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Austerity and the rise of the Nazi party
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ABSTRACT

The current historical consensus on the economic causes of the inexorable Nazi electoral success between 1930 and 1933 suggests this was largely related to the Treaty of Versailles and the Great Depression (high unemployment and financial instability). However, these factors cannot fully account for the Nazi's electoral success. Alternatively it has been speculated that fiscally contractionary austerity measures, including spending cuts and tax rises, contributed to votes for the Nazi party especially among middle-and upper-classes who had more to lose from them. We use voting data from 1,024 districts in Germany on votes cast for the Nazi and rival Communist and Center parties between 1930 and 1933, evaluating whether radical austerity measures, measured as the combination of tax increases and spending cuts, contributed to the rise of the Nazis. Our analysis shows that chancellor Brüning's austerity measures were positively associated with increasing vote shares for the Nazi party. Depending on how we measure austerity and the elections we consider, each 1 standard deviation increase in austerity is associated with a 2 to 5 percentage point increase in vote share for the Nazis. Consistent with existing evidence, we find that unemployment rates were linked with greater votes for the Communist party. Our findings are robust to a range of specifications including a border-pair policy discontinuity design and alternative measures of radicalization such as Nazi party membership. The coalition that allowed a majority to form government in March 1933 might not have been able to form had fiscal policy been more expansionary.

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Introduction

The radicalisation of the electorate during the final years of the Weimar Republic contributed to the breakdown of democracy, ultimately triggering one of the greatest catastrophes of the twentieth century, the Second World War, with over 60 million casualties (about 3% of the 1940 world population). In the elections of May 1928, the National Socialist German Workers' Party (NSDAP or the Nazis) attracted about 2.6% of votes.[1] However, as Figure 1 shows, by the elections of September 1930, support for the Nazi party rose to 18.5% of the share of votes and by July 1932 it became the largest party in the Reichstag, with 37.7% of the votes. Although slightly losing ground in the elections of November 1932, support continued to rise to 44.6% of the share of votes in March 1933. 18 days later, the Reichstag passed the infamous Enabling Act, giving the cabinet full powers to pass legislation without approval of either the Reichstag or the President.

[Figure 1 about here]

How did this shift to the extreme far-right happen so quickly? Although economic factors (from the Great Depression to high unemployment rates) and socio-cultural conditions (the offences of the Treaty of Versailles) are well studied and played an indisputably important role in the rise of the Nazis, the rapidity of the growth of Nazi party supporters well into the Great Depression and in a period when reparations payments were de facto frozen remains the subject of considerable economic and historical debate (Childers 2010; Falter 1991; Falter et al. 1986; Ferguson 1996; Hoffmann 1965; Manstein 1988; Stephan 1931; Temin 1990).

In this paper we test an explanation that, although highly relevant to the recent resurgence in populism and extremism in the wake of crisis driven austerity, has received scant empirical attention and which is at the intersection of economic, social and political forces. How much did the severe austerity measures implemented by the preceding German government via a series of executive decrees between 1930 and 1932 compel voters to switch their allegiance to the Nazi party? During this period, Heinrich Brüning of the Center Party and Germany's chancellor between March 1930 and May 1932, implemented a set of harsh austerity measures via a series of executive decrees in order to balance the country's finances. These measures involved drastic cuts to government expenditure, increased rates of taxation, new taxes, and cuts to unemployment benefits, payments to pensioners, and welfare recipients. In addition the central government acted to centralize important fiscal decisions that were traditionally decentralized in the Weimar Republic. According to Brüning, the suffering they would cause would help elicit international sympathy for the Germans and help put an end to the unpopular reparations imposed at Versailles (Brüning 1970; Patch 1998).

[1] Otherwise stated the different elections refer to the general federal elections instead of presidential elections or referendums.

We find robust empirical support for idea that it was not just the absence of a coherent response to social suffering from government, but also the austerity policies that worsened such suffering leading the electorate to radicalise and polarize. With dashed hopes and a loss of faith in the Weimar Republic, fury and despair were channelled into the ranks of populists and demagogues, with the Nazi party campaigning against austerity and offering promises for a new era of prosperity. The lowest status groups and the unemployed turned to the Communists, but those just above in the economic hierarchy, who had more to lose from the tax hikes intended to enhance central government finances, likely favoured the Nazis. As Keynes cautioned after meeting with the Chancellor in 1932, "Germany today is in the grips of the most powerful deflation that any nation has experienced … many people in Germany have nothing to look forward to – nothing except a 'change', something wholly vague and wholly undefined, but a *change*" (italics in original, Moggridge 1992, 540).

To test this hypothesis, we use the district (*Kreis*) election returns in the Weimar Republic for the federal elections of 1930, 1932 (July and November) and 1933 transcribed by Falter (Falter and Gruner 1981), originally from the official Statistics of the German Reich (*Statistik des Deutschen Reichs*), and link them to different proxies for state- and district-level policy changes linked to austerity implemented by Brüning.[2] These measures of austerity, including changes in spending and taxation are collected from Reich official statistics. We also test several other potential explanations for the rise of the Nazis, such as unemployment, changes in wages and economic output, also from Reich official statistics. We employ both first differences and fixed effects models, along with a border-pair matching strategy like that in Dube et al. (2010), finding a politically and statistically significant and robust positive association between the depth of austerity and rising support for the Nazi party (either by voting for the Nazis or by becoming a member of the Nazi party). While "austerity" explains a relatively small fraction of the variance in outcomes across districts, marginal districts and marginal votes mattered. Hitler and the Nazis built a coalition in 1933 to form a majority. Under reasonable assumptions, the Nazis would have faced significant difficulty in forming this coalition had austerity not been pursued so relentlessly.

The rest of the paper is as follows: in the next section we provide a detailed account of the main existing explanations for the rise of the Nazis. Section 3 reviews the development of the different elections in Germany between 1930 and 1933. In Section 4 we explain the sources and methodology we use to calculate the impact of austerity on the rise of the Nazi party (Section 5). Finally, we discuss some of the parallels between what happened during the interwar period and the growth of radical voters in today's Europe (Section 6).

[2] We used Falter's data as organized by Adena et al. (2015).

2. Main explanations for the Rise of the Nazis

2.1 *The Great Depression and Economic Collapse*

There are many competing explanations for the stark rise of the Nazi party in Weimar Germany (Borchardt 1980; Bracher 1978; Satyanath et al. 2017; Temin 2010). The conventional explanation is the impact of the Great Depression. Those hit hardest by the economic downturn held the incumbent parties responsible for their situation, punishing them by voting for the Nazi party. The Great Depression began in 1928 in Germany (Ritschl 2002) with a sharp downturn in investment (Ritschl 1999; Temin 1971). Later, the cessation of capital inflows and the supply of loans to German banks culminated in a slowdown in the growth rate of credit, while other international shocks prolonged the downturn. The Depression-era was associated as much with a major decline in world trade as financial and monetary disturbances; it was a time of tariff increases, quotas, competitive devaluations, exchange controls, and the promotion of bilateral at the expense of multilateral trade (Crafts and Fearon 2013). As a result, Germany's GDP fell by one third from peak to trough and exports declined by 50% (Crafts and Fearon 2010; Grossman and Meissner 2010).

While economic hardship may seem to be an intuitive explanation, it is inadequate to account for the rise of the Nazi party (Ferguson 2001; Stephan 1931). As Table 1 shows, during the 1920s, there was no substantial difference in the economic performance of nations that, in the mid-1930s, were democratic regimes or dictatorships; the depth of the depression was only slightly greater in Germany than in France or the Netherlands, and was even worse in Austria (and other eastern European nations) and the USA.

[Table 1 about here]

2.2 *Unemployment as an Explanation*

A related leading explanation points to increasing numbers of unemployed workers, soaring from 1.4 million in 1928 to 5.6 million in 1932 (rising from 4.3% of the labour force to 17.4%).[3] However, there are two important caveats. One is that, as Table 2 shows, although by 1932 industrial unemployment in Germany was higher than in any other western country, it also reached very high levels in other countries such as Norway and the USA around that time, without being accompanied by electoral radicalisation.[4] The other caveat is that recent research on individual voting patterns has challenged the idea that the unemployed voted massively for the Nazi party. Those who were unemployed were actually more likely to vote for the Communist Party of Germany or the Social Democrats (in Protestant precincts) rather than the

[3] Unemployment figures are from Rahlf (2015). Unemployment is defined as someone who is in the labour force but is not working.

[4] Our comparison in Table 2 is between industrial unemployment. General unemployment was probably lower but we lack homogenous data for an international comparison.

Nazi party (Bromhead et al. 2013; Crafts and Fearon 2013; Eichengreen and Hatton 1988; Falter 1985, 1986; Ferguson and Voth 2008; Frey and Weck 1981; King et al. 2008; Patch 1998; Petzina 1977; Stephan 1932; Stögbauer 2000).

Paradoxically, it seems that the unemployed were disproportionately likely to reject the Nazis (King et al. 2008). According to Ferguson (1997, 267), "it is a popular misconception that because high unemployment coincided with rising Nazi support, the unemployed must have voted for Hitler. Although some did, unemployed workers were more likely to turn to Communism than to Nazism, whereas middle-class voters were relatively more important to National Socialist electoral success."

In fact, much of the growth in support for the Nazi party came from the middle classes, who were fearful of the Communists. The Kommunistische Partei Deutschlands (KPD) had achieved 16.9% of the vote by November 1932 (about 100 seats out of 584 in the Reichstag). The Nazis also received support from elites. During the 1920s, those with the highest incomes lost income more quickly than those at the bottom (Adena et al. 2015; Piketty 2014; Satyanath et al. 2017; Schreiner 1932). It was not that Hitler did not try to appeal the unemployed masses, but rather that the Communist Party was perceived as the party that traditionally represented workers' interests. Ultimately, Hitler's attempts to attract the unemployed were ineffective (King et al. 2008; Petzina 1977).[5]

[Table 2 about here]

2.3 *The Legacy of War Reparations*

A third major explanation invokes resentment about high debt repayments imposed on Germany in the Treaty of Versailles (Feinstein et al. 2008). These debts initially totalled 132 billion gold marks or 260% of 1913 GDP (for details of the calculations see Ferguson 1997 or Ritschl 2013, 113). Although France and Britain had similar post-war total debt burdens as Germany (Ferguson 1997, 266; Glasemann 1993; Heyde 1998), the Versailles agreements treated Germany as a conquered enemy, forcing it to pay the costs of the war. This placed financial demands on Germany that were very difficult to meet and which were dubbed as 'cruel' by some (Crafts and Fearon 2010; Crafts and O'Rourke 2014; Eichengreen 1992; Keynes 1920; Krugman 2015; Ritschl 2002; Sala-i-Martín 2015).

Keynes, as advisor to the British delegation in Paris, famously denounced these repayment terms in 1919, arguing that the reparations were economically irrational and politically unwise (Temin and Vines 2014). These overly punitive reparations, he argued, had the potential to

[5] In the various elections the Nazis promoted policies to support private property, entrepreneurship, 'autonomy' and improvement of the general economic situation – ideas that did not connect with the unemployed masses. Even some proposals for obligatory work were not viewed as measures for the unemployed, but as a means to stimulate the general economic situation.

cause economic collapse, famine, social instability and, as Keynes gloomily foreshadowed in the *Economics consequences of the peace*, ultimately, the rise of dictatorship (Keynes 1920). In Keynes's words: "The policy of reducing Germany to servitude for a generation, of degrading the lives of millions of human beings, and of depriving a whole national of happiness should be abhorrent and detestable –abhorrent and detestable, even if it were possible, even if it enriched ourselves, even if [it] did not sow the decay of the whole civilised life of Europe" (Keynes 1920, 209). However, the amounts dictated at Versailles were never fulfilled completely and most German war debts were postponed in the Hoover moratorium of June 1931 or temporally suspended in the Lausanne Conference a year later. The burden of debt had ostensibly already been relieved by 1932.

2.4 *Gold standard and the Twin banking crisis of July 1931*

While the three aforementioned explanations are the most prominent, several others are worth noting.[6] One is the problems that Germany faced in securing steady international lending, especially during the 'twin' banking and currency crisis of July 1931 (Bernanke and James 1991; Bordo and Meissner 2016; Eichengreen and Temin 2000; Grossman and Meissner 2010; James 2001; Schnabel 2004; Stucken 1968; Temin 2008).[7] In 1930 through mid-1931, the financial tensions in the global economy arising from an incipient banking crisis in Eastern Europe and Austria were exacerbated by the misguided foreign policy pursued by the Chancellor Brüning to confront debt repayment. In June 1931, as part of his Second Emergency Fiscal and Economic Decree, Brüning denounced the reparations regimes, arguing that Germany had paid all that it could. This news stunned not only Germany but also the world, and was followed rapidly by official denials that Germany would soon suspend payments on both reparations and private debts (Brüning 1970; Crafts and Fearon 2010).[8] Since Brüning's rhetoric created doubts about Germany's willingness to pay reparations, Germany struggled even harder to raise capital in the midst of the international financial crisis. After May 1931, capital inflows including those from the Young Plan loans fell sharply. Thereafter, attempts to attract new international loans failed (Accominotti and Eichengreen 2016; Crafts and Fearon

[6] Other explanations invoke the Weimar Republic's electoral system, which potentially cleared the pathway for small and radical parties to enter the Reichstag, with animosity between the two major parties of the left and difficulties to build lasting conditions (Eschenburg 1984; Hertz-Eichenrode 1982; Jepsen 1953).

[7] It is known as the 'twin crisis' because there was the simultaneous occurrence of disturbances in the banking sector and currency turmoil (Schnabel 2004).

[8] To avoid a formal recession and restore confidence by the international markets, in June 1931, US President Hoover, by means of the Hoover Moratorium, allowed Germany's war debts to be suspended for one year, giving temporary relief to German debtors. One year later, in July 1932 at the Lausanne Conference, reparations were formally stopped (Clement 2004; Schnabel 2004; Temin 1990). However, by then Brüning had already been forced to resign and Hitler was within reach of power. The Hoover Moratorium also arrived too late, since by early summer of 1931 German banks began to fail. Nevertheless, the Lausanne Conference maintained and protected the service of the Dawes and Young loans (Clement 2004).

2010; Feinstein et al. 2008; Helbich 1962; Ritschl 2013b).[9] Here James (2001, 17-18) explains that "whoever was responsible for the banking crisis had significantly worsened the German depression. Without that worsening, it is quite conceivable that Brüning might have survived longer and that Hitler and his movement might have 'faded into oblivion'." Ferguson and Temin (2003, 8) further discuss that after the twin banking crisis "the government responded by redoubling its resolve to continue down the path of austerity so resoundingly repudiated by the electorate."

2.5 *Fiscal Austerity and the Nazis*

Finally, there is the hypothesis that Brüning's domestic austerity measures led to a critical domestic loss of faith in the government (Bracher 1978; Oded and Schmidt 1933). As Figure 2 shows, Germany's total real government expenditure was cut by close to 15% (nominal total spending fell by about 28%) between 1930 and 1932. Real total revenue declined by about 15%, and real GDP declined by about 15%. Moreover, variation in fiscal policy at the state and local level is evident in Table 3 where there is a large variance in percentage changes in spending and average tax rates.[10] Changes in fiscal policy were not distributed evenly (Dell 2008; Feldman 1993a, 1993b; Wueller 1933).

Some "automatic stabilizers" were built into the Weimar system by way of an unemployment insurance scheme and a progressive income tax. Over the same period, the income tax (revenue over total taxable income) on high income earners increased by an average of 10% (see also Table 3). There were also significant cutbacks in unemployment benefits and payments to pensioners and welfare recipients (e.g., the disabled and war veterans) (Bernanke and James 1991; Feldman 1993a, 1993b; Ritschl 2013b; Temin 1990). Fiscal policy was far from expansionary and any cyclical adjustment to the fiscal balance would only strengthen this conclusion.

