarg (2013), with the exception that we fully abstract from intra-family learning. Now we focus on the fact that incumbent politicians can directly affect the future policies and political preferences of their successors. Junior politicians often start their political career as backbenchers while they undergo a socialization process within the party or administration. Experienced politicians may transmit values and practices to their peers or successors that have a direct impact on future policies. Such values and practices may act as barriers or facilitators to the implementation of new ideas or policies in the future.

Politics or institutions as a point of socialization has hardly been considered to date. Kellerman (1978) described the importance of mentoring in politics in a historical case study of Germany's former Chancellor Willy Brandt. The study reveals that the experienced social-democratic politicians Julius Leber and Ernst Reuter had a large impact on Brandt's personal and political career. This paper suggests that there is influence and learning relationships among politicians. Levinson *et al.* (1976) also emphasize the importance of mentors for the personal development and private relationships. The mentor is usually a colleague, supervisor or teacher who is several years older and more experienced.

Finally, elites can also affect economic outcomes in the long run indirectly through the channels mentioned in sections 2.1 and 2.2 via (in)formal institutions and population preferences shaped by politicians. Ochsner and Roesel (2020), for example, show empirically that migrating extremists can influence the institutional environment in a region by establishing local party branches and thus shape the long-term political equilibrium. Empirical studies also reveal that political misconduct (e.g., through corruption, political violence or slave trade) can affect the values and norms of the population (Ajzenman, 2021) and can shape their attitudes across generations (Lupu and Peisakhin, 2017; Nunn and Wantchekon, 2011).

4 Empirical strategy

4.1 Data and sample

For our empirical analysis, we collect data for German cities in 1932 and 2012. The starting point is the universe of all 544 German cities with more than 10,000 inhabitants in the early 1930s for which we have data on public debt (Verband Deutscher Städtestatistiker and Arbeitsgemeinschaft für Gemeindliche Statistik, 1934). As we are interested in the persistence of local fiscal policies, we combine historical debt data with information on local public debt in 2012 (Statistische Ämter des Bundes und der Länder, 2014a, 2018).[8] The institutional framework was very similar at both points in time. German local governments autonomously spent, borrowed, and levied taxes on property and local business. Cities were mainly responsible for social care, local infrastructure, public safety and order. Finally, finances in both years 1932 and 2012 are heavily affected by a big economic crisis three years earlier (1929 and 2009). For former German cities which were assigned to modern Poland after World War II, we use 2012 data on city debt from Koeppl-Turyna *et al.* (2016).[9]

We match our data on historical and present-day city debt with unique hand-collected data on city mayors. Information on mayors is from city archives, city administrations provided upon request, city websites, or internet archives. We were able to trace mayors between 1920 and 1960 in 357 German cities—247 in West Germany and 110 cities located in East Germany. In addition, there are 58 cities, now located in modern Poland, for which we have no information on mayors. Thus, we end up with a final dataset of 415 cities. We are mainly interested in cities' mayors who served in 1932. Building on the mayor chronicles, we are able to identify cities where a mayor from 1932 returned to office after the World War II. For the main part of the analysis, we focus on West German cities, since they had a democratic system both in 1932 and after 1945. In East Germany, socialism prevailed from 1949 to 1990 and political elites were entirely replaced after World War II. In cities which became part of Poland after 1945, there has even been an extensive

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[8]For 2012, we refer to total debt of the public budget, including public core and extra budgets because it seems most comparable to the data on public debt for 1932. For the state of Baden-Würrtemberg, we have to use 2017 data because of massive data errors in 2012 data.

[9]We do not consider former German cities which are part of Russia nowadays.

population replacement since then. Thus, elite continuity is only expected to be found in West Germany. We will discuss East German and later Polish cities in more depth in section 6.

We have to exclude cities that were merged to other cities and do not have an own city administration today (for example, the city of Wattenscheid was merged to Bochum in 1974). Our final baseline sample consists of 229 West German cities. In 41 cities (18%), a mayor from 1932 was re-installed after the war. Table 1 reports the samples we employ in our analyses.

[Table 1 about here]

We complement our main dataset with detailed information on city and mayor characteristics which we use as control or matching variables. At the city level, we have information on population, economic structure, taxation and political preferences in both 1932 and 2012.[10] Variables which may explain differences in public debt include city size (total population), the Catholic population share, unemployment rates, the sectoral share of agriculture, income tax revenues per capita,[11] voter turnout, and the vote share for left-wing parties in the national elections 1930 and 2013. We also have information on age, tenure, and party affiliation for a number of mayors who were in office in 1932.[12] We use information on the age of 197 mayors serving in 1932 to compute the remaining life expectancy. Life expectancy is derived from the German mortality table for the years 1932 to 1934 (Statistisches Reichsamt, 1937). Table A2 in the Appendix gives an overview of all variables included in this study and the corresponding data sources.

Table 2 summarizes our final baseline dataset which includes 229 cities in West Germany. The 1932 mayor was re-installed in 18% of all cities. Local public debt for 1932 and 2012 is scaled per capita and in logs.[13] On average, the remaining life expectancy of the 1932 mayors for which we have information is 22 years and average tenure before 1932 is

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[10]We use census data from 1933 and 2011.

[11]For 2012, we also use the general property tax rate (*Grundsteuer B*) which is a key fiscal policy today but not in the early 1930s.

[12]In cities with multiple mayors in 1932, we focus on the mayor who was already in office in 1931 because we assume a stronger impact on 1932 local public debt.

[13]Mean public debt in the 229 cities in 1932 was around 232 Reichsmark per capita, and 2181 Euros per capita in 2012.

10 years. Some 40% of all 123 mayors with information on party affiliation belong to a conservative party.[14]

[Table 2 about here]

4.2 Balancing

A major concern might be that—despite the chaotic nature of mayor selection in 1945— cities with a re-installed mayor may differ from other cities. Columns (1) and (2) in Table 3 compare city and mayor characteristics for cities with and without a re-installed 1932 mayor. We use all 191 cities for which we have full pre-war information on mayor's age (from which we compute life expectancy) and tenure as well as city characteristics as of 1932. We detect only few statistically significant differences between the two samples regarding the mayor characteristics (Column (3)). Re-installed mayors had on average 3 years less experience in office (statistically significant at the 1% level) and a three-year higher remaining life expectancy (statistically significant at the 5% level). This difference is likely to be driven by mayors who had been in office since the late 19th or early 20th century and were often too old to be re-installed after the war. With respect to the city characteristics there are no significant differences between the two samples. To make sure that both samples are comparable, we use a propensity score matching or entropy balancing (see section 4.3). Individual observations are weighted in such a way that differences are balanced. Balancing procedures successfully eliminate all significant mean differences between the two samples (Column (6)).[15]

[Table 3 about here]

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[14]We consider Bavarian People's Party (BVP), Centre Party (Zentrum), Christian Democratic Union (CDU) and Christian Social Union (CSU) as conservative.