[Figure 2 about here]

[Table 3 about here]

Although Germany was not the only country hit by the Depression, it was the only major country to implement prolonged and deep austerity measures. For instance, on 21 September 1931 Britain and several other advanced nations in Europe left the gold standard. At this time, Britain also devalued sterling, which fell 25% against the dollar. Initially, after devaluation, the UK also implemented some budget-cuts but on the other hand, "Government expenditures

[9] When the crisis spread to Berlin and Brüning solicited aid abroad, Moret (at that time governor of the Bank of France) demanded first a withdrawal of Germany's request to reopen reparations negotiations; this request was never considered by Brüning's cabinet.

[10] Fiscal consolidation refers to the policy actions including tax hikes and spending cuts with the intent of reducing the budget deficit.

in Britain rose in 1930, as did the component of public spending directed toward goods and services" (Temin 1990, 63).[11] Hence economic historians have argued that, similar to Britain, "Germany should have been able to pursue expansionary policies after it had been forced to abandon the gold standard" (Wolf 2014, 20).

It is plausible that austerity could have influenced political views since it was implemented on a massive scale. Austerity ostensibly had a major impact on people's welfare. Brüning was commonly known as the 'Hunger Chancellor'. It also hurt the middle classes and elites, by massively increasing taxes on profits and earnings. Austerity deepened the Great Depression, exacerbating an already tense political and economic situation. There is in fact some consensus about these damaging economic effects although it is not founded on systematic empirical evidence so far as we are aware. In this vein, Eichengreen (2015, 139) argues that "radical cuts in public spending in a period when private spending was collapsing had the predictable effect of worsening the slump." Feinstein et al. (2008, 90) describe how "from the end of 1930 and through 1931, Brüning introduced a succession of austerity decrees imposing progressively harsher increases in direct and indirect taxation accompanied by reductions in civil-service pay and in state welfare benefits. The descent was cumulative and catastrophic." Ferguson (1997, 273) also argues that "There is little doubt that fiscal and monetary policy made the slump worse between 1930 and 1932."

Several authors have suggested that austerity could have contributed to the rise of the right-wing political extremism and the Nazi Party. Crafts and Fearon (2010) argue that "German economic policy during and after the crisis of July 1931 apparently contributed to the rise of the NSDAP." O'Rourke (2010) contends that "to someone who had lived through the 1930s, this would not have seemed at all strange … the Great Depression hit and everything fell apart. Thanks in part to Brüning's deflationary policies, Germany's national income fell by more than a quarter, and official unemployment rose to almost a third of the labour force. Optimism was replaced by a profound sense of insecurity. Inevitably, the extremist parties benefitted."

In considering the rise of the Nazis, Krugman (2015) also asserts that "we hear endlessly about the hyperinflation of 1923, when people carted around wheelbarrows full of cash, but we never hear about the much more relevant deflation of the early 1930s, as the government of Chancellor Brüning – having learned the wrong lessons – tried to defend Germany's peg to gold with tight money and harsh austerity." He further argues, "No, the 1923 hyperinflation didn't bring Hitler to power; it was the Brüning deflation and depression" (Krugman 2013).

Perhaps even more important than the readings of history is how Hitler himself viewed the impact of austerity in the winter of 1931 as a springboard to power. Twelve days after Brüning implemented his fourth and last emergency decree introducing more sweeping austerity

[11] Other countries such as Sweden and Norway also abandoned the Gold Standard in 1931, with similar unemployment rates, and implemented stimulus packages rather than deflation.

packages, Hitler issued a mass pamphlet titled '*Open letter from Adolf Hitler to the Reich Chancellor – The Great Illusion of the Last Emergency Decree*' as a response to the decree and the corresponding speech made by Brüning. While Hitler used populist rhetoric to channel Brüning's attacks on attacks his party to the Communists, it is decisive how Hitler ended his letter and the extent to which he viewed austerity packages as crucial to channelling mass frustration and reaching power: "Although that was not the intention, this emergency decree will help my party to victory, and therefore put an end to the illusions of the present System" (Hitler 1931).

Indeed, although the Nazis did not have a well-defined economic programme and the future over the Nazi economic policy was a large question mark (Brustein 1996; Evans 2005; James 1986, 345), between 1930 and 1932 the Nazis campaigned on an anti-austerity platform. For instance, in a mass pamphlet titled *Emergency Economic Program of the NSDAP* (*Wirtschaftliches Sofortprogramm der NSDAP*) issued in May 1932 (just before the federal elections of July 1932) they offered "fundamental improvements in agriculture in general, multiple years of taxation exemption for the settlers, cheap loans and the creation of markets by improving transportation routes, and making them less expensive." Regarding the welfare system, they held that "National Socialism will do all it can to maintain the social insurance system, which has been driven to collapse by the present System" and that for the care of the elderly, "we will make immediate preparations to carry out point 15 of the party platform: 'We demand a generous expansion of support for the aged.'" Voigtländer and Voth (2014, 1) also stress that promises for the construction of a highway were effective in boosting popular support for the Nazis, stressing that the "highway construction signalled economic "competence" and an end to austerity" (see also Ritschl 2013a).

Even though there has been speculation that austerity played a role in the rise of the Nazi party, to our knowledge no previous research has tested empirically whether austerity measures can explain the rise of the Nazis in interwar Germany.[12] One study evaluated the impact of the Great Depression and austerity on voting patterns on 171 elections in 28 countries (Bromhead et al. 2013) and another looked at the European level (Ponticelli and Voth 2011). Yet these have not taken into account the unique post-war context in Germany. There have also been cross-sectional studies with aggregated data for Germany but not at the district or regional level (Ritschl 2013b; Stögbauer and Komlos 2004). There is also an older literature, most of it in German and not using data, debating whether there was an alternative to austerity and if

[12] Stögbauer and Komlos's paper (2004) looks at how far unemployment should have declined to prevent the Nazi party's participation in the government. The paper considers the theoretical potential impacts of budget expenditure. However, as already seen, the paper is conceptually misleading, as the unemployed did not generally vote for the Nazi party. Hence there is little interest in how much unemployment could have declined in order to avoid the rise of the Nazi party, as Hitler would have won the elections without a single vote from the unemployed (King et al. 2008). Moreover, the paper did not use any data on budget expenditure. Instead, it conceptually links the amount by which unemployment in each electoral district would need to decline to a hypothetical positive tax, and might not be considered more than a hypothetical counterfactual exercise.

Brüning could have done something to avoid the rise of the Nazis (Borchardt 1979). We summarize this historical debate in the concluding section.

3. The last Chancellor of the Weimar Republic and his Austerity Measures

By 1930 the economic situation was so disturbing that President Hindenburg dismissed the government headed by Chancellor Müller and offered the Chancellorship to a group of unelected technocrats headed by Brüning. Brüning ruled the country by emergency decrees (*Notverordnungen*) under Article 48 of the Weimar Constitution. As highlighted in Brüning's memoirs written by Patch (1998, 77) "Brüning did not take office with any plan for specific diplomatic initiatives, but a passionate determination to regain for Germany the autonomy of a Great Power inspired all his efforts to balance the budget" (see also Brüning 1970).

The central focus of Brüning's domestic economic programme was to lower reparations payments as he was convinced that there was no alternative (Crafts and Fearon 2010; Eichengreen and Temin 2000; Mommsen 1989; Temin 1990). Reparations payments equalled roughly 20% of Reich spending *circa* 1930. Brüning's tactic was, in part, to impose austerity in hopes the suffering of the German population under austerity would create international sympathy and end the difficult debt reparations under the Treaty of Versailles (Eichengreen 2015). When Patch (1998) reviews the meeting between Keynes and Brüning in 1931, he recalls that the British economist was shocked by the determination of Brüning to stop reparations and to implement a programme of austerity, and that Keynes commented that Brüning had a "unanimous and overwhelming determination to pay no reparations whatever… any German minister who was to make any statement inconsistent with this could not survive a week."

Brüning's austerity measures began in spring 1930 with a policy of tight credit and a rollback of civil service salary increases, cuts in unemployment insurance benefits and government expenditure, and tax increases (Mommsen 1989; Schmidt and Ostheim 1949). This plan was highly unpopular among the majority of the Reichstag members, leading President Hindenburg to dissolve the Reichstag and call new elections. In the following elections of September 1930, Brüning garnered sufficient support to be elected Chancellor, despite the Nazis emerging as the second largest political party. Yet, according to Ferguson and Temin (2003, 8), "the spectacle of the government bowing to foreign creditors (whose connection to the austerity package was too obvious to escape acrid public comment at home) reduced the government's popularity still more."

The September 1930 election was a key turning point in German history, not only because the Nazi party increased its vote share by 15.8 percentage points, but also because it was seen as a withering verdict against austerity –a message that went unheeded. As discussed by Temin (1990, 82-83) "the tremendous gains of the Nazis in the 1930 election carried a frightening

message if Brüning had wanted to see it. Historians have debated whether the German people wanted the Nazis only because of economic distress or because of other, darker factors as well. But it is clear that the vote of 1930 was a resounding rejection of Brüning's policies at an early stage."

Article 48 of the Weimar constitution gave Brüning full constitutional powers to initiate his proposed austerity measures by emergency decree (and hence avoid Parliamentary negotiation). While austerity had been seemingly rejected by the electorate and other parties, many were willing to accept such policies due to fears that financial calamity would unleash an even worse extreme right-wing alternative. In the creditors' eyes, this commitment to austerity provided insurance against a formal default and economic chaos (van Riel and Schram 1993).

3.1 *Austerity and the fiscal system in the Weimar Republic*

Government spending as a share of GDP in 1929 was 29.6% (James 1986, 52). Between 1930 and 1932 government expenditure in nominal terms was cut by roughly 30% while aggregate nominal GDP fell slightly less. Brüning's austerity measures were likely to be extremely economically painful especially if reference to a cyclically adjusted deficit were to be made. Particular sectors were hit harder than others. Using nominal data from the Prussian provinces, the largest cuts were to housing (95.8%), healthcare (71.8%), transfers to localities (46.2%), infrastructure (43.2%), economy and trade (38.9%), economic development (31.8%), general administration (30.4%), education (28.2%) and law and state security (24.2%).[13] Box 1 describes the four main emergency decrees and their corresponding austerity packages.

[Box 1 about here]

The Weimar revenue system, a product of earlier negotiations and compromises in the 1920s comprised many different taxes. The key taxes in order of importance for total revenue collected in 1929 were incomes taxes (20%), property and property equity taxes (20%), business, corporation, and transactions (14%), turnover (7%), and a host of excise duties as well as reparations levies. The Reich controlled several rates of taxation via national legislation on important taxes such as income and corporations taxes as well as on customs duties and tobacco and sugar taxes. National and lower level authorities had concurrent authority over some taxes such as on alcohol. The states and municipalities were in charge of property and buildings taxes while states set property equity taxes. The latter were shared with local authorities. Feldman (1993a, 221) notes that as of 1928 56% of all tax revenue in Germany derived from classes of taxation on which the Reich directly controlled the statutory rates. Meanwhile 54% of state revenue and 39% of local authority revenue was accounted for by

[13] These calculations are using data from the *Statistisches Jahrbuch für das Deutsche Reich*, various issues.

taxes over which these units had no control over statutory rates (Feldman 1993a, 225). In 1929 local authority revenues were about 1/3 of total revenues, state revenues 20% and the Reich accrued 48% of all revenue.

Centralisation of spending and taxation began to occur progressively after 1928 in connection with the austerity drive (Feldman 1993a, 1993b). Feldman (1993a, 222-223) notes the Reich began to limit the ability of states to raise property tax rates and in 1932 it attempted to limited local authority spending. Reich spending accounted for 51% of all expenditure in 1928 and importantly it set (minimum) rates of pay on civil servants and minimum levels for sickness benefits (Feldman 1993a, 222). Unemployment insurance benefits and contributions were also determined at the national level, and the Reich was responsible for deficits in these funds and also for supplementing payouts with "relief" payments once insurance benefits had expired.

In 1928 the Reich directly received 24.5% of total income and corporate tax revenue, whereas 36.8% went to the states and 34.4% to local governments (the remainder, 4.3%, was due to the Hanseatic cities). By 1932 the Reich share of the income and corporate tax revenue rose to 32.3%, but the states still accounted for a significant level with 35.5% and the local governments 28.4% of total revenue from these sources. As James (1986, 76) observes "the Reich Government indeed deliberately pushed responsibility for unpopular measures onto Länder governments struggling to maintain parliamentary majorities" where regional governments were "left with odious taxes and falling revenues."[14]

Although austerity was determined by governmental decree at the Reich level, the extent to which it mattered for the budget constraint varied by state and locality. We believe that the source of this variation mainly depended on how reliant lower levels of government were on different types of taxation. We also know that around 40% of the spending cuts were implemented by local authorities, 22% by the different states and around one third by the Reich (Newcomer 1936).[15] However, the extent to which they were applied in each state and district varied according to a number of factors (see Newcomer 1936, 205), including population and land area, the level of unemployment, number of schools, highway mileage, distribution of income and affinity to Brüning's policies by the minister-president in each state. Newcomer (1936, 205) goes on to state however that "It is unfortunate that the equalizing factors adopted have been vitiated in a number of instances by guarantees of pre-war income."

While local politicians could shift spending between categories they were also likely to be constrained both by an inability to legislate tax rates, and by the traditional ways of re-

[14] James also noted that "the Reich did nothing to lessen the discomfiture of the Länder in the depression: on the contrary. Attempts to impose savings in the crisis bore the marks of the Reich's hostility to Land governments … In consequence the Länder and the communes actually had to take steps to increase their own tax revenue in order to make their budgets balance … Bavaria, Saxony, and Baden introduced the slaughter taxes … [and] between July 1932 and January 1933 the slaughter tax was extended to all German Länder" (James 1986, 76).

[15] For comparison, Feinstein (1964, 31-36, 86) calculated that in 1931 the UK central government controlled 62% of the total expenditure.

distributing tax revenue. Financial reforms of the 1920s, determined that income taxes, historically only levied by the states, would largely be re-distributed by the Reich to the states that collected them, but again, at the rates set by the Reich. Wueller (1933, 36) notes: "the proceeds from all enumerated taxes are redistributed among the states on a strict origin basis. The individual needs of any state do not enter into the federal-state distribution index…."

According to Wueller (1933), there were two main theoretical bases for collection and re-distributing revenue (from higher levels of government): origin and population. While the origin base (passing back of money to the locality where it was collected) failed to take into account of the local need factor, redistribution by the population principle could be effective in terms of 'need'. Wueller (1933, 39), states that "communal need increases with increasing population density." The extent of re-distribution however depended on state political bargains and the tax in question. Key taxes we are interested in such as the income tax were, as mentioned, distributed according to origins. While it was true that "In Prussia, for example, the proceeds from the turnover tax are distributed exclusively on the population base," the income tax was primarily distributed in relation to residence of taxpayers and based on origin; "Bavaria divides all save 5 percent of its income tax quota on the origin base," and "Saxony distributes three-fifths of its income tax quota on the origin base" (Wueller 1933, 38).

Regarding the level of fiscal autonomy, James (1986, 74) notes that "for the South Germans, almost all political issues of importance were resolved not in Berlin, but in Karlsruhe, Stuttgart, and Munich." Table A1 shows Germany's decentralised budget, comparing the shares of central and regional expenditure in Germany with other Western economies. Relative to other Western nations, roughly half of all government expenditure was decided by states and districts, with regional units having significant capacity to shape their expenditure. Still, it would be a mistake to think that central government fiscal decisions had no impact locally. Our bottom line is that when we look at total expenditure and at income tax revenue these variables were largely out of the hands of state governments and local authorities.

3.2 *Brüning's fall and the rise of dictatorship*

On 30 May 1932, Brüning was removed from the Chancellorship and Hindenburg appointed a minority cabinet headed by von Papen. As the new chancellor, von Papen began introducing some stimulus packages, involving employment programmes, tax credits and subsidies for new employment, public works projects, and agricultural improvement (Feinstein et al. 2008; Schneider 1986). Germany's economic situation began to improve; between 1932 and 1933, GDP grew by 5.77% (in the previous years, GDP fell by 7.93% between 1931 and 1932, and 8.10% between 1930 and 1931); the unemployment rate declined by 7.6 percentage points (it

increased by 9.5 percentage points between 1931 and 1932 and, by 11.6 percentage points between 1930 and 1931).[16]

These changes appeared to have led to modest gains in political support and temporarily delayed the Nazi's rise. Between the elections of July 1932 and November 1932 the Nazi party dropped from 608 seats in the Reichstag to 584. As O'Rourke (2010) explains, "by this stage Brüning was gone, his successor adopted some modestly stimulative policies, and there were signs of a partial recovery. Not coincidentally, in November 1932 the Nazi share dipped to 33.1%; but by then it was too late, and the Weimar Republic was doomed." However, von Papen had virtually no support in the Reichstag and in attempt to increase his support call for new elections in July and November of 1932. Yet, given the upswing by the Nazi party by December 1932, Hindenburg appointed Schleicher of the German National People's party (DNVP) as Chancellor. He lasted for less than two months. Adolf Hitler was appointed chancellor on 30 January ahead of the decisive elections of March 1933.

In March 1933, the Nazi party became the largest elected party in the German Reichstag (with 44.4% of votes). Despite the fact that the Nazis launched a campaign of terror against their opponents the weeks before the election and elections were held just six days after the Reichstag fire, arresting the communist leaders and restricting the freedom of press (Adena et al. 2015) the Nazis failed to win an outright majority. The Nazis needed the votes from a small-party, the DNVP, which had accumulated 8% of the vote, for a bare working majority in the Reichstag. Hitler was re-appointed as Chancellor, albeit in a government where all but two members were conservatives, with von Papen as Deputy Chancellor. Shortly thereafter, on 23 March, in coalition with the German National People's Party and the Catholic Centre party,[17] Hitler introduced the Enabling Act, changing the constitution to allow the cabinet to pass laws without reference to either the Reichstag or the President.

By the summer of 1933, all parties except the Nazi party had been dissolved and trade unions were abolished. The Nazi party programme of 1933 included a clear departure from austerity, including massive state-funded public works such as housing, land conservation, and even the construction of a highway across Germany (Voigtländer and Voth 2014). Next we turn to assessing the association of austerity measures with rising vote shares for the Nazi party, across Germany's district levels.

[16] GDP data form the Maddison project (Bolt and van Zanden 2014) and unemployment from Eichengreen and Hatton (1988, 6-7).

[17] Since the Communist were arrested they did not vote and some Social Democrats were kept away from the chamber during voting. The act passed with two-thirds of those present and voting.

4. Data and methodology

We collected data on the Nazi party vote share for the five Reichstag elections between 1930 and 1933 at the district level (n = 1,024) from the official publication *Statistik des Deutschen Reiches* (ICPSR 1999) (Figure 3). These data have been previously used by other authors (Adena et al. 2015; Voigtländer and Voth 2014) and were initially collected and used by Falter (Falter and Gruner 1981). As individual-level data are unavailable, we use aggregate data from small geographic units, recognising the limitations of all ecological studies. We use municipal and state level data on government spending (in 1,000 RM) taken from the *Statistik des Deutschen Reiches*, which includes state and municipal spending on the main budget areas. Data are for the fiscal years, which run from the first day of April in a year to the last day of March in the following year. From the same source, we also collected the data on state-level unemployment (people in the labour force not working),[18] a proxy for state-level economic output (generation of electricity, in 1,000 kWh), and city-level hourly wages. We created a state-level index of nominal wages averaging the monthly data from the hourly wages paid in four occupations (construction, wood and skilled and unskilled workers in metallurgy) in 38 big cities which have been located within each of the states.

From *Die Einkommen- und Körperschaftsteuerveranlagungen* and *Steuerabzug von Arbeitslohn* (which are reported under the official *Statistik des Deutschen Reichs*) we collected state and district level data on the number of taxpayers, total taxable income, and total revenue for each state (in 1,000 RM) on two taxes: wage and income taxes. We collected the data on the *Lohnsteuer* (*steuerabzug vom arbeitslohn*), a tax on wages, and an ex-post declaration-based income tax (*Einkommensteuer*), which is the sum of direct taxes on incomes and contributions to social security and unemployment insurance.[19] Data were available for the *Lohnsteuer* in 1928, 1932, and 1933 and for the *Einkommensteuer* for the years 1928, 1929, 1932, and 1933 (see Dell 2007, 384, Tab. 9A1). Despite data being unrecorded for some years, the available years allow us to capture the main changes in taxation in the period of interest (1930-1933). Income taxes were among the most decentralized taxes and nearly three fourths of the income taxes went to state and local governments where "The income and corporation taxes alone supplied four fifths of the state and local share in national taxes in 1928-29" (Newcomer 1936, 195)."[20] To test competing explanations, we also operationalised changes in economic output. Here we use a proxy of electricity utilisation, as these two correlate closely,

[18] This is measured as those receiving ongoing support from or enrolled in the employment offices. For details see for example the *Statistisches Jahrbuch für das Deutsche Reich* of 1932 page 418. Yet, as this source recognises, it is possible that this measure undervalues unemployment levels as some people may have not registered in the employment offices or due to special situations (e.g., sick problems, etc.).

[19] We also digitalized data on corporate taxes (*Körperschaftsteuerveranlagung*), but not used them, as according to James (1986, 64), "The level of corporation tax was left unchanged (at 20 per cent of corporate net income)."

[20] Although Newcomer did not clarify it, it seems that she groups 'income and corporate taxes' and 'turnover taxes'.

since the vast majority of goods and services are produced using electricity. We further include a measure of unemployment and also wage deflation though an index of nominal wages.

[Figure 3 about here]

5. Austerity and the rise of radical voters in interwar Germany

Figure 4 shows the unadjusted and positive association between the degree of rises in income taxes and the vote share for the Nazi party between elections in September 1930 and March 1933 (r=0.29, p-value=0.000). Between September 1930 and March 1933 the number of votes for the Nazi party increased from 6.4 million to 17.3 million and average income tax rates by 10 percent (average across all districts).

[Figure 4 about here]

Next we test this association after conditioning on several variables. We report the results of statistical models where the dependent variable is either the change in the share of votes for the Nazi party between elections or the levels of the Nazi vote share (when using district fixed effects) across districts. We begin our analysis using district level taxes. When we include district and time fixed effects, the model yields a difference-in-differences with an intensity of treatment interpretation based on:

$$\text{NAZI}_{dt} = \beta_1 \ln(\text{Avg. Tax Rate}(a))_{dt} + \beta_2 \ln \text{Wages}_{st} + \beta_3 \ln \text{Unemployment}_{st} + \beta_4 \ln \text{Output}_{st} + \mu_d + \delta_t + \varepsilon_{dt} \quad (1)$$

Where d is a district, t is an election period (September 1930, July 1932, November 1932 and March 1933), s is a state and NAZI denotes the vote share of the Nazi party as measured by the ratio of the number of votes to the Nazi party over the total number of (valid) votes cast. The index a denotes the way we measure austerity, simply as the natural logarithm of the district average tax rate of income or wage taxes. The average tax rate is calculated as the tax revenue divided by total declared taxable income. Additionally, $\ln \text{Wages}_{st}$ is the level of nominal wages in a state from the indexed basket of wages, $\ln \text{Unemployment}_{st}$ is the log of the level of the number of unemployed in a state, Output_{st} is our proxy for economic output in a state and ε_{it} is an error term. These control variables are also expressed in natural logarithms.

For all of our elections which took place in 1930, 1932 or 1933 we use values of the fiscal (and other) controls in 1930 and 1932. Wage taxes were only available for 1928, 1932 and 1933 and the income taxes only available for 1928, 1929, 1932 and 1933. Spending data at the local level is unavailable in national sources. Since the fiscal year ran from April to March the last two elections in 1932 and 1933 should see the cumulative impact of austerity policies imposed from spring 1930 up to late spring 1932. We also include district fixed effects (μ_d) and a fixed effect for the fiscal year 1932/1933 (δ_t). We report standard errors clustered at the district level and

to account for spatial autocorrelation also at the state and district level with the methodology of a two-way clustering developed by Dube et al. (2010). The number of clusters is somewhat low (clusters are given by the total number of states and provinces), but state level correlations are less of a concern since district fixed effects pick up the state fixed effects. Finally, in columns 1 and 2 we use observations for the elections of September 1930 and March 1933. In columns 3 and 4 we use the elections of September 1930 and the two elections of July 1932 and November 1932 and in columns 5 and 6 we use all three later elections and that of September 1930. These specifications allow for the accumulated impact of austerity in districts that had a greater rise in the tax burden relative to areas which had lower treatment intensities. Our identifying assumption, following the description of fiscal policy and austerity in Section 3.1, is that tax rate hikes were determined at the national level and so exogenous to the circumstances of the districts. Of course the incidence of tax changes could vary with the initial level of the income distribution but with a stable distribution of income, or after controlling for such changes and with district fixed effects we are isolating the impact of exogenous policy changes.

In Table 4 we find strong evidence that Brüning's fiscal reforms as measured by increases in district level taxes are positively and statistically significantly associated with vote share for the Nazi Party. For instance, using a two-way clustering for the difference between the elections of 1930 and 1933, the rise in vote share for the Nazi party associated with a one log point change in the natural logarithm of the average tax rate is 10.057 using income taxes (95% CI: 2.06 to 18.05) and 15.888 using wage taxes (95% CI: 5.53 to 26.24). A change equal to a one standard deviation rise in the log income tax rate, corresponds to one-tenth of a standard deviation of the dependent variable. For wage taxes, a change equal to a one standard deviation rise in the ln income tax rate, corresponds to a rise of 0.075 standard deviations of the dependent variable.

In terms of the relative size of the effect between tax instruments, the fact that in general the coefficients using district wage taxes are above those using income taxes is in part due to the degree of tax avoidance between taxes. Ferguson and Granville (2000, 1,068) argue that "income taxpayers outside the withholding tax system applied to wages had a strong incentive to delay payments" and Dell observes (2007, 408) that "most of the avoidance/evasion does not take place at the bottom of the distribution, which is very unlikely because this bottom is mostly made of wages and salaries which cannot avoid taxation easily." Hentschel (1989, 779) also explains that the "tax withheld at source from wages and salaries … provided little opportunity for manipulation." Therefore using state level taxes it is plausible that the effects of austerity are more clearly revealed with the wage tax.

We also tested potential competing explanations. Consistent with prior studies, we find that unemployment is negatively and significantly associated with the share of votes for Nazis across models. The impact of unemployment on the rise of Nazism has been studied during the

past 30 years and several scholars using district data have also found no relationship or a negative one (Falter 1986; Satyanath et al. 2017; Stögbauer 2000; Voigtländer and Voth 2014). In fact, those suffering from unemployment in Weimar Germany gravitated towards left-wing and communist parties, whereas a populist option that clearly excoriated the political establishment was more attractive for those for whom austerity was the most salient effect of government policy. Changes in wages, capturing deflationary policies, were not statistically significant. However, it is possible that this lack of significance is due to the deflationary policies themselves. If prices also fell sharply, the decline in prices might outstrip the decline in wages. Hence, it is possible, as argued by Ritschl (2013a, 2013b), that as nominal wages fell, producer prices declined faster, negatively affecting demand for labour and investment. This "highlights a fundamental dilemma of German deflationary policy, the inability to enforce wage cuts that would outpace price declines" (Ritschl 2013b, 22). Similarly, Voth (1993, 287) also argues that the "deflationary pressure was so strong that, despite the nominal decline, real wages actually rose."[21] Both declines in wages and prices were part of Brüning's fiscal reforms. Finally, output is statistically and negatively correlated with the vote share for the Nazi Party. As already noted, the Nazi economic programme in the different elections was less than precise but tended to be anti-austerity (James 1986), and Brüning's discourse until 1932 was quite efficient in 'instrumentalizing' the depression in order to pursue austerity.

[Table 4 about here]

5.1 *Cross-district models in differences across elections*

We next performed a series of further robustness and specification checks. First, in Tables 5 and 6 we model the impact of austerity on Nazi vote share using long differences across election years with the following equation:

$$\Delta \text{NAZI}_{dt} = \alpha + \beta_1 (\%\Delta \text{ Avg. Tax Rate } (a)_{s/dt}) + \beta_2 (\%\Delta \text{ Wages}_{st}) + \beta_3(\%\Delta \text{ Unemployment}_{st}) + \beta_4 (\%\Delta \text{ Output}_{st}) + \varepsilon_{dt} \quad (2)$$

Where taxes are indexed by districts *d*, of states, *s*, *t* is an election period (September 1930, July 1932, November 1932 or March 1933) and %Δ denotes the difference across election years in percent (x 100); NAZI denotes the percentage point vote share of the Nazi party in the four different elections, and the difference Δ is taken between the three later elections and the initial election of September 1930. In column 3 of Table 5 we add the lagged Nazi vote share

[21] Economic historians have engaged in bitter controversies about the wage structure of the 1920s before austerity measures were implemented. One argument is that wages were too high and that they actually outstripped increases in labour productivity. This increased the cost of production, squeezed the profits of industry, and obstructed the formation of capital (Dimsdale et al. 2006), ultimately raising the natural rate of unemployment (Broadberry and Ritschl 1995). Hence, declines in wages in the early 1930s may have also alleviated some of these effects of a high wage economy.

to control for differential growth based on initial Nazi support. Lagged values refer to the election immediately prior to the latest election in the differenced dependent variable. In column 4 we also add state fixed effects which allows for differential state-level trends and potentially mops up some of the within state correlations in the error terms of the differenced model.

The results are very similar quantitatively and qualitatively to those in Table 4. Results for column 3 using income taxes show that the rise in vote share for the Nazi party associated with a one percent rise in the average tax rate is 0.040 using income taxes (95% CI: 0.022 to 0.066) and 0.107 using wage taxes (95% CI: 0.06 to 0.159). The variable lagged Nazi vote share is statistically significant in both Table 5 and 6. Allowing for state level fixed effects diminishes somewhat the size of the coefficient from column 1 when using wage taxes but raises it in the upper panel when using income taxes.

[Table 5 about here]

5.2 *Cross-district models in differences for the different elections*

Next, in Table 6 we model the impact of state level measures of austerity on the district level Nazi vote share in differences with the following equation:

$$\Delta \text{NAZI}_{dt} = \alpha + \beta_1(\text{Austerity}(a)_{st}) + \beta_2(\%\Delta \text{Wages}_{st}) + \beta_3(\%\Delta \text{ Unemployment}_{st}) + \beta_4(\%\Delta \text{ Output}_{st}) + \varepsilon_{dt} \quad (3)$$

We measure austerity in three ways, all the measures expressed in percentage changes (x 100). In panel 1 we use the sum of state and municipal spending cuts (i.e., -100 times the percentage change in nominal spending). Mainly, local and state spending cuts reflect cuts in the salaries of public servants, pensioners, welfare and social services such as health coverage, housing, education and infrastructure. In panel 2 and 3, following the methodology of the IMF, we also define austerity as the size of the fiscal consolidation: the combined percentage change in average tax rates (wages or income taxes) and spending cuts.[22] Average tax rates are calculated as the tax revenue divided by total taxable incomes of various sorts at the state level. In panel 2 we show the results using the sum of state and municipal spending cuts and percentage changes in the wage tax rate and in panel 3 with changes in the income tax rate.[23] NAZI again denotes the percentage point vote share of the Nazi party. The dependent variable is thus the change in the ratio of the number of votes to the Nazi party over the total number of (valid) votes cast between two elections (measured in percentage points).

[22] The IMF defines fiscal consolidation as a policy result of increases in taxes and/or cutting expenditures to adjust the fiscal balance (see IMF 2010).
[23] By tax rate we mean the average tax rate or total revenue divided by the total taxable income in each category.

In Table 6 we study three different changes in isolation: first, a difference in Nazi vote shares between September 1930 and July 1932, a period witnessing a massive electoral bump for the Nazis; second, the change in Nazi vote shares between September 1930 and November 1932; and third, the change between September 1930 and March 1933. In columns 7, 8 and 9 we also weight the regressions by the level of population to emphasize the data from the larger provinces and states and eliminate undue influence from smaller states (Solon et al. 2013). We cluster robust standard errors at the state level and since we use differences of all variables, time-invariant unobservable heterogeneity explaining the level of Nazi vote share at the district level is eliminated as if we had included district fixed effects in a regression of levels of variables, differencing out any district-level differences in propensity to vote for certain parties and other cross-district economic and social level differences.