[15]Entropy balancing produces similar results, however, compared to propensity score matching it also balances the differences in variances (not shown in Table 3).

4.3 Regression design

Our key strategy is to test whether historical public debt (1932) explains public debt in German cities nowadays (2012), controlled for factors that may drive public debt today or in the past. We therefore specify a simple OLS regression taking on the following form:

$$Debt_{i,2012} = \alpha + \beta Debt_{i,1932} + \epsilon_i \tag{1}$$

where $Debt_{i,2012}$ denotes logarithmized public debt per capita level of city i in 2012 which serves as dependent variable. On the right-hand side, our key variable of interest is logarithmized city debt per capita in 1932. ϵ_i is the error term. In the baseline specification we employ Huber-White sandwich standard errors robust to heteroskedasticity. We distinguish German cities with and without a re-installed mayor from the Weimar era in the next step. We now include a dummy for a re-installed mayor in equation (1), interacted with public debt in 1932. We are therefore able to test whether correlations of historical and present-day debt differ in both groups of cities. The corresponding OLS regression takes the following form:

$$Debt_{i,2012} = \alpha + \beta Debt_{i,1932} + \eta Reinstalled_i +$$
$$\theta(Debt_{i,1932} \times Reinstalled_i) + X'_{i,2012}\gamma + Z'_{i,2012}\delta + \epsilon_i \tag{2}$$

where $Reinstalled_i$ is a dummy variable which takes on the value of one if a mayor from 1932 was re-installed in city i after the war, and zero otherwise. The term $(Debt_{i,1932} \times Reinstalled_i)$ represents the interaction term with debt per capita, the corresponding coefficient θ. The coefficient β describes the correlation of historical and present-day public debt for cities without a re-installed mayor ($Reinstalled_i = 0$), the sum of β and θ refers to the correlation in the sample of cities with a re-installed mayor. Thus, θ reports the difference in the correlation of historical and present debt levels in cities with and without a re-installed mayor. Later on, we additionally include a vector of present-day city controls (X) such as socio-demographics, economic structure, religion, political preferences and taxation related controls (see, section 4.1) and fixed effects for the 16 modern German

states (Z) which have some considerable influence on city public finance via government grants or fiscal supervision.

To balance both groups of cities as best as possible, we use a weighted estimation with weights derived from propensity score matching and entropy balancing on 1932 city and mayor characteristics (see section 4.2). Thus, we re-weight our sample in a way that 1932 characteristics do not predict the probability of a re-installed mayor. We use the dummy $Reinstalled_i$ and match over 1932 city controls and some mayor characteristics which are listed in Table 3. We mainly use a symmetric set of city controls as for 2012 (X). For the propensity score matching, we apply kernel matching. When using entropy balancing, we are able to balance means and variances simultaneously. However, the disadvantage of this method is that it is not feasible for all our robustness checks as the sample size decreases. Therefore, our main focus is the propensity score matching. We use weights derived from the balancing procedures and run weighted OLS regressions of the form described by equation 2. By considering the weighted samples, we now compare cities with and without a re-installed mayor that had a mayor of similar age and tenure in 1932 and were similar in terms of economic structure, population, taxation, and political preferences.

5 Results

Table 4 depicts the baseline OLS results. Column (1) presents the estimation result for the correlation of local public debt in the overall West German sample described by equation 1. Columns (2) and (3) show the OLS results for cities with and without a re-installed mayor. Column (4) depicts the results of the regression with interaction term without any controls included (see equation 2). Overall, we find a positive but not significant correlation of local government debt in 1932 and 2012 in our baseline sample of 229 West German cities (see column(1)). In columns (2) and (3), this total effect is decomposed into the correlation in cities with and without a re-installed mayor. In the sample without re-installed mayors, the correlation between historical and present public debt is close to zero and not statistically significant. In cities with a re-installed mayor, however, we find a strong and highly significant effect. A one percent increase in debt in 1932 is associated

with a 0.87 percent increase in debt in 2012. Thus, the positive correlation in the overall sample is primarily driven by the 41 cities with a re-installed mayor. The difference in the correlation of public debt between the two groups resulting from the interaction term is also significant at the 1 percent level, indicating that the correlation of local public debt in the sample with a re-installed mayor is significantly larger than in the control group of cities without a re-installed mayor (see Column (4)).

[Table 4 about here]

In the next step, we examine the results presented in columns (3) through (5) in more detail. In Table 5 we check them for their robustness to the variation of standard errors and samples as well as the inclusion of control variables and state fixed effects. The upper part of Table 5 reproduces our baseline specification. We estimate the correlation of historical and present-day public debt for both samples of cities with and without a re-installed mayor as well as their difference based on an OLS regression with interaction term (see equation 2). Controls and state fixed effects are not yet included in the baseline. The estimated effects are depicted in Columns (1) to (3). Columns (4) and (5) show the R^2 and the number of observations of each regression.

This table consists of three panels. In the first panel we demonstrate the influence of other standard error calculations on the results in the light of our relatively small sample sizes. In the second panel we deviate from our baseline sample described in section 4.1 and demonstrate the impact of sample variations on the results. In the third panel we check the robustness of our baseline results to different control variables and estimation methods.

Starting point for this analysis are the correlations in the baseline from Table 4. First, we varied standard errors in order to allow for spatial correlation. Here we employ clustered standard errors by states in specification (a). In specification (b), we use the spatial correction proposed by Conley (1999). We assume that the standard error of each city is correlated with the standard errors of cities within a radius of 50 kilometers.[16] The choice of different standard errors does not change the inferences.

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[16]The associated Stata command goes back to Colella *et al.* (2019).

In the second panel, we discuss different sample variations to show that the results are not driven by any sample restrictions. In specification (a), we include all East German cities in the sample. This slightly reduces the estimated correlation in the sample with a re-installed mayor to 0.706. Nevertheless, the correlation in cities with a re-installed mayor and the difference remains significant at the one and five percent level, respectively. The correlation in the sample without a re-installed mayor increases to 0.138 but remains insignificant. The sample size grows from 229 to 335 observations. The correlation of public debt in East Germany is discussed separately in the section 6. In specification (b) and (c), we include cities that were merged to other cities and exclude cities with multiple mayors in 1932, respectively. Both variations do not qualitatively change the baseline results. In specification d), we restrict our sample only to mayors who were expelled from office in 1933. Mayors who left office after 1933 were presumably more aligned to National Socialism. We find that the correlation of public debt in cities without a re-installed mayor becomes negative but remains insignificant. However, the correlation in cities with a re-installed mayor hardly changes and remains highly significant. Our results should therefore not be driven by the re-installed mayors' political affiliation or their attitudes towards National Socialism. In specification (e), we exclude all cities whose 1932 mayor died between 1932 and May 1945 and thus could not be re-installed. The survival of a mayor in the Nazi era cannot be considered completely exogenous. Several politicians who were opposed to the Nazi system died as a result of political violence. To account for this possible endogeneity, we only consider cities in the control group whose 1932 mayor was still alive and could have been appointed. The correlation of public debt in the sample of cities without a re-installed mayor remains close to zero and statistically insignificant. The correlation of public debt in cities with a re-installed mayor and the difference remains positive and highly significant. We return to this sample in more detail in Panel III, including control variables.