Table 6 presents the cross-district differences models in association with our three measures of austerity. Regardless of how we measure austerity, the estimated association of austerity with the Nazi vote share is positive and statistically significant in most of the models considering the different elections between 1930 and 1933. Larger p-values are found for the state level income taxes but this might be related to higher tax avoidance at the state level. From the three different changes, our preferred specification is the change between 1930 and July 1932 (columns 1 and 2). The elections of 1933 were not completely free with the SA and the SS instigating violence first against the Communist and after February against Social Democrats and other parties (Evans 2003, 2005) and by the elections of November 1932 Brüning was discharged from the Chancellorship, with von Papen implementing some fiscal expansion.[24]

Using the cuts in expenditure (panel 1), the rise in vote share for the Nazi party associated with a one percent rise in expenditure cuts is 1.825 in column 2 (95% CI: 0.51 to 3.14) and 1.040 in column 4 (95% CI: 0.01 to 2.07). A change equal to a one standard deviation rise in the budget cut, corresponds to a 2.16 percentage point rise in the support to the Nazi party between the elections of September 1930 and July 1932 or one quarter of one standard deviation of the dependent variable. Later on (Table 8) we also show that the effect using cuts in social expenditure alone are much higher. For instance, a change equal to a one standard deviation rise in cuts in health, corresponds to a 5.49 percentage point rise in the support to the Nazi party. For the fiscal consolidation 1 using wage taxes (panel 2) the effect is also significant. For instance, in column 2 (1.033; 95% CI: 0.01 to 2.07) a change equal to a one standard deviation of the fiscal consolidation (i.e., 2.35), corresponds to a 2.44 percentage point rise in the support to the Nazi party between the elections of September 1930 and July 1932 or one quarter of one standard deviation of the dependent variable. This yields a sizable effect. Adena et al. (2015) find that exposure to the Nazis' propaganda was associated with 1.8 percentage

[24] Yet, Voigtländer and Voth (2014, 12) argue that the elections of March 1933 "were still relatively fair, with intimidation at the polls limited compared to what happened on later occasions", referring to the elections of November 1933.

point rise in vote share for the Nazi party and Satyanath et al. (2017) find that club association density (a measure of social capital) was associated with 0.9 percentage points in the elections of September 1928, and 1.4 in the elections of September 1930 and March 1933.

[Table 6 about here]

We also continue testing the robustness of our analysis and explore whether austerity impacted the Communist party vote share as a falsification test (Table A3 of the Appendix). It could be the case that voters unsupportive of austerity simply migrated from supporting center parties at the polls to either end of the political spectrum. While austerity is insignificantly associated with communist vote share, unemployment is consistently positively and significantly associated with the communist vote share. Improvements in the economy also brought new votes to the KPD. Based on these results it appears that austerity focused attention on the Nazis' platform while the Communists benefited from high unemployment rates and improvements in the economy. As seen in the introduction, the relevant literature stresses that "the Communist Party was the main party of protest (rather than the Nazi Party) for those workers disenchanted by the Weimar regime" (Satyanath et al. 2017, 486).

In Table A4 of the Appendix we also replicated the same exercise but instead of projecting the KPD vote share on our explanatory variables we use data on the vote share of the Center Party (Brüning's party). Interestingly, under the years of austerity, policies associated with budget cuts and increases in taxation reduced support for the Center Party. But this effect decreases when austerity ended and von Papen implemented some stimulus packages (columns 3-6). Yet, for further evidence we also need to look at the votes for the Social Democratic Party (SPD), which in 1930 formed a coalition with the Centre Party and two liberal parties, appointing Brüning as chancellor (Table A5).[25] The results from the Social Democratic Party are very consistent with those from the Center party and show the extent to which "voters repudiated his [Brüning's] policies" (Eichengreen 2015, 139). Finally, in Table A6 we replicate the results for the German National People's Party (DNVP), the major conservative and nationalist party before the rise of the Nazi Party with coalition governments with the Nazis in in some states. The DNVP was a party that supported Hitler's appointment as Chancellor in January 1933 and joined forces in the *Harzburg* Front of 1931 (a short-lived radical right-wing alliance) to promote the succession of Brüning and opposition against the authoritarian Article 48. However, the DNVP was seemingly not able to channel the mass frustration from Brüning's fiscal reforms, with a negative and statistically significant relationship with different measures of austerity.

Hence, the Nazis were quite 'efficient' in translating disfavour with austerity into new votes and, as argued by Ferguson and Temin (2003), had Germany not been forced to endure such severe austerity, the political centre could have 'survived' or at least been strengthened. This

[25] In September 1930 the Social Democratic Party achieved 24.53% of the votes and 21.58% in July 1932.

has also been stressed by Eichengreen (2015, 140), who wrote that with less political uncertainty "the government would have been able to regain market access and finance its deficit." Results also show a positive and statistically significant association between unemployment and vote share to Brüning's Center party in Table A4. Yet, this is not surprising, as can be explained by Brüning's premise to 'instrumentalize' the Great Depression to pursue austerity.[26]

5.3 *Cross-district models in long differences*

In Table 7 we find similar results those in Table 6 by pooling data for all four elections. This is a reduced sample which conforms to the sample that has both district income and wage taxes available with standard errors also clustered at the state level. Results are also robust when we weighted the regressions by the level of population and when we include the lagged values of Nazi vote share. In Table A7 of the Appendix we also calculate the taxes as the percentage point change instead of percentage change in income and wage taxes. The results are very similar quantitatively and qualitatively to those in Table 7.

[Table 7 about here]

5.4 *Cuts in government spending by budget*

With equation 3 (differences are between September 1930 and July 1932) we can also measure austerity as cuts in government spending by main spending categories (Table 8). Data are only available for the Prussian provinces and are collected from *Statistik des Deutschen Reiches.* The strongest links to rising votes for the Nazi party are observed for cuts in social expenditure and security. That is, cuts in municipal pensions, unemployment relief and healthcare are strongly associated with new votes for the Nazi party (0.476; 95% CI: 0.12 to 0.83), where a change equal to a one standard deviation in cuts in welfare and healthcare corresponds to 5.49 percentage points rise in the support to the Nazi party between 1930 and 1932 or half of one standard deviation of the dependent variable. Cuts in the economy and trade are also linked to the Nazi party (0.387; 95% CI: 0.02 to 0.75) as well as state cuts in law and security (0.481; 95% CI. 0.10 to 0.86). This last finding might not be surprising, not only because in order that frightened voters would turn to them to improve security the Nazi forces instigated terror and violence first among particular groups and then, against those who did not advocate publicly

[26] For instance, on May 7 1931 Brüning explained the meaning and intent of austerity to his cabinet: "Two things are necessary: Domestically, it is necessary that with the issuance of the emergency decree the impression is created among the people that the revision is already on its way; abroad, however, one must create the impression that we are striving to fulfil the plan. The entire complex must be kept in motion until the beginning of 1932. Until then Germany must not allow there to be decisive negotiations" (seen in Feldman 2005, 492).

for Nazism, but also for the fears against the Communist party (Bramsted 1965; Satyanath et al. 2017; Thamer 1986; Winkler 1987).[27]

[Table 8 about here]

5.5 *Nazi party membership*

We also modified equation 3 where instead of using vote share for the Nazi party as the dependent variable, we use district level data on entry into Nazi party membership (Table 9). Again, we focus on the inflow of people into the party rather than on the stock of party members. Data on party entry are originally from Brustein and Falter (1995), although we use the data organized by Adena et al. (2015), which computes spatially the number of people who joined the Nazi party in 1932 and between February and May 1933.[28] We find evidence consistent with the idea that, due to austerity, people not only voted for the Nazis but also became Nazi party members. This result is important as it reveals strong preferences for the Nazi ideology due to austerity. In previous research it was argued that the German masses could be influenced by the radio and other media events close to the date of the elections for voting the Nazi party (Adena et al. 2015). However, the direct connection between austerity and Nazi membership shows that people identified some benefits of joining the Nazi community and one was the repudiation of Brüning's fiscal reforms. In column 6, the increase in Nazi membership associated with a one percentage point change in the fiscal consolidation 2 is 0.819 (95% CI: 0.14 to 1.49), where a change equal to a one standard deviation of fiscal consolidation 2 corresponds to a 3.86 percentage points rise in Nazi membership between January 1932 and May 1933. Similarly, using cuts in state plus municipal spending, a one standard deviation rise in expenditure cuts corresponds to a 2.97 percentage points rise in Nazi membership. Indeed, Satyanath et al. (2017, 496) looking at the association between social networks and entry into the Nazi party, also identified that "measures of income and wealth (based on tax assessments) show positive correlations with Nazi Party entry."

In Table A2 of the Appendix we also look at the presidential elections (*Reichspräsident*) of 1932 (we use the data for the second round run-off of April) comparing Hitler and Hindenburg's electoral results. Data were also collected from Falter (Falter and Gruner 1981). Despite being re-elected head of state, Hindenburg missed the absolute majority in the first round required for election and was only able to achieve re-election because, in the second round, Duesterberg withdrew his candidacy in his favour. In that election, Hitler achieved the Nazi's best result thus far with 36.8% of the popular vote (with Hindenburg achieving no more

[27] According to Satyanath et al. (2017, 480), "By 1932, [the Nazi party] had grown so strong that … the SA had a good chance of defeating the regular armed forces in the case of civil war."

[28] It ends in May 1933 because, due to the massive increase in the number of applicants, the Nazis stopped accepting new members in that month (the ban was lifted in 1937)

than 53% of the total votes). It is interesting how the measures had a different impact on each candidate (e.g., austerity positively related with Hitler but negatively with Hidenburg) with very low p-values in models using spending but higher values using the two fiscal consolidation measures. This finding provides some statistical support for Hitler's premonition in the winter of 1931 that Brüning's emergency decrees would help the Nazis to power.

[Table 7 about here]

5.6 *Border-pair policy discontinuity models*

Finally, we use a policy discontinuity design at state borders following Dube et al. (2010) and Holmes (1998). By looking at district-pairs which lie along state borders, Dube et al. (2010) exploit variation in state-level policy (in their case, minimum wage laws in the United States) induced by differential state legislation. This approach, which considers only districts within states that share a border, helps provide suitable control groups given the extreme similarity of other local economic and social conditions besides austerity imposed by state level governments. This strategy limits biases imparted by unobserved or unmeasured confounders correlated with austerity and deals with endogeneity associated with unobservables.

Figure 5 shows a map of districts that share a border. For each election at date t (t defined by the elections of September 1930 and July 1932), our border district pairs data are organised to have at least two observations in each pair p (one for each state in the pair). A given district appears in the data k times (for each election t) if it borders k districts. The district-pair match on opposite sides of a state border is a good control group since while there are substantial differences in treatment intensity of austerity due to differing state level policies these pairs, as shown in Table A8 of the Appendix, are very similar culturally, socially and economically. Indeed, this border matching estimate is clearly not reflecting religious differences or industrial versus agricultural variations, as there is only very small differences in religion, economic activity and employment between near borders pair-districts.

[Figure 5 about here]

With equation 4, we model the Nazi party vote share in district d in year t in levels in a difference-in-differences with intensity of treatment framework (Table 10). Austerity here is measured as the logarithm of the taxes paid minus the logarithm of expenditure within a state (i.e., the log of the simple fiscal surplus). Since along with district (μ_d) and time fixed effects (δ_t) we also cluster the standard errors at the state level and for the district border segment, we account for potential mechanical correlation given the presence of districts in multiple pairs (Dube et al. 2010; Jacks et al. 2017). We provide four types of specifications (according to whether we use district-pair fixed effects (μ_p) and district-pair fixed effects by year interactions (μ_{pt})). Our specification is as follows:

$$NAZI_{dt} = \beta_1 \ln Surplus(a)_{st} + \beta_2 \ln Wages_{st} + \beta_3 \ln Unemployment_{st} + \beta_4 \ln Output_{st} + \mu_{d/p/pt} + \delta_t + \varepsilon_{it} \quad (4)$$

We find that the variable Surplus for the border pair sample is also positive and statistically significant using the two-way clustering or with very low p-values using Surplus 1 or 2. For instance, a district-pair fixed effects and district fixed effects model using Surplus 1 gives a coefficient of 14.955 (95% CI: 7.62 to 22.29) and using Surplus 2 a coefficient of 10.489 (95% CI: 2.68 to 18.30). This final robustness check shows that a well-identified piece of variation by comparing neighbouring districts that straddle state borders produces consistent results with the full sample, with strong evidence of a positive and statistically significant relationship between austerity and the Nazi vote share.

[Table 10 about here]

6. Discussion

In this article we explored the impact of austerity on the political polarization of the German electorate. We used data from voting districts in Germany on votes cast for the Nazi party and measure austerity as the combination of tax increases and spending cuts after controlling for a number of observables and unobservables. We find that austerity measures are correlated with the rise of the Nazi party in interwar Germany, offering econometric support for the argument that austerity created polarization and radicalisation of the German electorate. Each 1 standard deviation increase in fiscal consolidation was associated with between 2 and 5 percentage point increase in votes to the Nazis or up to one quarter or one half of one standard deviation of the dependent variable. At the upper end of these point estimates it is plausible to argue that the Nazis might never have achieved power in March 1933 since it would have required coalition partners to supply up to 11 percent of the votes. As it happened the Nazis relied on the support of the DNVP (another hard right party) in March 1933 a party which could only offer 8% of the votes in the Reichstag. Presumably the lost vote share would have gone nearer to the political center than the DNVP. Of course counterfactual history is always treacherous ground on which to tread and so we provide this particular result more by way of example than as categorical truth.

In line with the literature we also find that unemployment was linked with greater votes for the Communist party and that austerity was associated with a shift of votes from the Center party to the Nazi party (King et al. 2008; Petzina 1977). Our findings are robust to a range of specifications including different measures of austerity and different ways to measure the radicalization of the electorate and a border-pair policy discontinuity design. In future research we plan to explore in more detail some alternative explanations for the rise of the Nazis such as anti-Semitism and violent activities from the Nazis (and Communists) in the early 1930s.

As seen in the introduction, austerity is only one factor affecting the rise of the Nazi party and future work is needed to explore additional German hypotheses.

Our analysis is conservative in the sense that we are already controlling for output and employment two variables potentially related to and affected by fiscal policy. One possibility is that each of our variables is an imperfect signal of the strength of the shock of the downturn. The other possibility is that austerity proxies not only for the destructive contractionary effect on output and employment but also for distributional battles.

As the literature tends to argue, austerity measures contributed to votes for the Nazi party among middle- and upper-classes who, despite the depth of the Depression (i.e., after controlling for the level of output and employment) still had something to lose and may have resented government austerity in the face of Depression (a pocket book motive) and while other segments of society received benefits from relief or automatic stabilizers. The idea that distributional economic issues could be a potential cause or be reflected in political polarization is entirely possible. Here Eichengreen argues that "Brüning's unrelenting austerity, by plunging the economy deeper into recession, increased political polarization" (Eichengreen 2015, 139).

Weimar was not primarily designed to be a fiscal system that shared risk via fiscal transfers, even if the unemployment insurance fund did act in this regard to a degree. While extremely hard to document the rules and norms for such transfers because of the number of players in the system, it is an open question whether austerity had an impact because resources were increasingly re-distributed in an egregious and unacceptable fashion or whether budgetary cutbacks and higher taxes had a negative impact on pocket-book voters in localities ravaged by austerity. Undoubtedly, the relationships we have identified suggest an element of truth in both.