In Panel III, we check to which extent the inclusion of control variables alters the results. In specifications (a) through (c), we use different methods to control for 1932 city and mayor characteristics. In a) and b), we use a weighted estimation following from Equation 2 with weights derived from propensity score matching and entropy balancing on 1932

city and mayor characteristics. Therefore, we primarily compare cities that have a similar probability of having a re-installed mayor, depending on the observables listed in Table 3. The correlation of public debt in cities with a re-installed mayor is about 0.871 and remains highly significant. The correlation of public debt in cities without a re-installed mayor, on the other hand, is insignificant and varies in size and sign depending on the balancing method we use. The difference remains positive and significant at the 1 and 5 percent level, expressing that the correlation of public debt is significantly larger in cities with a re-installed mayor. The sample size decreases to 191 observations due to missing values in control variables, especially in the mayor characteristics. In specification (c), we add 1932 mayor and city characteristics as controls to Equation 2 instead of weighting the observations. The estimated coefficients are very close in magnitude and significance to those in specification (a), suggesting that weighting (propensity score matching) and controlling leads to quite similar results in this case. In the following three specifications of Panel III, we therefore always build on specification (a).

In specification (d), we re-estimate specification (a), but we exclude all cities whose 1932 mayor died between 1932 and May 1945 to account for the possible endogeneity resulting from a mayor's death in the Nazi era. We still observe a highly significant and large correlation of public debt in cities with a re-installed mayor (0.871) while there is no significant correlation in cities without a re-installed mayor. The difference (0.740) remains statistically significant at the 5 percent level.

In (e), we re-estimate specification (a) and we additionally include the party affiliation (dummy for conservative) of the 1932 mayor in the propensity score matching. This reduces the sample size to 112 observations because we do not have information on party affiliation for a number of mayors. The effect in cities with a re-installed mayor increases to 0.989 and remains highly significant. This suggests that the local party branches with which a mayor is affiliated matter for persistent policies. We also observe an increased but still insignificant correlation in cities without a re-installed mayor (0.278). The difference between the correlations remains of a similar magnitude (0.711) as in d) but may underpower as the number of observations basically halves compared to our full sample.

In specification (f), we re-estimate specification (a) but we additionally control for 2012 city characteristics and state fixed effects in Equation 2. This is our preferred specification because we account for 1932 city and mayor characteristics as well as for 2012 city characteristics and state fixed effects at the same time. We still observe a large and highly significant correlation of local public debt in cities with a re-installed mayor (0.696) while there is no significant correlation in cities without a re-installed mayor. The difference now reduces to 0.488 but remains positive and significant at the 5 percent level. Meanwhile, the R^2 raised from 0.023 in the baseline to 0.563 in this specification.[17] This result holds even if we additionally control for the share of housing destroyed between 1939 and 1945 as a proxy for war destruction.[18]

Across all specifications, we find a strongly significant correlation of historical and present-day public debt in cities with a re-installed mayor. In cities without such a personnel continuity, we do not find a robust correlation. This result does not change when we account for fiscal, economic, and demographic characteristics of cities, as well as for deep-rooted preferences of the population in 1932 and characteristics of the 1932 mayor. The results are also robust to the inclusion of city and population controls for 2012 as well as 2012 state fixed effects, which are of great importance for present city public finances. Even accounting for mayor's party affiliation or mayors that did not survive the Nazi era does not change the inferences in both samples of cities with and without personnel continuity.

[Table 5 about here]

6   Channels

We found policies and economic outcomes to be highly persistent in individual places. Germany's unique history allows us to examine the drivers of this persistence in more

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[17]Estimating the same specification with 1932 city and mayor characteristics as additional controls in the OLS regression instead of weighting raises the observed coefficients to some extent. The correlation of local public debt in cities without a re-installed mayor also becomes statistically significant in this example. Nevertheless, inferences for the coefficients in column (2) and (3) do not change, indicating that the correlation of public debt in cities with a re-installed mayor is still significantly larger than in cities without a re-installed mayor.

[18]Results are available upon request.

detail and to show under which conditions persistence breaks down. In the following, we discuss possible channels for long-term persistence in fiscal policy that can explain our results.

First, a direct effect of historical local public debt on present-day public finance can be excluded. Pre-war debt burdens cannot drive today's public finance directly because German local government debt entirely defaulted in 1948. But even if this direct link can be ruled out, a correlation of historical and present-day public debt could be driven by place-based factors, such as population preferences, geography, or institutional settings, that can influence long-term economic outcomes (see 2).

To examine the extent to which persistence is driven by population preferences and location-based geography, we compare the correlation of 1932 and current local public debt in West German cities with cities in East Germany and former German cities that are now located in modern Poland (see Table 6). We exclude merged cities in the East German and Polish sample as well. This reduces the sample size from 112 and 58 to 106 and 51, respectively, compared to Table 1. In West Germany, we observed an overall positive but not significant correlation of historical and present-day public debt (see Table 4). We have shown that in West Germany a robust positive correlation can be found only for cities with a re-installed mayor, while in cities without such personnel continuity persistence breaks down. Like West German cities without a re-installed mayor, in East Germany the correlation between historical and present-day public debt is also not statistically significant. Inference for East Germany does not change even when we control for the same 1932 and 2012 city characteristics as in the analysis before. The number of cities in East Germany in which a mayor from 1932 was re-installed is very small, so we refrain from separate regressions. East German elites were replaced during socialism from 1949 to 1989, so we do not assume an elite continuity linking the Weimar era and the present democracy in East Germany. This supports our conclusion that persistence in public finances is primarily driven by continuity in elites rather than by population preferences or place-based geographic factors. Considering former cities of the Weimar Republic, which are now located in modern Poland allows us to isolate the impact of geographical features from population, as here almost the entire population changed since the Weimar Republic.

The correlation for these cities is close to zero and far from significant. Thus, geographic factors do not seem to play a prominent role in the persistence of fiscal policy in our case.

[Table 6 about here]

Moreover, our results are not likely to be a consequence of differences in broader institutional settings, such as fiscal rules or central government grants, mentioned as further potential drivers for long-term persistence in section 2. These rules are mainly regulated at the national and state level and are not controlled by local elites. We control for state fixed effects to address differences in formal institutional settings across federal states. Thus, the differences shown in public debt across cities are likely a result of different fiscal policies and local (in)formal institutions implemented and shaped by the mayor.

Nevertheless, a potential confounder could be that there are unobservable differences between cities with and without a re-installed mayor that drive policy persistence. Possible examples would be a more historically rooted mentality or culture specific norms in certain cities or regions, which could both affect the re-installation of a mayor (as well as the continuity of elites after 1945) and drive stronger persistence of economic outcomes. In sections 3.1 and 4.2, we already argued that re-installation was often close to random and cannot be predicted by specific city characteristics. If persistence in economic outcomes and a re-installation is nevertheless driven by such underlying factors, we would expect to observe differences in the correlation of historical and present-day outcomes between cities with and without a re-installed mayor not only for local public debt but also for other variables. To this end, in Table A1 we consider the extent to which other outcomes, like population size, share of Catholics, unemployment rates, income tax revenues, or the share of left-wing voters in the population, are also historically driven. Column (1) depicts the correlation r of the historical and present-day outcome in the overall baseline sample. Values close to 1 indicate strong positive correlations, whereas a value close to 0 shows that the historical and present-day outcome are barely correlated. Columns (2) to (6) are analogous to Table 5. Here, we first consider the correlation of present-day and historical outcome separately for cities with and without a re-installed mayor (columns (2) and (3)), as well as their difference (column (4)). The coefficients come from a regression where we interact the historical outcome with the dummy for a re-installed mayor. All the

regressions here refer to the specification III f) where we match the samples over 1932 city and mayor characteristics and additionally control for 2012 city characteristics and state fixed effects.

We observe the strongest correlations in the overall West German sample for population size and the share of Catholics with correlation coefficients larger than 0.9. West German cities that were larger in the 1930s are still among the larger cities today. Religious preferences are also strongly tied to individual places. For the share of unemployed people, income tax revenues and the left-wing vote share the correlation is positive as well but quite smaller in magnitude with around 0.32 to 0.4. By contrast, the correlation coefficient for historical and present-day local public debt in the overall West German sample is only about 0.1. This can be explained by the total default of local public debt after the Second World War. Nevertheless, more informative for our question are the regression coefficients in columns (2) to (4). For local public debt, a significant correlation despite the total default is observed only in cities with a re-installed mayor whereas the correlation in cities without such personnel continuity is considerably smaller and insignificant. By contrast, we observe a significant correlation of historical and present-day outcome for population size, population share Catholics and left-wing vote share always in both groups of cities. Only for income tax revenue, the correlation is significant only in the group of cities without a re-installed mayor. For unemployment share we observe no significant correlation in both groups of cities. But most importantly, the difference between the two coefficients (column 4) is quite small and statistically insignificant for all these alternative outcomes, while the difference for local public debt is large and statistically significant at the 5 percent level. We find no evidence that unobservable factors (such as unobservable population preferences or historically based informal institutions like culture-specific norms or a culture of commemoration) lead to fundamentally stronger historical roots in cities with a re-installed mayor. Thus, it does not seem that these factors drive policy persistence in our case.

[Table A1 about here]

By excluding these potential drivers of persistence, we substantiate our conjecture that the continuity of elites, caused by a re-installed mayor, is a necessary condition for persistence

in public debt of German cities. It turns out that cities where these historical lines of political elites are interrupted do not show a significant and robust correlation in public debt. The re-installation of democratic elites is likely to be of particular importance in this historical context, as there occur widespread shifts in population preferences and the institutional environment during the Nazi era as well. Hereafter, we will discuss the mechanisms how political elites can contribute to persistent policies and provide some anecdotal evidence for these mechanisms. With only a few exceptions, politicians do not start their careers in powerful positions. They undergo a long period of socialization within the political system before entering office. They first serve as backbenchers in the local council or as officials in the local administration and observe which of a mayor's instruments and strategies in public finance are locally customary and accepted. After entering the mayor's office, former junior politicians may rely on this knowledge and imitate the strategies of their predecessors. Once socialized, politicians' values are then stable for a long time (see Searing *et al.*, 2019; Levinson *et al.*, 1976). Traditions and attitudes toward public finance are then passed on to the next generation of politicians. This concept of overlapping political generations is consistent with the literature on behavioral transmission through imitation and learning (see Spolaore and Wacziarg, 2013) and mentoring in politics and organizations (see Kellerman, 1978; McEvily *et al.*, 2012) mentioned in section 2. A second aspect, also mentioned out in section 2, is an incumbency advantage for political elites and dynasties. Social ties play an important role in the (s)election of politicians as well, affecting the composition of future local councils. Accordingly, politicians who continue the policies of their predecessor are more likely to succeed in office.

During the Nazi era, the usual endogenous selection of elites in overlapping generations of politicians learning from each other was interrupted by the removal of democratic elites. The re-installation of mayors allows us now to consider cities where this continuity was subsequently restored. In these cities, pre-war policies and attitudes towards democratic institutions could be transferred to post-WWII Germany and re-activated by the re-installed mayor. Afterwards, the common mechanism of overlapping political generations subsequently may have transferred policy traditions to the present. Mayors in West Germany are usually followed in office by politicians who served in the administration or

as a member of the local council under their predecessors. The Bavarian city of Munich provides a clear illustration of this mechanism (Figure A1). The conservative pre-Nazi mayor Karl Scharnagl was put into office after WWII by the US army (green bars). His left-wing successor, Thomas Wimmer, served as the vice mayor after 1945. He had already been vice-mayor in 1932 and was reappointed to office by Scharnagl in 1945. Similarly, all the democratic mayors with the exception of Georg Kronawitter (who served as a member of the state parliament representing Munich) served in the administration or council under their predecessors (gray bars). Even the temporary switch from a left-wing to a right-wing mayor in 1978 did not interrupt the intergenerational transmission as Georg Kronawitter returned to office in 1984. This example of mayors in the city of Munich not only illustrates how socialization of politicians through overlapping generations of incumbents could work, but also provides anecdotal evidence for the importance of social ties in the election and selection of politicians. Scharnagl directly influenced the composition of the city council by appointing Thomas Wimmer as vice chancellor, who subsequently became his successor. In this sense, it seems plausible to us that both the socialization of new incumbents and an incumbency advantage for local elites who follow the politics of their predecessors are important mechanisms for persistent policies.[19]

[Figure A1 about here]

By contrast, in cities without a re-installed mayor, there is no personnel link between the pre-Nazi era and the postwar period. In these cities, continuity in elites is interrupted as a result of the Nazis' removal of the Weimar mayors. Figure A2 shows a chronicle of the mayors of Pforzheim from 1925 to 2015. We find a permanent overlapping in terms of office both before 1945 and after the war. After 1945, all mayors had previously worked in the city administration and were able to gain experience there. In contrast to Munich, however, with Wilhelm Becker and Friedrich Katz, politically inexperienced entrepreneurs were appointed as post-war mayors and were therefore not able to transfer political strategies and instruments from the Weimar era to the post-war period.