During 26 months, Brüning cut real public spending by 15%, adopted tax hikes and mandated cuts in wages in the face of ever increasing impoverishment. Fury and despair were channelled into the ranks of populists, demagogues and xenophobes, with people massively voting for Hitler. Tragically, Keynes's premonition was borne out, and Germany's deep austerity under Brüning fuelled the rise of the Nazi party and, ultimately, WW2 in Europe. Could Brüning have taken other policy actions to avoid the rise of the Nazis? Was there an alternative to austerity? In the 1980s, Borchardt argued that there was no realistic alternative to deflation and that, due to the Great Depression, Brüning's room for manoeuvre was severely constrained (Borchardt 1979; 1980). However, Borchardt's hypothesis attracted very few supporters. Voth (1993, 267) argues "that the room for manoeuvre was far greater than Borchardt assumes, and that sufficient means may have been available to alleviate the depression" (see also Büttner 1989; Feinstein et al. 2008; James 1983). Ferguson (1996) reviews a list of alternatives to austerity that would potentially have brought Germany to the path of growth. One alternative, as also argued by Voth (1993), is that Brüning could have negotiated a near complete end to Young Plan payments in December 1931 (not just re-rescheduling the reparations payments

but implementing termination of such payments). The resultant political and economic success of this agreement would have ameliorated somewhat the economic, political and fiscal situation. Later on, Ferguson (2016, 57-58) also commented that "the large public debts incurred during and after the First World War might have been rationally restructured; instead there were moratoriums and defaults after austerity policies had failed." However, Brüning preferred to show the world the suffering of the German population as this was his engine to pursue austerity (Eichengreen 2015). Interestingly, Ferguson (1997, 274) also asks "was there an alternative to the extremes of inflation and deflation which characterized the Weimar period? The answer is that there was, and it was called National Socialism."

Germany could also have followed the policies of other nations which left the gold standard, devaluing the Reichsmark instead of implementing exchange controls that held the Reichsmark at an overvalued level and limited the potential for recovery via expenditure switching. As discussed by Eichengreen (1992), "the banking crisis of July 1931, followed in September by Britain's abandonment of the gold standard, robbed Brüning's deflationary strategy of its economic rationale" (see also Temin 1990, 70). Crafts and Fearon (2010, 446) also argue that "the link between the gold standard and the Brüning recession, on the one hand, and the rise of the Nazis in the 1930s, on the other, is less than mechanical, but it is there." Without a binding gold standard constraint, Germany could have financed its recovery by increasing government borrowing, with inflation, or by changing expectations about the price level. In the end, the hyperinflation period of the 1920s was probably too vivid and monetary expansion was a non-starter (Ferguson 1996; Maier 1978). Temin (1990, 72) further comments "that wage inflation could well have offset a large part of any devaluation. Even so, there would be benefits to the economy. The government would have been freed to undertake more expansionary policies. Social discontent would have been eased, relaxing the political pressure on the Brüning government."[29] Regrettably, as argued by Temin (2001, 12), "pressed to get this mountain of debt under control, Brüning tried a variety of ploys. They all failed."

Although the inter-war German context had several specificities, there are some parallels with contemporary experiences of austerity. Austerity packages in Europe in recent years, have correlated, in some countries and at some times, with rising vote shares of far-right and neo-Nazi parties. These include Golden Dawn in Greece, which in the elections of September 2015 won 7% of votes in the Hellenic parliament and 3 seats in the European parliament and the Austrian Freedom Party, which in 2014 won 4 seats in the European Parliament and recently got 24% of the votes in the National Council or 62 seats (92 are needed for a majority). The Fidesz-KDNP and Jobbik parties in Hungary won respectively 45% and 20% of the vote in

[29] Indeed, relevant literature shows that Brüning did little to confront directly the problems of unemployment, and even linked job creation to the effects of his deflationary policy on wages (Feinstein et al. 2008). Under the pressure of the unemployed masses he only developed a small programme in May 1932 with limited funds for road works and waterworks, but as described by Feinstein et al. (2008) it was by all means insufficient.

April 2014. In Poland, Law and Justice roared back into government, winning 38% of the vote in 2015. The People's Party Our Slovakia, with 8% of the vote in the elections of March 2016 offers another example. Also relevant is the rise of the UK Independence party (UKIP), which has gone from 3.10% in 2010, to 12.6% in 2015 and the events that followed the EU referendum, with a backlash against immigration in Europe and elsewhere. France, which also implemented a degree of fiscal austerity, also experienced an upsurge of the National Front led by Le Pen (father and daughter after 2011), another strong anti-immigrant and xenophobe party, becoming the largest French party in the 2014 European elections with 25% of the votes. Despite losing the presidential elections of 23 April and 7 May of 2017, Le Pen secured 21.30% of the votes (out of 11 candidates) in the first round and 33.90% in the second round (out of 2 candidates).

In 2016 Donald Trump was elected 45th president of the USA campaigning on a central promise to build a wall between Mexico and USA, the shutdown of Muslim and Mexican immigration into the US, and a populist campaign slogan to "make America great again." Geographical analysis of voting patterns reveals a close correlation between worsening life expectancy (capturing multiple disadvantages) and support for Trump (Bor 2017). Recent events in Germany with the rise of the far-right are also a concern given the interwar experience. The Alternative für Deutschland (AfD) a racist and Eurosceptic party, won 4.7% of the votes in the 2013 federal elections, 7.1% in European elections of 2014, with representation in nine German state parliaments (out of 16), and in the elections of September 2017, secured 12.6% of the votes or 94 seats (out of 709), meaning that 5.8 million people voted for this radical far-right party. In the state of Berlin elections of 18 September 2016, it won the highest share of the vote for the far-right in Berlin since WW2, with 14% of the votes.

We also contribute to the large literature that discusses the impact of unemployment and the rise of the Nazis. Rather than simply being a product of the output declines associated with economic hardships typically associated with the Great Depression in most Western countries, Brüning's implementation of harsh deflationary policies and budget cuts in the middle of a severe economic depression seems likely to have led to the rise of the Nazi party. This policy of austerity not only worsened the economic situation, but also contributed to the decline and collapse of the Weimar Republic. At first pass, this seems puzzling and counterintuitive: both unemployment and austerity impoverish the populations that suffer from their effects. Why then does unemployment and austerity have opposite signs in these regressions? A plausible explanation presents itself. Unemployment is seldom perceived as the intentional outcome of government policy; it might be attributed to political incompetence, but no government wants to increase the rate of unemployment. And, indeed, a high rate of unemployment offers an opportunity for government intervention that will be seen as positive and empathetic from subsidies to policies to incentivise the creation of employment (such as public investment) through formative policies designed to help the unemployed to find a job and so on.

Conversely, austerity policies are perceived as the result of direct intervention by government which in turn bring about lower standards of living by effectively reducing disposable income with increased taxation and weakening public services by cutting public expenditure and transfers. James (1986) also stressed that taxpayers blamed directly the state for the increased rates of taxes and saw them as inefficient and unfair.

We only need to add to this picture the connections between the political and financial elites, which can be exploited by populist politicians, to give the full measure of the frustration of those at the receiving end of the austerity packages. Research by Satyanath et al. (2017) shows clearly how elites and dense social networks in interwar Germany contributed to the rise of Nazi vote share and the rapid and widespread dissemination of Nazi ideology. Although still controversial, there is evidence to suggest that big business supported the Nazis (Schreiner 1932; Turner 1969).[30] As a result, while unemployment and austerity may seem to impact those suffering from them in a similar fashion (e.g., by worsening their living conditions), they may plausibly lend themselves to completely different readings and interpretations by voting populations. Hence, those suffering from unemployment in Weimar Germany gravitated towards left-wing and communist parties, whereas a populist option that clearly excoriated the political establishment was more attractive for those for whom austerity was the most salient effect of government policy.

As several scholars have noted, the circumstances in which we are living today are eerily reminiscent of the Depression-era (Bordo 2012; Eichengreen 2015; Stuckler and Basu 2013; Temin 2010). The first parallel is the historical background that gave rise to the Great Depression and the Great Recession, both partially associated with a run-up in credit and US financial markets which collapsed. A second is how the economic situation in the 1930s resembles the situation nowadays facing European countries, with the lack of monetary policy to manoeuvre (in the 1930s with the gold standard and today with the euro), paired with very high unemployment rates. Both then and now the economy collapsed, giving rise to problems of balancing budgets and austerity. Currently, Greece and other European countries have been forced by, ironically, a strong Germany led by Angela Merkel and the 'troika' (the tripartite committee led by the European Commission with the European Central Bank and the International Monetary Fund) to pursue fierce austerity policies in exchange for emergency loans. In both cases, the finances of the countries are also dictated by a group of technocrats, with no political accountability.

The corollary seems clear: even when the particular history of a country precludes a populist extreme-right option, austerity policies are likely to produce an intense rejection of the established political parties, with the subsequent dramatic alteration of the political order. The case of Weimar Germany explored in this article provides a timely example that imposing too

[30] See also the Krupp trials.

much austerity and too many punitive conditions can not only be self-defeating, but can also unleash a series of unintended political consequences, with truly unpredictable and potentially tragic results.

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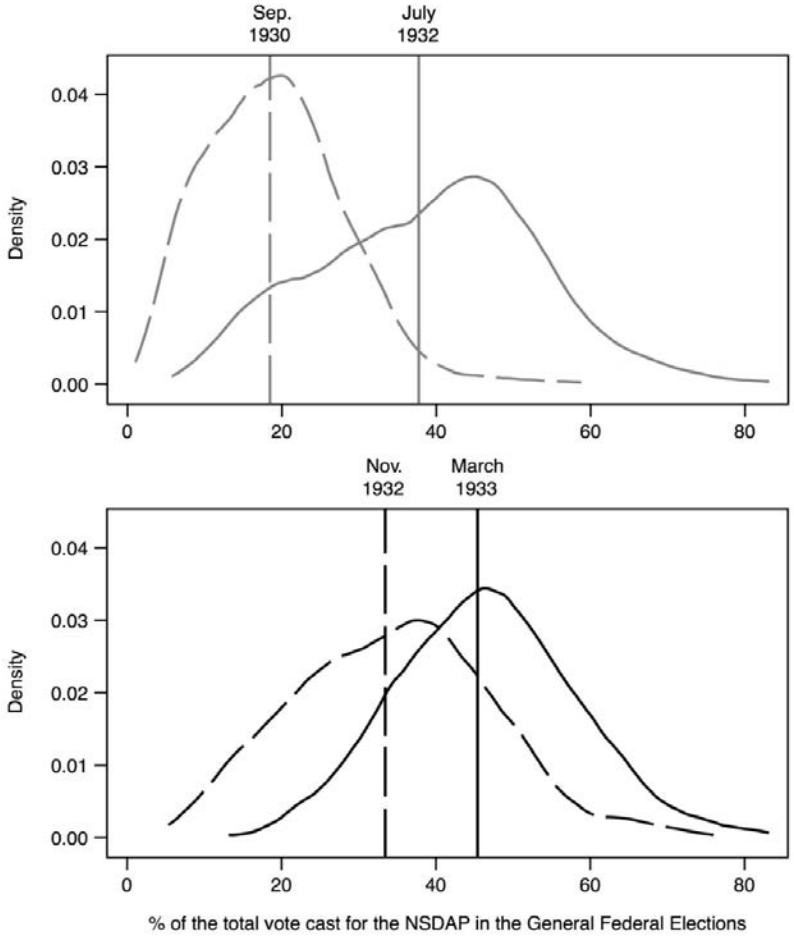
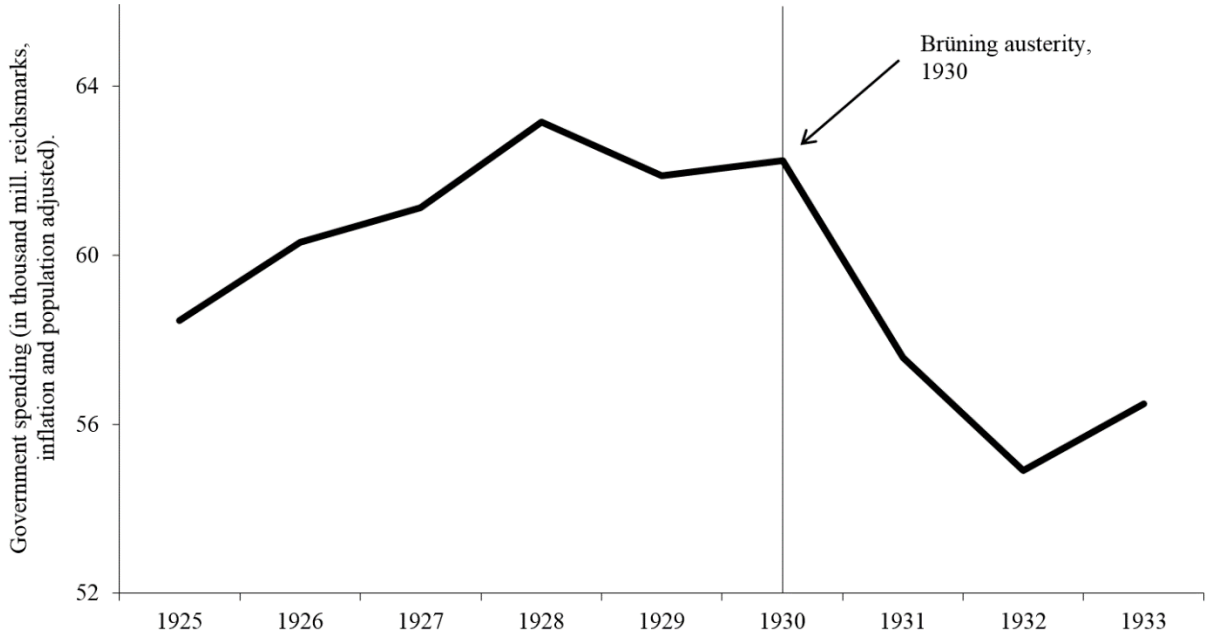
Figure 1: Percentage of total vote share for the Nazi party in the different federal elections between 1930 and 1933.



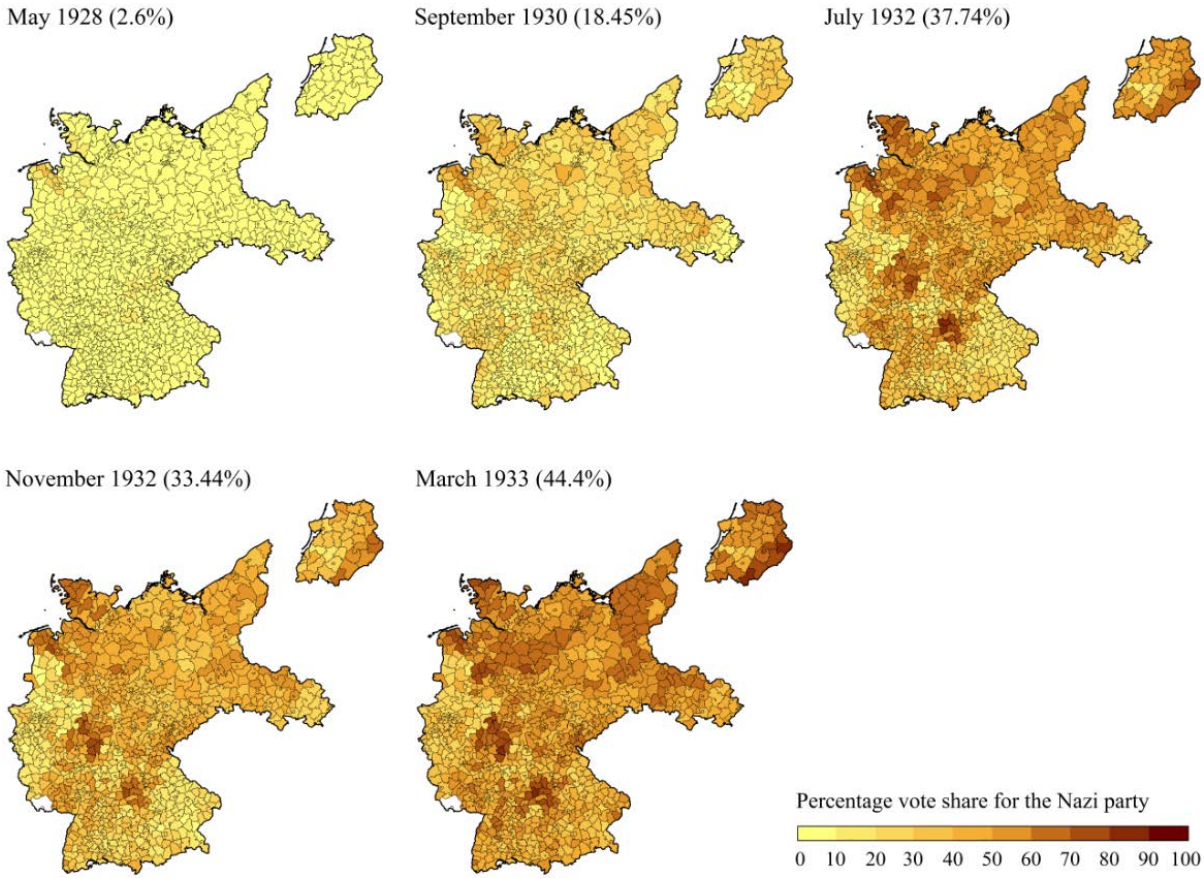
Sources: See text. **Notes**: Vertical dashed lines show the mean value of the total vote share for the Nazi party in the different elections across districts (in percentage points). These averages are very close to the overall vote shares which totalled 18.47% (September 1930), 37.79% (July 1932), 33.6% (November 1932), 44.6% (March 1933). The figure does not include the election results for May 1928 as the vote share for the Nazi party was very low (2.6%).