[Figure A2 about here]

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[19]In our analysis, we only focus on first mayors re-installed. Of course, social learning and an incumbency advantage may also play a role among re-installed vice-mayors or other public servants. However, we argue that they had only minor influences on local fiscal policy.

7   Conclusion

We have studied the case of city mayors from democratic Weimar Germany which were expelled by the Nazis after 1932 but re-installed by the Allies in Germany after World War II in 1945. Previous studies have shown that economic outcomes are highly persistent in individual places. In this paper, we show that persistence breaks up when the continuity of elite dynasties is interrupted. After several breaks during the Nazi era, re-installed mayors provide a link in the historical lines of local elites and transfer democratic pre-Nazi policies in the post-war period. Historical and today's public debt is correlated in these West German cities with a re-installed mayor, but no robust correlation can be found in cities without a re-installed mayor. Historical debt has also no predictive power in East Germany and in formerly German cities in modern Poland where political elites or the full population changed. Our results strongly support the hypothesis that elite persistence is a main condition to explain persistence in public policies. Geographical features and continuities in local population preferences, by contrast, do not seem to explain persistent policies in our case. Furthermore, we do not find such differences in the correlation patterns as for public debt for other sociodemographic, economic, or political outcomes.

We propose that the socialization of politicians within political systems and a (re)election advantage of established elites are potential mechanisms that explain how political practices were transferred from the postwar period to today. Our findings have strong implications for the design of constitutions. Even if an incumbent is voted out of office, deselected policies may continue because the successor underwent a long socialization in the administration or had a similar political background. Junior politicians adopt strategies that they have learned under their predecessors. Thus, policies may survive for quite a long time despite frequent changes in the government party or political leaders. This mechanism is equally likely to be found in societies with democratic elections and to non-democratic regimes where local authorities are appointed. Further research efforts should be undertaken to improve our understanding of this process of socialization within administrations and across political systems, as well as the long-term effects of elite persistence in more detail.

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Figure 1: Pre-Nazi mayors re-installed by the Allies after World War II
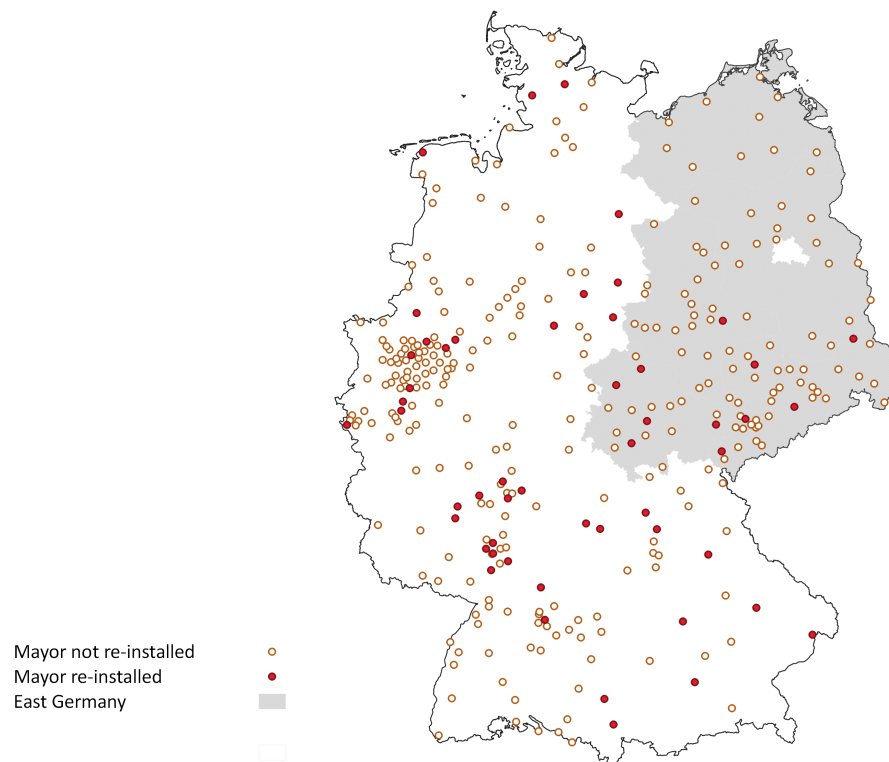
Notes: This map shows the 335 largest German cities within Germany's present-day boundaries (229 West German cities, 106 East German cities). Bullets indicate whether a 1932 mayor was re-installed after World War II. Cities where the 1932 mayor was re-installed are shown in red. Cities without re-installation in hollows. We exclude federal city states (Berlin, Bremen, Hamburg, Lübeck) and cities that were merged to another city after 1932. *Geodata:* Bundesamt für Kartographie und Geodäsie (2020).

Table 1: City sample

	Full Sample (including merged cities)				Baseline
	Total	*West Germany*	*East Germany*	*Poland*	*West Germany*
	(1)	(2)	(3)	(4)	(5)
Mayor not re-installed		203	98	–	188
Mayor re-installed		44	12	–	41
Total	415	247	110	58	229

Notes: The table shows the composition of our sample of 415 German cities as of 1932. Column (1) to (5) report the full sample including also merged cities. Column (3) shows East Germany, column (4) former German cities which are now part of modern Poland. Our baseline sample consists of 229 cities in West Germany that where not merged to another city after 1932 (column (5)).

Table 2: Descriptive statistics

	Obs.	Mean	SD	Min	Max
	(1)	(2)	(3)	(4)	(5)
Re-installed					
Mayor re-installed	229	0.179	0.384	0	1
1932					
Debt					
Debt per capita (log)	229	5.300	0.575	1.844	6.774
Mayor characteristics					
Mayor life expectancy	197	22.479	5.724	10.120	39.470
Mayor tenure	229	10.157	7.466	0.000	37.000
Conservative party	123	0.398	0.492	0	1
City characteristics					
Population (log)	229	10.344	1.029	9.212	13.528
Population share catholics	229	43.289	30.298	1.600	97.100
Unemployment share	229	21.151	7.442	4.269	52.527
Employment share agriculture	229	6.143	4.628	0.724	31.193
Income tax per capita	228	54.835	19.305	14.130	169.470
Voter turnout	221	84.591	4.272	71.515	94.967
Left-wing vote share	221	35.299	10.275	9.415	59.303
2012					
Debt					
Debt per capita (log)	229	7.248	1.183	-0.167	9.037
City characteristics					
Population (log)	229	11.105	0.834	9.363	14.114
Population share catholics	229	33.120	16.200	5.485	73.103
Unemployment share	229	4.997	1.482	2.364	9.759
Share of agricultural area	228	37.701	14.707	6.047	78.170
Property tax	229	426.480	76.029	250.000	825.000
Income tax per capita	228	373.891	73.611	218.668	617.356
Voter turnout	229	69.217	4.791	52.000	80.100
Left-wing vote share	229	43.673	7.676	25.565	63.057

Notes: The table shows means, standard deviations, as well as minimum and maximum values of our dependent variables and all matching and control variables. The descriptives refer to the baseline sample of 229 West German cities (see, Table 1).

Table 3: Balancing of cities with and without a re-installed mayor

	Before propensity score matching			After propensity score matching		
	Mayor not re-installed	Mayor re-installed	Difference	Mayor not re-installed	Mayor re-installed	Difference
	(1)	(2)	(3)	(4)	(5)	(6)
1932 mayor characteristics						
Mayor life expectancy	21.880	24.432	2.552** (0.016)	24.008	24.432	0.424 (0.685)
Mayor tenure	11.255	8.105	-3.150*** (0.007)	8.703	8.105	-0.598 (0.587)
1932 city characteristics						
Debt per capita (log)	5.331	5.340	0.009 (0.923)	5.333	5.340	0.007 (0.938)
Population (log)	10.436	10.621	0.185 (0.381)	10.560	10.621	0.060 (0.777)
Population share catholics	42.608	45.339	2.731 (0.630)	45.250	45.339	0.089 (0.987)
Unemployment share	20.777	21.773	0.996 (0.394)	21.778	21.773	-0.004 (0.997)
Employment share agriculture	5.586	6.322	0.736 (0.365)	6.138	6.322	0.183 (0.827)
Income tax per capita	56.240	56.277	0.037 (0.992)	55.676	56.277	0.601 (0.864)
Voter turnout	84.624	83.405	-1.219 (0.143)	83.793	83.405	-0.388 (0.640)
Left-wing vote share	34.938	35.741	0.803 (0.640)	35.605	35.741	0.135 (0.937)
Obs.	153	38	191	153	38	191

Notes: The table shows the mean differences of the 1932 control variables between cities with and without a re-installed mayor before (columns (1) to (3)) and after balancing using propensity score matching (column (4) to (6)). The corresponding p-values of mean difference t-tests are shown in parentheses. Significance levels: * 0.1, ** 0.05, *** 0.01.

Table 4: Correlation of historical and today's public debt in German cities

| | Debt per capita 2012 (log) | | | |
	All mayors	Mayor not re-installed	Mayor re-installed	Difference
	(1)	(2)	(3)	(4)
Debt per capita 1932 (log)	0.134	0.028	0.869***	0.841***
	(0.411)	(0.873)	(0.000)	(0.002)
R-squared	0.004	0.000	0.249	0.023
Obs.	229	188	41	229

Notes: This table shows the correlation between 1932 and 2012 public debt in 229 West German cities. Results base on cross-sectional OLS regressions. Column (1) includes all mayors. Columns (2) shows the subsample of cities without a re-installed Weimar mayor, column (3) the subsample of cities with a re-installed mayor, and column (4) takes the difference. The coefficient in column (4) comes from a regression where we interact 1932 debt with the dummy for a re-installed mayor. The corresponding p-values are shown in parentheses. Significance levels (robust standard errors): * 0.1, ** 0.05, *** 0.01.

Table 5: Robustness tests

| | Debt per capita 2012 (log) | | | | |
	Mayor not re-installed	Mayor re-installed	Difference	R-squared	Obs.
	(1)	(2)	(3)	(4)	(5)
Baseline	0.028	0.869***	0.841***	0.023	229
	(0.874)	(0.000)	(0.002)		
I Clustered standard errors					
a) Clustered standard errors	0.028	0.869***	0.841**	0.023	229
	(0.865)	(0.006)	(0.012)		
b) Conley standard errors	0.028	0.869***	0.841***	0.023	229
	(0.906)	(0.000)	(0.002)		
II Sample variation					
a) + East Germany	0.138	0.706***	0.569**	0.018	335
	(0.385)	(0.000)	(0.017)		
b) + Merged cities	0.018	0.826***	0.808***	0.022	247
	(0.907)	(0.000)	(0.001)		
c) − Multiple mayor cities	0.040	0.869***	0.829***	0.024	219
	(0.822)	(0.000)	(0.002)		
d) Only 1933 expelled mayors	-0.152	0.879***	1.031***	0.043	134
	(0.241)	(0.001)	(0.000)		
e) − Deceased mayors	0.076	0.869***	0.793***	0.028	177
	(0.722)	(0.000)	(0.007)		
III Controls					
a) Propensity score matching (1932 controls)	0.064	0.871***	0.808**	0.076	191
	(0.792)	(0.000)	(0.011)		
b) Entropy balancing (1932 controls)	-0.261	0.871***	1.133***	0.090	191
	(0.282)	(0.000)	(0.000)		
c) Controls (1932 controls)	0.072	0.768***	0.696**	0.439	191
	(0.727)	(0.006)	(0.017)		
d) a) − Deceased mayors	0.131	0.871***	0.740**	0.070	140
	(0.636)	(0.000)	(0.034)		
e) a) + Mayor party	0.278	0.989***	0.711	0.088	112
	(0.634)	(0.000)	(0.254)		
f) a) + 2012 Controls	0.209	0.696***	0.488**	0.563	191
	(0.246)	(0.000)	(0.039)		

Notes: This table shows robustness tests for our baseline results. The coefficient in column (3) comes from a regression where we interact 1932 debt with the dummy for a re-installed mayor. The baseline corresponds to the regression without control variables and with robust standard errors. In the first panel, we vary standard errors. In the second panel, different samples are used. In the third panel, different control variables are included by using different balancing methods (Propensity Score Matching (Kernel) and Entropy Balancing). In III (c), no balancing method is used. Here, we only control for 1932 city and mayor characteristics in a single OLS regression. In III (a) through (c), the corresponding mayor characteristics are the 1932 mayor's tenure and his remaining life expectancy. As 1932 city characteristics we include population controls (population size, share of Catholics, unemployment share), share of agriculture, public finance controls (income tax revenue per capita and debt per capita) as well as political preferences (voter turnout and left-wing vote share in the federal election) in this specifications. In II (e) and III (d), we exclude all cities whose 1932 mayor died between 1933 and May, 1945 and thus could not be re-installed. In III (e), a dummy for 1932 mayors' party affiliation is included in the matching. In III (f), as 2012 city characteristics we include population controls (population size, share of Catholics, unemployment share), the share of agriculture, public finance controls (income tax revenue per capita, debt per capita and property B taxfactor) as well as political preferences (voter turnout and left-wing vote share in the federal election). The corresponding p-values are shown in parentheses. Significance levels (robust standard errors): * 0.1, ** 0.05, *** 0.01.