Figure 2: Development of total government spending in the different *states*, 1925-1933



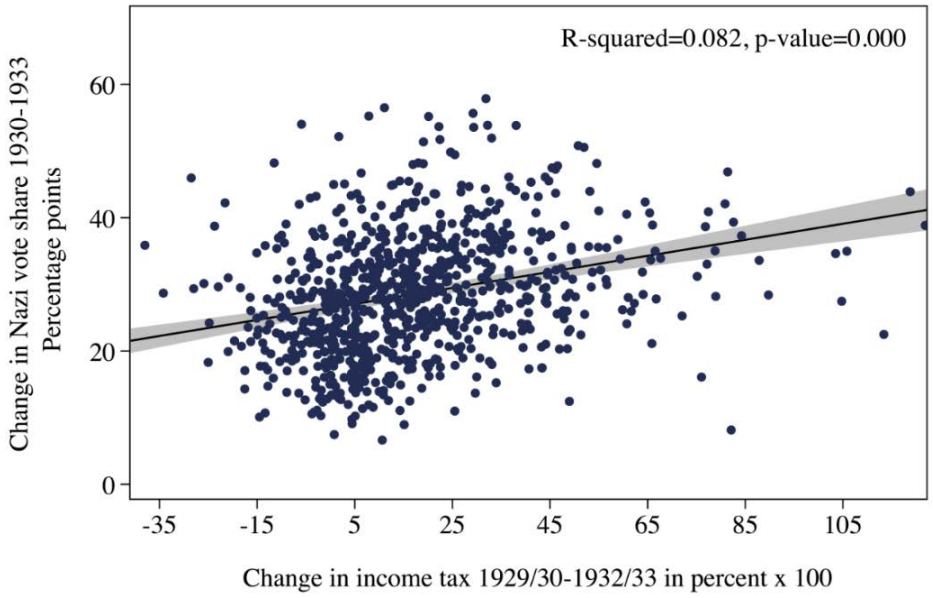
Sources: See text. **Notes**: The figure has been adjusted for inflation using the price index (1950=100) from Piketty and Zucman (2013, Table DE15a, available at http://piketty.pse.ens.fr/en/) and for population using also the data from Piketty and Zucman (2013, Table DE1, available at http://piketty.pse.ens.fr/en/). For the data on the government spending see text. The same overall figure is available in Ferguson (1996, 646, Fig. 2) and Ritschl (2013b, 126, Table 4.4).

Figure 3: The rise of the Nazi party across Germany (in percentage points)



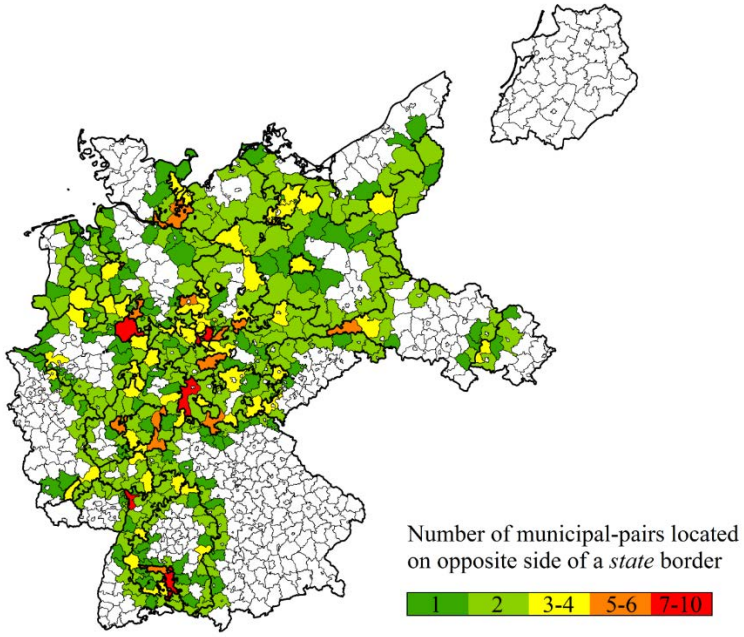
Sources: See text. **Notes**: We report the percentage of vote share for the Nazi party in each district and election using the map of 1933. If a district lacks information from one election (because changes in political borders relative to the map of 1933) we use data from the previous or following election. In parenthesis we report the total vote share for each election. The Saarland region has been excluded from the analysis.

Figure 4: District level change in vote for the Nazi party and income taxes, 1930-1933



Sources: See text. **Notes**: District level income taxes are calculated as the ratio of total revenue over total taxable income. We removed potential outliers with a greater than 125% rise in taxes or declines of more than 40% from the sample.

Figure 5. District-pairs located on opposite sides of a state border



Sources: See text. **Notes**: Each colour represents the number of district-pairs located on opposite side of a state border. Non-district-pairs are coloured in white. State borders are highlighted by a bold black line.

Box 1: Austerity pursues by Brüning under four Emergency Decrees.

Between 1930 and 1932 there were four emergency decrees to pursue austerity:

- The *First Emergency Fiscal and Economic Decree* (of 26th July 1930), involved, among other measures, a 6% civil service salary cut, a 6% reduction of revenues apportioned to states and municipalities, the retention of the 5% income tax surcharge on incomes above 8,000 RM, and limited the regional shares on turnover taxes (Feldman et al. 1993; Harsch 1993; Hömig 2000; James 1986).
- The so-called *Second Emergency Fiscal and Economic Decree* (promulgated on 5th June 1931) is known for the 'reparations proclamation' announcing that "the limits of what the German people can tolerate have been reached" along with a new 'crisis tax' that levied a surcharge of between 1-5% on income tax.
- A *Third Emergency Fiscal and Economic Decree* (6th October 1931) cut even more Reich transfers to the states and municipalities, restricted the rights of states and municipal parliaments, increased contributions to unemployment insurance, restricted the period of eligibility of unemployment relief, cut civil service salaries, and implemented the exclusion of nearly all people under 21 years from welfare benefits.
- The *Fourth Emergency Fiscal and Economic Decree* (8th December 1931), "to Secure the Economy and Public Finances" included a civil service salary cut of 9%,increased the turnover tax rate by 50-70%, and tried to impose a general deflation by decreeing simultaneous cuts in fixed prices, wages and interest rates (Hömig 2000; James 1986).

Table 1: Economic growth in selected countries, 1926-1936

Year	Austria	France	Germany	Netherlands	UK	USA
1926	1.37	1.99	2.07	6.50	-4.05	5.09
1927	2.71	-2.25	9.33	2.73	7.67	-0.39
1928	4.33	6.68	3.78	3.91	0.79	-0.11
1929	1.13	6.29	-0.94	-0.54	2.73	5.01
1930	-3.05	-3.79	-1.93	-1.52	-1.13	-9.94
1931	-8.31	-6.54	-8.10	-7.45	-5.56	-8.39
1932	-10.59	-6.52	-7.94	-2.89	0.19	-13.76
1933	-3.62	7.07	5.77	-1.56	2.51	-2.68
1934	0.65	-1.12	8.51	-3.06	6.25	7.05
1935	1.93	-2.52	6.78	2.59	3.42	6.91
1936	3.03	3.87	8.03	5.28	4.07	13.48

Sources: Data are from Maddison Project Database (http://www.ggdc.net/maddison). Notes: GDP per head is in 1990 International Geary-Khamis dollars (GK$) where the units of measurement are 'purchasing power adjusted' dollars of 1990, so that account has been taken of differences in internal price levels.

Table 2: Industrial unemployment rates (in percentage points), 1926-1938

Year	France	Germany	Netherlands	Norway	UK	US
1926	3.0	18.0	7.3	24.3	12.5	2.9
1927	11.0	8.8	7.5	25.4	9.7	5.4
1928	4.0	8.6	5.6	19.2	10.8	6.9
1929	1.0	13.3	5.9	15.4	10.4	5.3
1930	2.0	22.7	7.8	16.6	16.1	14.2
1931	6.5	34.3	14.8	22.3	21.3	25.2
1932	15.4	43.8	25.3	30.8	22.1	36.3
1933	14.1	36.2	26.9	33.4	19.9	37.6
1934	13.8	20.5	28.0	30.7	16.7	32.6
1935	14.5	16.2	31.7	25.3	15.5	30.2
1936	10.4	12.0	32.7	18.8	13.1	25.4
1937	7.4	6.9	26.9	20.0	10.8	21.3
1938	7.8	3.2	25.0	22.0	12.9	27.9

Sources: Data are from Eichengreen and Hatton (1988) reflecting industrial workers.

Table 3: Main descriptive statistics

	Mean	SD	Min.	Max	N
Percentage vote cast for the Nazi party in the different federal elections					
May 1928	3.24	4.12	0.14	36.15	30
September 1930	18.84	8.96	2.20	58.80	30
July 1932	39.00	14.48	7.77	83.00	30
November 1932	34.93	13.38	5.33	76.42	30
March 1933	47.14	12.11	13.29	83.01	30
Control variables (percentage change between 1929/30 and 1932/33)					
Cuts in Municipal spending	11.68	4.40	-2.81	24.12	30
Cuts in State spending	15.84	4.44	-2.81	21.92	30
Cuts in Reich spending (municipal + state)	13.21	2.05	6.57	18.46	30
Δ Income tax rate (state level data)	10.23	5.74	-1.34	23.65	30
Δ Wage tax rate (state level data)	-21.79	2.67	-26.05	-15.14	30
Δ Income tax rate (district level data)	17.20	21.11	-58.28	96.67	583
Δ Wage tax rate (district level data)	-20.70	8.27	-63.33	19.83	558
Fiscal consolidation 1 (wage taxes state level)	8.58	3.47	-17.71	2.18	30
Fiscal consolidation 2 (income taxes, state level)	23.45	5.59	5.23	37.03	30
Δ Wages (% x100)	-20.50	3.26	-16.44	-30.41	30
Δ Unemployment (% x100)	51.58	12.25	28.26	100.71	30
Δ Electricity generation (% x100)	-1.37	6.30	-29.85	6.93	30

Sources: See text. **Notes**: All control variables are calculated in nominal terms. The control variables are calculated as percentage changes of these nominal values. Tax rates are calculated as tax revenue divided by declared, taxable income. For the income taxes we use the percentage change between 1929 and 1932 and for wage taxes the percentage change between 1928 and 1932. Unemployment refers to numbers of unemployed. See text for the details. For reference the cumulative decline in the German CPI between 1928 and 1932 was 22.5% while the aggregate decline in German GDP between 1928 and 1932 was about 30%.

Table 4. Panel data on the impact of district income and wage taxes on the Nazi party vote share, elections 1930, 1932 and 1933

	Elections 9/1930 and 3/1933		Elections 9/1930, 7/1932 and 11/1932		Elections 9/1930, 7/1932, 11/1932 and 3/1933	
	(1)	(2)	(3)	(4)	(5)	(6)
Panel 1: District income taxes						
ln Income Tax	10.057***	10.057**	4.559***	4.559**	6.335***	6.335***
	(1.730)	(4.073)	(1.593)	(2.238)	(1.524)	(2.330)
	[0.000]	[0.014]	[0.004]	[0.042]	[0.000]	[0.007]
ln Wages	3.677	3.677	6.916	6.916	5.838	5.838
	(8.670)	(44.946)	(6.980)	(27.918)	(7.254)	(27.823)
	[0.672]	[0.935]	[0.322]	[0.804]	[0.421]	[0.834]
ln Unemployment	-12.768***	-12.768	-8.092**	-8.092	-9.663***	-9.663
	(3.799)	(16.342)	(3.680)	(14.902)	(3.597)	(13.021)
	[0.001]	[0.435]	[0.028]	[0.587]	[0.007]	[0.458]
ln Economic Output	4.837	4.837	-36.346***	-36.346	-22.593*	-22.593
	(12.794)	(35.888)	(13.159)	(47.271)	(12.725)	(37.512)
	[0.706]	[0.893]	[0.006]	[0.442]	[0.076]	[0.547]
Number of observations	1,606	1,606	2,409	2,409	3,212	3,212
Number of districts	803	803	803	803	803	803
Within R^2	0.916	-	0.771	-	0.683	-
District level clustering	Yes	No	Yes	No	Yes	No
Two-way clustering	No	Yes	No	Yes	No	Yes
Fixed effect for 1932/1933	Yes	Yes	Yes	Yes	Yes	Yes
District fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Panel 2: District wage taxes						
ln Wage Tax	15.888***	15.888***	3.645	3.645	7.538***	7.538
	(2.674)	(5.276)	(2.789)	(5.985)	(2.433)	(4.754)
	[0.000]	[0.003]	[0.192]	[0.543]	[0.002]	[0.113]
ln Wages	8.482	8.482	8.072	8.072	8.154	8.154
	(8.596)	(43.713)	(7.044)	(27.963)	(7.255)	(27.571)
	[0.324]	[0.846]	[0.252]	[0.773]	[0.261]	[0.767]
ln Unemployment	-12.553***	-12.553	-8.539**	-8.539	-9.905***	-9.905
	(3.831)	(15.847)	(3.672)	(14.374)	(3.585)	(12.621)
	[0.001]	[0.429]	[0.020]	[0.553]	[0.006]	[0.433]
ln Economic Output	7.348	7.348	-34.761***	-34.761	-20.701	-20.701
	(13.014)	(35.435)	(13.347)	(47.001)	(12.961)	(37.572)
	[0.572]	[0.836]	[0.009]	[0.460]	[0.111]	[0.582]
Number of observations	1,606	1,606	2,409	2,409	3,212	3,212
Number of districts	803	803	803	803	803	803
Within R^2	0.915	-	0.769	-	0.681	-
District level clustering	Yes	No	Yes	No	Yes	No
Two-way clustering	No	Yes	No	Yes	No	Yes
Fixed effect for 1932/1933	Yes	Yes	Yes	Yes	Yes	Yes
District fixed effects	Yes	Yes	Yes	Yes	Yes	Yes

Sources: See text. **Notes**: Dependent variable is the percentage share (x 100) of the valid votes cast going to the Nazi party in the different elections. We use income level wage taxes as a measure of austerity. The income tax is calculated as the ratio between total revenue and total taxable income We cluster standard errors (in parenthesis) at the district level in columns 1, 3 and 5 and for columns 2, 4 and 6 we use a two-way clustering with standard errors clustered at the state and district level following the methodology of Dube et al. (2010). P-values are in brackets immediately below the standard errors, *** p<0.01, ** p<0.05, * p<0.1.

Table 5. Cross-district models in differences for the impact of district income and wage taxes on the Nazi party vote share. Using differences between (7/1932 and 9/1930), (11/1932 and 9/1930), and (3/1933 and 9/1930).