Table 6: East Germany and former German cities in modern Poland

	Debt per capita 2012 (log)		
	East Germany		Poland
	(1)	(2)	(3)
Debt per capita 1932 (log)	0.286	0.334	0.031
	(0.204)	(0.175)	(0.824)
Controls 1932	No	Yes	No
Controls 2012	No	Yes	No
R-squared	0.017	0.411	0.001
Obs.	106	98	51

Notes: The table shows the correlation of public debt in 1932 and 2012 in the sample of East German cities and cities now located in modern Poland. We only consider cities that were not merged to other cities after 1932. The corresponding p-values are shown in parentheses. Significance levels (robust standard errors): * 0.1, ** 0.05, *** 0.01.

Online appendix

Figure A1: Mayors of Munich, 1925–2015 (Mayor re-installed)
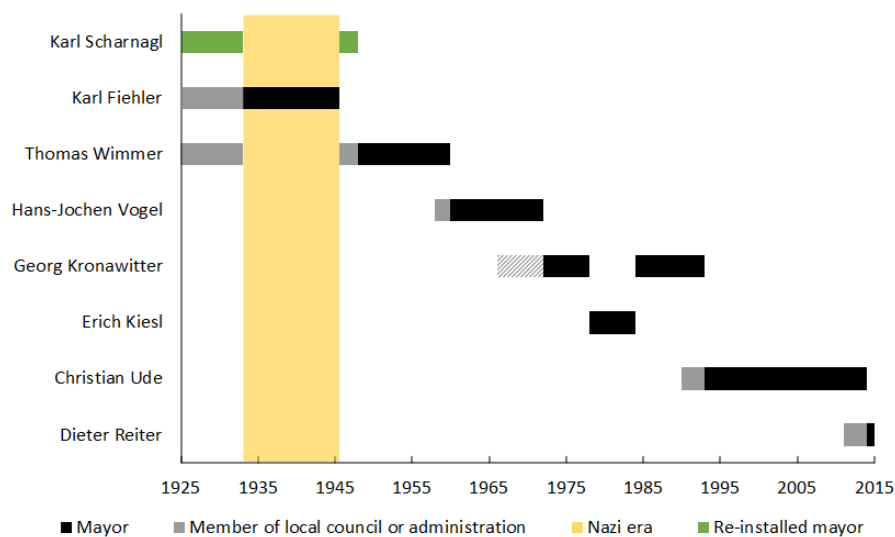
Notes: The figure shows the election terms of mayors of Munich since 1925 (black). The abbreviations in brackets give the mayor's party. Two mayors (Karl Scharnagl and Georg Kronawitter) served twice but interruptedly. Periods in gray indicate leading functions in the local administration (e. g., vice mayor) or membership in the local council. With the single exception of Georg Kronawitter who served as a member of the state parliament (representing Munich) before becoming mayor, all democratic mayors served in the administration or council under their predecessor. Karl Scharnagel was re-installed by the U.S. military government in 1945. He then appointed Thomas Wimmer, who had also been on the city council before 1933, as second mayor.

Figure A2: Mayors of Pforzheim, 1925–2015 (Mayor not re-installed)
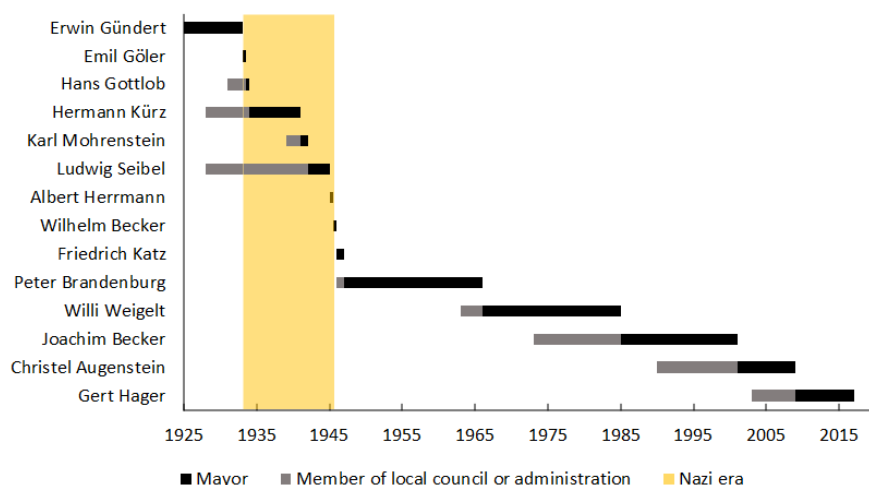
Notes: The figure shows the mayors of Pforzheim since 1925 (black). Periods in gray indicate leading functions in the local administration (e. g., vice mayor) or membership in the local council. Before becoming mayor, all democratic post-war mayors served in the administration or council under their predecessor. There is also some overlap in the pre-war period. Some of the later mayors of the Nazi era had already been active in the city administration since the late 1920s or early 1930s. Erwin Gündert, the mayor from 1932, died in May 1945. Wilhelm Becker and Friedrich Katz were the first post-war mayors. Both were appointed by the military government and had no political experience. Becker had previously worked as an entrepreneur. Katz worked at the Deutsche Bank.

Table A1: Correlation of historical and present-day outcomes in the baseline sample

Outcome	Correlation	Mayor not re-installed	Mayor re-installed	Difference	R-squared	Obs.
	(1)	(2)	(3)	(4)	(5)	(6)
Baseline (Debt per capita (log))	0.097	0.209	0.696***	0.488**	0.563	191
		(0.246)	(0.000)	(0.039)		
Population (log)	0.933	0.750***	0.776***	0.026	0.944	191
		(0.000)	(0.000)	(0.461)		
Population share catholics	0.943	0.424***	0.449***	0.025	0.938	191
		(0.000)	(0.000)	(0.457)		
Unemployment share	0.395	0.011	0.030	0.018	0.693	191
		(0.474)	(0.279)	(0.522)		
Income tax per capita	0.317	-0.441*	-0.375	0.066	0.841	191
		(0.091)	(0.203)	(0.853)		
Left-wing vote share	0.346	0.083*	0.106*	0.023	0.847	191
		(0.062)	(0.086)	(0.735)		

Notes: This tables shows the correlation of different present-day and historical outcomes in the baseline sample. Column (1) depicts Pearson's correlation coefficient r in the overall baseline sample. The coefficients in column (2) to (4) come from a regression where we interact the 1932 outcome with the dummy for a re-installed mayor. The coefficients in columns (2) and (3) represent the correlation of present-day and historical outcomes in the subsamples of cities without and with a re-installed mayor, the coefficient in (4) is the difference between (2) and (3) arising from the interaction term. The R-squared in column (5) refers to the regression with interaction term. The results correspond to the regression in Table 5, specification III f) where we match over 1932 city and mayor characteristics and additionally control for 2012 city characteristics and state fixed effects. The corresponding mayor characteristics are the 1932 mayor's tenure and remaining life expectancy. As city characteristics we include population controls (population size, share of Catholics, unemployment share), the share of agriculture, public finance controls (income tax revenue per capita, debt per capita and property B taxfactor[only for 2012]) as well as political preferences (voter turnout and left-wing vote share in the federal elections) at both points in time. . The corresponding p-values are shown in parentheses. Significance levels (robust standard errors): * 0.1, **0.05, *** 0.01.

Table A2: Data sources

Variable	Year	Data source	comment
Data on mayors	1920-1960	City archives, websites, city administrations (upon request), online archives	hand-collected data
Historical outcomes			
Debt per capita (log)	1932	Verband Deutscher Städtestatistiker and Arbeitsgemeinschaft für Gemeindliche Statistik (1934)	in Reichsmark per inhabitant
Mayor life expectancy	1932	Statistisches Reichsamt (1937)	Based on mayor's age and German mortality table for the years 1932 to 1934
Population (log)	1933	Statistisches Reichsamt (1934b)	Census data
Population share catholics	1933	Statistisches Reichsamt (1934b)	Census data
Unemployment share	1933	Statistisches Reichsamt (1934a)	Census data
Employment share agriculture	1933	Statistisches Reichsamt (1934a)	Census data
Income tax per capita	1932	Verband Deutscher Städtestatistiker and Arbeitsgemeinschaft für Gemeindliche Statistik (1934)	in Reichsmark per inhabitant
Voter turnout	1930	Falter, J. W. and Hänisch, D. (1990)	1930 Reichstag election
Left-wing vote share	1930	Falter, J. W. and Hänisch, D. (1990)	1930 Reichstag election
Housing destruction	1945	Verband Deutscher Städtestatistiker and Arbeitsgemeinschaft für Gemeindliche Statistik (1949)	Fraction of destroyed housing between 1939 and 1945
Present-day outcomes			
Debt per capita (log)	2012	Statistische Ämter des Bundes und der Länder (2014a, 2018); Koeppl-Turyna *et al.* (2016)	Total debt of the public budget (incl. core and extra budgets)
Population (log)	2011	Statistische Ämter des Bundes und der Länder (2014b)	Census data
Population share catholics	2011	Statistische Ämter des Bundes und der Länder (2014b)	Census data
Unemployment share	2011	Statistische Ämter des Bundes und der Länder (2014b)	Census data
Share of agricultural area	2012	Statistische Ämter des Bundes und der Länder (2015)	
Property tax	2012	Statistische Ämter des Bundes und der Länder (2013)	
Income tax per capita	2012	Statistische Ämter des Bundes und der Länder (2021)	Municipalities's share in income tax, per capita
Voter turnout	2013	Statistische Ämter des Bundes und der Länder (2020)	2013 Bundestag election
Left-wing vote share	2013	Statistische Ämter des Bundes und der Länder (2020)	2013 Bundestag election
Geodata	2020	Bundesamt für Kartographie und Geodäsie (2020)	

Notes: This table gives an overview of the variables included in our data set and the corresponding data sources.

Data Sources

BUNDESAMT FÜR KARTOGRAPHIE UND GEODÄSIE (2020). Datenlizenz Deutschland - VG250, Verwaltungsgebiete 1 : 250 000 - Version 2.0, Datenstand: 01.01.2020, Leipzig, 2020. Available online `https://gdz.bkg.bund.de/index.php/default/digitale-geodaten/verwaltungsgebiete/verwaltungsgebiete-1-250-000-kompakt-stand-01-01-vg250-kompakt-01-01.html`, last downloaded: 20-07-21.

FALTER, J. W. and HÄNISCH, D. (1990). Wahl- und Sozialdaten der Kreise und Gemeinden des Deutschen Reiches von 1920 bis 1933. GESIS Datenarchiv, ZA8013 Datenfile Version 1.0.0, Köln, 1990. Available online `https://doi.org/10.4232/1.8013`, last downloaded: 16-05-20.

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STATISTISCHE ÄMTER DES BUNDES UND DER LÄNDER (2014b). Zensus 2011, Bevölkerung, Ergebnisse des Zensus am 09. Mai 2011, Wiesbaden, 2014.

STATISTISCHE ÄMTER DES BUNDES UND DER LÄNDER (2015). Datenlizenz Deutschland - Bodenfläche nach Art der tatsächlichen Nutzung - Stichtag 31.12.2012 - regionale Tiefe: Gemeinden, Samt-/Verbandsgemeinden - Lizenz 2.0, Düsseldorf, 2015. Available online: 449-01-5a, last downloaded: 15-06-15.

STATISTISCHE ÄMTER DES BUNDES UND DER LÄNDER (2018). Integrierte Schulden der Gemeinden und Gemeindeverbände, Anteilige Modellrechnung für den interkommunalen Vergleich, 31.12.2017, Wiesbaden, 2018.

Statistische Ämter des Bundes und der Länder (2020). Datenlizenz Deutschland - Bundestagswahlen: Wahlberechtigte, Wahlbeteiligung, gültige Zweitstimmen nach ausgewählten Parteien - Wahltag - regionale Tiefe: Gemeinden, 22.09.2013 - Lizenz 2.0, Deutschland, 2020. Available online: 14111-01-03-5, last downloaded: 20-05-16.

Statistische Ämter des Bundes und der Länder (2021). Datenlizenz Deutschland - Istaufkommen, Grundbeträge, Hebesätze, Gemeindeanteil an der Einkommensteuer, Gemeindeanteil an der Umsatzsteuer, Gewerbesteuerumlage und Gewerbesteuereinnahmen- Jahressumme - regionale Tiefe: Gemeinden - Realsteuervergleich - Jahr: 2012 - Lizenz 2.0, Deutschland, 2021. Available online: 71231-01-02-5, last downloaded: 21-08-10.

Statistisches Reichsamt (1934a). Die berufliche und soziale Gliederung im Deutschen Reich, in den Ländern, Verwaltungsbezirken und Gemeinden mit 10000 und mehr Einwohnern nach der Berufszählung vom 16. Juni 1933, Sonderbeilage zu "Wirtschaft und Statistik", 14. Jahr. 1934, Nr. 24, Berlin: Verlag der Reimar Hobbing G.m.b.H., 1934.

Statistisches Reichsamt (1934b). Die Religionsgliederung im Deutschen Reich, in den Ländern, Verwaltungsbezirken und Gemeinden mit 10000 und mehr Einwohnern nach der Volkszählung vom 16. Juni 1933, Sonderbeilage zu "Wirtschaft und Statistik", 14. Jahr. 1934, Nr. 21, Berlin: Verlag der Reimar Hobbing G.m.b.H., 1934.

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