	(1)	(2)	(3)	(4)
% Δ Average Income Tax Rate	0.047***	0.044***	0.040***	0.051***
	(0.011)	(0.011)	(0.010)	(0.011)
	[0.000]	[0.000]	[0.000]	[0.000]
% Δ Wages		0.101	0.202**	
		(0.095)	(0.092)	
		[0.291]	[0.028]	
% Δ Unemployment		-0.060***	-0.020	
		(0.022)	(0.017)	
		[0.005]	[0.246]	
% Δ Economic output		-0.218*	-0.060	
		(0.130)	(0.109)	
		[0.094]	[0.584]	
Lagged Nazi Vote Share			0.252***	
			(0.013)	
			[0.000]	
Number of observations	2,409	2,409	2,409	2,409
Number of districts	803	803	803	803
R^2	0.017	0.028	0.159	0.164
State fixed effects	No	No	No	Yes
% Δ Average Wage Tax Rate	0.102***	0.100***	0.107**	0.083***
	(0.033)	(0.033)	(0.026)	(0.031)
	[0.002]	[0.003]	[0.000]	[0.008]
% Δ Wages		0.130	0.235**	
		(0.095)	(0.091)	
		[0.171]	[0.010]	
% Δ Unemployment		-0.062***	-0.019	
		(0.022)	(0.017)	
		[0.004]	[0.253]	
% Δ Economic output		-0.208	-0.050	
		(0.132)	(0.109)	
		[0.117]	[0.645]	
Lagged Nazi Vote Share			0.256***	
			(0.013)	
			[0.000]	
Number of observations	2,409	2,409	2,409	2,409
Number of districts	803	803	803	803
R^2	0.007	0.020	0.155	0.149
State fixed effects	No	No	No	Yes

Sources: See text. **Notes**: Dependent variable is the percentage share (x 100) of the valid votes cast going to the Nazi party in the different elections. We use income level wage taxes as a measure of austerity. Lagged values refer to the election immediately prior to the latest election in the differenced dependent variable. The income tax is calculated as the ratio between total revenue and total taxable income We cluster standard errors (in parenthesis) at the district level. P-values are in brackets immediately below the standard errors, *** p<0.01, ** p<0.05, * p<0.1.

Table 6: Cross-district models in differences for the impact of austerity on the Nazi party vote share.

							Population weighted regressions		
	September 1930 and July 1932		September 1930 and November 1932		September 1930 and March 1933		9/1930 - 7/1932	9/1930- 11/1932	9/1930- 3/1933
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Panel 1: Cuts in government spending									
Cuts in spending	1.619***	1.825***	0.910*	1.040**	-0.175	0.077	1.758**	0.986*	0.044
	(0.548)	(0.641)	(0.446)	(0.505)	(0.334)	(0.355)	(0.650)	0.513	(0.344)
	[0.006]	[0.008]	[0.051]	[0.049]	[0.604]	[0.830]	[0.012]	[0.065]	[0.900]
Δ Wages		-0.058		-0.006		0.191	-0.058	-0.008	0.145
		(0.253)		(0.255)		(0.451)	(0.253)	0.254	(0.441)
		[0.820]		[0.982]		[0.674]	[0.819]	[0.976]	[0.744]
Δ Unemployment		-0.111**		-0.091***		-0.046	-0.112**	-0.091***	-0.049
		(0.043)		(0.031)		(0.044)	(0.041)	0.030	(0.043)
		[0.015]		[0.007]		[0.300]	[0.012]	[0.005]	[0.269]
Δ Economic output		-0.106		-0.145		0.025	-0.106	-0.149	0.024
		(0.160)		(0.154)		(0.036)	(0.165)	0.156	(0.036)
		[0.513]		[0.356]		[0.499]	[0.528]	[0.348]	[0.509]
Number of districts	933	933	933	933	933	933	933	933	933
R^2	0.051	0.077	0.019	0.043	0.002	0.025	0.075	0.043	0.026
Panel 2: Fiscal consolidation 1 (cuts in government spending and change in wage taxes)									
Fiscal consolidation 1	1.001***	1.033**	0.710**	0.688*	0.415**	0.738***	1.042**	0.703*	0.746***
(cuts in gov. spending	(0.358)	(0.397)	(0.314)	(0.361)	(0.178)	(0.256)	(0.402)	0.368	(0.261)
and wage taxes)	[0.009]	[0.015]	[0.032]	[0.067]	[0.027]	[0.007]	[0.015]	[0.067]	[0.008]
Δ Wages		0.333		0.238		0.803*	0.332	0.237	0.789*
		(0.220)		(0.211)		(0.445)	(0.217)	0.208	(0.445)
		[0.141]		[0.270]		[0.082]	[0.138]	[0.263]	[0.087]
Δ Unemployment		0.001		-0.021		-0.015	-0.002	-0.022	-0.016
		(0.073)		(0.051)		(0.036)	(0.071)	0.050	(0.036)
		[0.986]		[0.689]		[0.685]	[0.974]	[0.660]	[0.654]
Δ Economic output		-0.047		-0.098		0.043	-0.046	-0.099	0.042
		(0.186)		(0.173)		(0.037)	(0.188)	0.173	(0.036)
		[0.802]		[0.578]		[0.255]	[0.810]	[0.574]	[0.255]
Number of districts	933	933	933	933	933	933	933	933	933
R^2	0.065	0.077	0.039	0.052	0.020	0.069	0.081	0.055	0.072
***Panel 3*: Fiscal consolidation 2 (cuts in government spending and changes in income taxes)									
Fiscal consolidation 2	0.049	0.015	-0.023	-0.071	0.040	0.153	0.027	-0.064	0.159
(cuts in gov. spending	(0.308)	(0.305)	(0.247)	(0.236)	(0.182)	(0.157)	(0.304)	(0.236)	(0.156)
and income taxes)	[0.875]	[0.961]	[0.925]	[0.766]	[0.829]	[0.339]	[0.931]	[0.789]	[0.317]
Δ Wages		0.124		0.072		0.324	0.111	0.062	0.299
		(0.318)		0.281)		(0.559)	(0.314)	(0.278)	(0.550)
		[0.700]		[0.800]		[0.567]	[0.726]	[0.824]	[0.591]
Δ Unemployment		-0.062		-0.068		-0.040	-0.068	-0.072	-0.043
		(0.082)		0.054)		(0.045)	(0.078)	(0.051)	(0.044)
		[0.452]		[0.214]		[0.382]	[0.388]	[0.174]	[0.344]
Δ Economic output		-0.189		-0.205		0.023	-0.187	-0.206	0.023
		(0.198)		0.175)		(0.038)	(0.198)	(0.174)	(0.038)
		[0.347]		[0.250]		[0.544]	[0.354]	[0.245]	[0.552]
Number of districts	933	933	933	933	933	933	933	933	933
R^2	0.000	0.018	0.000	0.021	0.021	0.029	0.020	0.023	0.030

Sources: See text. **Notes**: Dependent variable is the change in the percentage share (x 100) of valid votes received by the Nazi party at the district level. We use the controls of 1930 for the elections of September 1930 and 1931 for the elections of July and November 1932 (columns 1-4). For columns 5 and 6 we use the controls of 1930 for the elections of September 1930 and 1932 for the elections of March 1933. Government spending is the sum of total within state municipal spending plus total state spending. We use the income taxes of 1928 and 1932 for columns 1-4 and 1929 and 1933 for columns 5-6 and wage taxes for 1928 1932 for all the columns adjusted to the nearest election. To account for sample selection bias due to redistricting between elections and missing data, models are adjusted for the same number of observations (933). If we do not account for these models, the total number of observations in the adjusted models are 989 (elections September 1930 and July 1932), 935 (elections September 1930 and July 1932), 935 (elections September 1930 and March 1933) and 993 (elections May 1928 and September 1930). Unadjusted samples for missing values report the same overall findings. Standard errors in parentheses are clustered at the state level and p-values are immediately below the standard errors in brackets, *** p<0.01, ** p<0.05, * p<0.1

Table 7. Cross-district models in differences for the impact of state level austerity on the Nazi party vote share. Using difference between (7/1932 and 9/1930), (11/1932 and 9/1930), and (3/1933 and 9/1930).

	Fiscal consolidation 1 (cuts in government spending and changes in wage taxes)		Fiscal consolidation 2 (cuts in government spending and change in income taxes)		Cuts in government spending	
	(1)	(2)	(3)	(4)	(5)	(6)
Panel 1: Baseline specification						
Fiscal Consolidation	1.118***	1.195***	0.100	0.136	0.130***	1.593***
	0.308	(0.342)	(0.281)	(0.223)	(0.263)	(0.394)
	[0.001]	[0.002]	[0.725]	[0.547]	[0.000]	[0.001]
% Δ Wages		0.361**		0.132		-0.052
		(0.152)		(0.331)		(0.222)
		[0.027]		[0.693]		[0.817]
% Δ Unemployment		0.006		-0.064		-0.103***
		(0.044)		(0.063)		(0.034)
		[0.902]		[0.323]		[0.006]
% Δ Economic output		-0.177		-0.243		0.005
		(0.345)		(0.293)		(0.343)
		[0.612]		[0.417]		[0.989]
Number of observations	2,409	2,409	2,409	2,409	2,409	2,409
Number of states	24	24	24	24	24	24
R^2	0.055	0.068	0.001	0.015	0.027	0.046
Panel 2: Population weighted						
Fiscal Consolidation	1.117***	1.188***	0.109	0.136	1.287***	1.538***
	(0.313)	(0.350)	(0.282)	(0.225)	(0.264)	(0.397)
	[0.002]	[0.002]	[0.702]	[0.552]	[0.000]	[0.001]
% Δ Wages		0.348**		0.110		-0.061
		(0.153)		(0.323)		(0.222)
		[0.032]		[0.738]		[0.786]
% Δ Unemployment		0.002		-0.069		-0.104***
		(0.044)		(0.060)		(0.033)
		[0.965]		[0.263]		[0.004]
% Δ Economic output		-0.163		-0.223		0.014
		(0.340)		(0.288)		(0.341)
		[0.635]		[0.446]		[0.969]
Number of observations	2,409	2,409	2,409	2,409	2,409	2,409
Number of states	24	24	24	24	24	24
R^2	0.058	0.070	0.001	0.016	0.025	0.045
Panel 3: Lagged values of Nazi vote share						
Fiscal Consolidation	0.865***	0.983***	-0.014	0.006	1.086**	1.265***
	(0.241)	(0.252)	(0.186)	(0.157)	(0.401)	(0.367)
	[0.002]	[0.001]	[0.939]	[0.970]	[0.013]	[0.002]
% Δ Wages		0.411*		0.205		0.078
		(0.206)		(0.343)		(0.236)
		[0.058]		[0.555]		[0.745]
% Δ Unemployment		0.032		-0.026		-0.055
		(0.041)		(0.056)		(0.033)
		[0.448]		[0.646]		[0.104]
% Δ Economic output		-0.032		-0.039		0.115
		(0.217)		(0.186)		(0.230)
		[0.882]		[0.838]		[0.622]
Lagged Nazi vote share		0.239***		0.255***		0.244***
		(0.041)		(0.047)		(0.044)
		[0.000]		[0.000]		[0.000]
Number of observations	2,409	2,409	2,409	2,409	2,409	2,409
Number of states	24	24	24	24	24	24
R^2	0.172	0.184	0.140	0.148	0.158	0.168

Sources: See text. **Notes**: Dependent variable is the percentage share (x 100) of the valid votes cast going to the Nazi party in the different elections. We use income level wage taxes as a measure of austerity. This is a reduced sample which conforms to the sample that has both district income and wage taxes available. Results in the full sample are available upon request but qualitatively similar. The income tax is calculated as the ratio between total revenue and total taxable income We cluster standard errors (in parenthesis) at the state level. P-values are in brackets immediately below the standard errors, *** p<0.01, ** p<0.05, * p<0.1.

Table 8: Cross-district models in differences (9/1930 and 7/1932) for the impact of cuts in government spending by main spending categories on the Nazi party vote share

	State expenditure	Municipal expenditure	Reich Expenditure	Total Expenditure
	(1)	(2)	(3)	(4)
General administration	-0.138	0.234	-0.100	-0.049
	(0.087)	(0.210)	(0.124)	(0.040)
	[0.139]	[0.290]	[0.436]	[0.247]
Law and security	0.481**	0.512	0.535**	0.210**
	(0.173)	(0.404)	(0.217)	(0.088)
	[0.018]	[0.231]	[0.031]	[0.036]
Education	0.245	-0.020	0.425	0.105
	(0.179)	(0.138)	(0.279)	(0.076)
	[0.198]	[0.885]	[0.157]	[0.193]
Health	0.049**	0.476**	0.499***	0.046**
	(0.020)	(0.162)	(0.089)	(0.016)
	[0.035]	[0.013]	[0.000]	[0.016]
Housing	-0.000***	0.091***	-0.041	-0.000***
	(0.000)	(0.018)	(0.108)	(0.000)
	[0.002]	[0.000]	[0.712]	[0.002]
Economy and trade	0.262***	0.387**	0.360**	0.123**
	(0.078)	(0.167)	(0.146)	(0.046)
	[0.006]	[0.041]	[0.031]	[0.022]
Number of districts	457	457	457	457
Controls	Yes	Yes	Yes	Yes

Sources: See text. **Notes**: Dependent variable is the change in the percentage share (x 100) of valid votes received by the Nazi party. For the years used in the controls see Table 4. Data are only available for the Prussian provinces. Column 4 adds all kinds of spending (municipal, state and Reich expenditure). Robust standard errors in parentheses are clustered at the state level and p-values are immediately below the standard errors in brackets, *** p<0.01, ** p<0.05, * p<0.1.

Table 9: Cross-district models in differences for the impact of austerity on Nazi party entry between January 1932 and May 1933.

	(1)	(2)	(3)	(4)	(5)	(6)
Cuts in spending	2.093*	2.291*				
	(1.095)	(1.258)				
	[0.066]	[0.079]				
Fiscal consolidation 1 (wage taxes)			-0.275	0.734		
			(0.321)	(0.959)		
			[0.400]	[0.451]		
Fiscal consolidation 2 (income taxes)					0.728**	0.819**
					(0.306)	(0.329)
					[0.024]	[0.019]
Δ Wages		0.228		-0.605		-0.281
		(0.395)		(0.456)		(0.460)
		[0.569]		[0.195]		[0.546]
Δ Unemployment		-0.024		0.018		-0.105
		(0.046)		(0.014)		(0.063)
		[0.605]		[0.198]		[0.104]
Δ Economic output		0.039		0.325		-0.344
		(0.042)		(0.264)		(0.247)
		[0.366]		[0.228]		[0.174]
Number of districts	933	933	933	933	933	933
R^2	0.013	0.016	0.001	0.021	0.021	0.026

Sources: See text. **Notes**: Dependent variable is the number of new party members in the Nazi party between January 1932 and May 1933. For the details of the calculations on Nazi party membership see text and Adena et al. (2015). Data were originally from Brustein and Falter (1995). If we remove districts with zero members we get the same overall results. In total this accounts for 51 districts. We use the controls for 1930 and 1932 with the exception of income taxes that we use 1929 and 1932 and wage taxes (1928 and 1932). Standard errors in parentheses are clustered at the state level and p-values are immediately below the standard errors in brackets, *** p<0.01, ** p<0.05, * p<0.1.

Table 10: The impact of state level austerity on the rise of the Nazi party in the restricted sample of cross district-pairs located on opposite sides of the borders.

	District-pair fixed effects		Time-varying district-pair fixed effects		District-pair fixed effects + District fixed effects		Time varying district-pair fixed effects, district fixed effects	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
ln Fiscal Surplus 1 (government	13.548***	14.928***	13.842***	15.500***	41.016***	19.773*	47.825***	13.423**
spending and wage taxes)	(3.499)	(3.730)	(3.671)	(3.847)	(5.165)	(10.449)	(6.186)	(6.549)
	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.059]	[0.000]	[0.041]
ln Wages		-40.188***		-46.528***		-16.530		-57.457*
		(15.407)		(17.062)		(26.014)		(32.655)
		[0.009]		[0.007]		[0.525]		[0.079]
ln Unemployment		2.211		2.048		16.101*		14.455**
		(1.995)		(2.160)		(9.715)		(6.758)
		[0.268]		[0.343]		[0.098]		[0.033]
ln Economic Output		-2.265		-2.211		-0.769		-2.570
		(1.413)		(1.544)		(3.206)		(2.611)
		[0.109]		[0.153]		[0.811]		[0.325]
Number of districts	3,148	3,148	3,148	3,148	3,148	3,148	3,148	3,148
Number of clusters (states)	27	27	27	27	27	27	27	27
Number of clusters (border segments)	400	400	400	400	400	400	400	400
Overall R^2	0.731	0.757	0.758	0.788	0.842	0.856	0.903	0.919
ln Fiscal Surplus 2 (government	9.536***	10.465***	9.601**	10.607***	33.873***	19.255**	37.509***	8.086
spending and income taxes)	(3.555)	(3.973)	(3.761)	(4.090)	(4.222)	(8.450)	(4.315)	(7.888)
	[0.007]	[0.009]	[0.011]	[0.010]	[0.000]	[0.023]	[0.000]	[0.306]
ln Wages		-38.867**		-45.358***		-6.843		-54.041
		(15.350)		(16.965)		(25.585)		(34.303)
		[0.011]		[0.008]		[0.789]		[0.107]
ln Unemployment		2.800		2.632		15.131		16.364**
		(1.949)		(2.110)		(9.520)		(7.656)
		[0.150]		[0.213]		[0.112]		[0.033]
ln Economic Output		-2.455*		-2.358		-0.979		-1.186
		(1.332)		(1.480)		(2.647)		(2.255)
		[0.065]		[0.111]		[0.711]		[0.599]
Number of districts	3,148	3,148	3,148	3,148	3,148	3,148	3,148	3,148
Number of clusters (states)	27	27	27	27	27	27	27	27
Number clusters (border segments)	400	400	400	400	400	400	400	400
Overall R^2	0.728	0.755	0.754	0.785	0.850	0.858	0.907	0.918
Two-way clustering	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
District fixed effects	No	No	No	No	Yes	Yes	Yes	Yes
District-pair fixed effects	Yes	Yes	No	No	Yes	Yes	No	No
District-pair fixed effect x year	No	No	Yes	Yes	No	No	Yes	Yes

Sources: See text. Notes: Dependent variable is the percentage share of the valid votes cast going to the Nazi party in the elections of September 1930 and July 1932. Fiscal surplus is defined as total revenue in state income taxes minus municipal and state spending. For the years used in the controls see Table 4. We use a balanced panel and the methodology from Dube et al. (2010) for two-way clustering with standard errors (in parentheses) clustered at the state and border segment level. P-values are in brackets immediately below the standard errors, *** p<0.01, ** p<0.05, * p<0.1.

Table A1: Central and regional expenditure as a share of total expenditure.

Year	Denmark		France		Germany		Ireland		Norway		Sweden		UK	
	C	R	C	R	C	R	C	R	C	R	C	R	C	R
1925	52.8	47.2	n/a	n/a	45.4	54.7	n/a	n/a	n/a	n/a	n/a	n/a	65.4	34.6
1926	52	48	77	23	46	54.1	n/a	n/a	n/a	n/a	50.2	49.8	63.5	36.5
1927	50.4	49.6	n/a	n/a	46.7	53.3	70.7	29.3	n/a	n/a	n/a	n/a	62.6	37.4
1928	50.1	49.9	n/a	n/a	50.4	49.6	68.7	31.3	n/a	n/a	48.8	51.2	63.5	36.5
1929	49.7	50.3	72.6	27.4	51.5	48.6	70.8	29.2	n/a	n/a	n/a	n/a	63.4	36.6
1930	49.1	50.9	n/a	n/a	53.8	46.2	70.4	29.6	48.5	51.5	48.3	51.7	63.3	36.7
1931	48.8	51.2	n/a	n/a	52.9	47.2	69.3	30.7	48	52	n/a	n/a	63.5	36.5
1932	47.8	52.2	73.6	26.5	49	51	69.2	30.8	47.8	52.2	48.6	51.4	64.7	35.3
1933	52.4	47.6	n/a	n/a	51.3	48.7	67.9	32.1	47.9	52.1	n/a	n/a	63.4	36.6
1934	49.6	50.4	n/a	n/a	59.5	40.5	68.6	31.4	48.8	51.2	49.8	50.2	62.4	37.6
1935	44.9	55.1	69.9	30.1	63.6	36.5	68.5	31.5	49.5	50.5	n/a	n/a	61.7	38.3
1936	48.1	51.9	n/a	n/a	67.2	32.9	68.4	31.6	50.6	49.4	51.5	48.5	61.2	38.8
1937	50.3	49.7	n/a	n/a	71.8	28.1	68.6	31.4	50.2	49.8	n/a	n/a	61.8	38.2
1938	48.4	51.6	75.9	24.2	78.9	21.2	71.3	28.7	49.5	50.5	53.6	46.4	66.5	33.5

Sources: Flora (1983). **Notes**: *C* stands for Central government and *R* for regional governments adding regional and local governments. Figures show the shares in total expenditure.

Table A2: Cross-district models in differences for the impact of austerity in the President elections of April 1932 (second round run-off).

	Hitler	Hinden-burg	Hitler	Hinden-burg	Hitler	Hinden-burg
	(1)	(2)	(3)	(4)	(5)	(6)
Cuts in spending	1.906	-3.052**				
	(1.205)	(1.415)				
	[0.125]	[0.040]				
Fiscal consolidation 1 (wage taxes)			1.078	-0.960		
			(0.745)	(0.766)		
			[0.159]	[0.220]		
Fiscal consolidation 2 (income taxes)					0.243	0.120
					(0.443)	(0.542)
					[0.587]	[0.826]
Δ Wages	-0.386	0.320	0.035	-0.173	-0.135	0.094
	(0.527)	(0.476)	(0.582)	(0.576)	(0.511)	(0.490)
	[0.471]	[0.507]	[0.953]	[0.767]	[0.793]	[0.850]
Δ Unemployment	-0.180*	0.178**	-0.062	0.038	-0.116	0.106
	(0.097)	(0.086)	(0.139)	(0.168)	(0.136)	(0.152)
	[0.075]	[0.048]	[0.656]	[0.821]	[0.401]	[0.489]
Δ Economic output	-0.254	0.114	-0.197	0.127	-0.305	0.276
	(0.279)	(0.320)	(0.360)	(0.393)	(0.330)	(0.413)
	[0.370]	[0.723]	[0.588]	[0.749]	[0.362]	[0.510]
Number of districts	980	980	980	980	980	980
R^2	0.027	0.070	0.042	0.029	0.019	0.011

Sources: See text. **Notes**: Dependent variable is the change in the percentage share (x 100) of valid votes received by each candidate in the presidential elections of April 1932 (second round-off). For the years used in the controls see Table 4. Standard errors in parentheses are clustered at the state level and p-values are immediately below the standard errors in brackets in brackets, *** p<0.01, ** p<0.05, * p<0.1

Table A3: Cross-district models in differences for the impact of austerity on the Communist party vote share.

							Population weighted regressions		
	September 1930 and July 1932		September 1930 and November 1932		September 1930 and March 1933		9/1930 - 7/1932	9/1930- 11/1932	9/1930- 3/1933
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Panel 1: Cuts in government spending									
Cuts in spending	-0.026	-0.025	0.169	0.107	-0.087	-0.063	-0.022	0.114	-0.062
	(0.123)	(0.128)	(0.124)	(0.129)	(0.168)	(0.173)	(0.132)	(0.129)	(0.172)
Δ Wages		0.006		0.127**		0.189	0.010	0.135**	0.209
		(0.046)		(0.057)		(0.197)	(0.044)	(0.055)	(0.200)
Δ Unemployment		0.008		0.037***		0.023	0.009	0.038***	0.024
		(0.010)		(0.010)		(0.015)	(0.009)	(0.009)	(0.015)
Δ Economic output		0.038		0.082**		-0.001	0.038	0.083**	-0.001
		(0.036)		(0.033)		(0.007)	(0.036)	(0.032)	(0.007)
Number of districts	933	933	933	933	933	933	933	933	933
R^2	0.000	0.006	0.008	0.051	0.004	0.023	0.006	0.055	0.026
Panel 2: Fiscal consolidation 1 (cuts in government spending and change in wage taxes)									
Fiscal consolidation 1	-0.066	-0.053	-0.117	-0.033	-0.152	-0.117	-0.043	-0.020	-0.103
	(0.063)	(0.071)	(0.088)	(0.083)	(0.126)	(0.120)	(0.066)	(0.074)	(0.119)
Δ Wages		-0.008		0.131*		0.120	-0.001	0.141**	0.151
		(0.048)		(0.069)		(0.197)	(0.045)	(0.064)	(0.196)
Δ Unemployment		0.004		0.037***		0.018	0.006	0.039***	0.020
		(0.012)		(0.013)		(0.015)	(0.011)	(0.011)	(0.015)
Δ Economic output		0.032		0.072*		-0.003	0.033	0.075*	-0.002
		(0.035)		(0.038)		(0.008)	(0.035)	(0.037)	(0.008)
Number of districts	933	933	933	933	933	933	933	933	933
R^2	0.005	0.008	0.012	0.049	0.019	0.029	0.008	0.053	0.030
***Panel 3*:** Fiscal consolidation 2 (cuts in government spending and changes in income taxes)									
Fiscal consolidation 2	0.026	0.040	-0.039	0.013	-0.084	-0.055	0.038	0.009	-0.056
	(0.052)	(0.054)	(0.056)	(0.065)	(0.061)	(0.078)	(0.053)	(0.062)	(0.077)
Δ Wages		0.017		0.142**		0.161	0.020	0.148**	0.181
		(0.040)		(0.058)		(0.253)	(0.038)	(0.057)	(0.255)
Δ Unemployment		0.010		0.040***		0.020	0.011	0.041***	0.022
		(0.011)		(0.011)		(0.017)	(0.010)	(0.010)	(0.017)
Δ Economic output		0.045		0.079*		0.000	0.045	0.079*	0.000
		(0.041)		(0.039)		(0.007)	(0.041)	(0.039)	(0.006)
Number of districts	933	933	933	933	933	933	933	933	933
R^2	0.002	0.009	0.003	0.048	0.011	0.025	0.009	0.052	0.028

Sources: See text. **Notes**: Dependent variable is the change in the percentage share (x 100) of valid votes received by the Communist party at the district level. We use the controls of 1930 for the elections of September 1930 and 1931 for the elections of July and November 1932 (columns 1-4). For columns 5 and 6 we use the controls of 1930 for the elections of September 1930 and 1932 for the elections of March 1933. Government spending is the sum of total within state municipal spending plus total state spending. We use the income taxes of 1928 and 1932 for columns 1-4 and 1929 and 1933 for columns 5-6 and wage taxes for 1928 1932 for all the columns adjusted to the nearest election. To account for sample selection bias due to redistricting between elections and missing data, models are adjusted for the same number of observations (933). Unadjusted samples for missing values report the same overall findings. Standard errors in parentheses are clustered at the state level, *** p<0.01, ** p<0.05, * p<0.1

Table A4: Cross-district models in differences for the impact of austerity on the Centre party vote share.

							Population weighted regressions		
	September 1930 and July 1932		September 1930 and November 1932		September 1930 and March 1933		9/1930 - 7/1932	9/1930- 11/1932	9/1930- 3/1933
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Panel 1: Cuts in government spending									
Cuts in spending	-0.348***	-0.414***	-0.263**	-0.277**	0.176	0.323*	-0.400***	-0.264**	0.325*
	(0.098)	(0.125)	(0.109)	(0.119)	(0.194)	(0.162)	(0.122)	(0.116)	(0.162)
Δ Wages		0.088		-0.015		0.553***	0.092*	-0.012	0.553***
		(0.053)		(0.066)		(0.188)	(0.053)	(0.066)	(0.187)
Δ Unemployment		0.019**		0.001		0.044*	0.019**	0.001	0.042*
		(0.009)		(0.008)		(0.023)	(0.009)	(0.008)	(0.023)
Δ Economic output		-0.016		-0.028		0.009	-0.017	-0.029	0.009
		(0.022)		(0.024)		(0.011)	(0.023)	(0.025)	(0.011)
Number of districts	933	933	933	933	933	933	933	933	933
R^2	0.034	0.047	0.019	0.022	0.009	0.065	0.046	0.020	0.065
Panel 2: Fiscal consolidation 1 (cuts in government spending and change in wage taxes)									
Fiscal consolidation 1	-0.223***	-0.241***	-0.173**	-0.223***	0.018	0.207	-0.245***	-0.227***	0.201
	(0.060)	(0.066)	(0.067)	(0.071)	(0.108)	(0.171)	(0.066)	(0.071)	(0.169)
Δ Wages		-0.002		-0.088		0.559**	0.001	-0.086	0.554**
		(0.047)		(0.055)		(0.240)	(0.046)	(0.054)	(0.241)
Δ Unemployment		-0.007		-0.021**		0.053**	-0.006	-0.020**	0.051*
		(0.013)		(0.009)		(0.026)	(0.012)	(0.009)	(0.026)
Δ Economic output		-0.030		-0.046*		0.008	-0.032	-0.048*	0.007
		(0.032)		(0.026)		(0.013)	(0.031)	(0.026)	(0.012)
Number of districts	933	933	933	933	933	933	933	933	933
R^2	0.047	0.050	0.028	0.042	0.000	0.056	0.053	0.044	0.054
***Panel 3*:** Fiscal consolidation 2 (cuts in government spending and changes in income taxes)									
Fiscal consolidation 2	-0.045	-0.038	-0.052	-0.071	-0.026	0.062	-0.041	-0.074	0.053
	(0.044)	(0.048)	(0.039)	(0.044)	(0.105)	(0.096)	(0.048)	(0.004)	(0.094)
Δ Wages		0.036		-0.065		0.447***	0.042	-0.060	0.433**
		(0.081)		(0.082)		(0.189)	(0.079)	(0.081)	(0.184)
Δ Unemployment		0.006		-0.011		0.046*	0.007	-0.010	0.044
		(0.016)		(0.012)		(0.027)	(0.016)	(0.011)	(0.027)
Δ Economic output		-0.003		-0.027		0.002	-0.005	-0.028	0.002
		(0.032)		(0.027)		(0.014)	(0.031)	(0.027)	(0.014)
Number of districts	933	933	933	933	933	933	933	933	933
R^2	0.004	0.006	0.005	0.011	0.001	0.045	0.007	0.012	0.043

Sources: See text. **Notes**: Dependent variable is the change in the percentage share (x 100) of valid votes received by the Centre party at the district level. We use the controls of 1930 for the elections of September 1930 and 1931 for the elections of July and November 1932 (columns 1-4). For columns 5 and 6 we use the controls of 1930 for the elections of September 1930 and 1932 for the elections of March 1933. Government spending is the sum of total within state municipal spending plus total state spending. We use the income taxes of 1928 and 1932 for columns 1-4 and 1929 and 1933 for columns 5-6 and wage taxes for 1928 1932 for all the columns adjusted to the nearest election. To account for sample selection bias due to redistricting between elections and missing data, models are adjusted for the same number of observations (933). Unadjusted samples for missing values report the same overall findings. Standard errors in parentheses are clustered at the state level, *** p<0.01, ** p<0.05, * p<0.1

Table A5: Cross-district models in differences for the impact of austerity on the Social Democratic party vote share.

							Population weighted regressions		
	September 1930 and July 1932		September 1930 and November 1932		September 1930 and March 1933		9/1930 - 7/1932	9/1930- 11/1932	9/1930- 3/1933
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Panel 1: Cuts in government spending									
Cuts in spending	-0.297**	-0.317**	-0.363**	-0.325*	0.071	-0.021	-0.316**	-0.325*	-0.011
	(0.140)	(0.152)	(0.136)	(0.164)	(0.204)	(0.180)	(0.153)	(0.161)	(0.179)
Δ Wages		0.054		-0.141		-0.335	-0.010	-0.151	-0.334
		(0.130)		(0.149)		(0.318)	(0.132)	(0.151)	(0.320)
Δ Unemployment		0.012		-0.012		-0.030	0.011	-0.013	-0.030
		(0.020)		(0.025)		(0.028)	(0.020)	(0.025)	(0.028)
Δ Economic output		0.014		-0.025		-0.020	0.013	-0.025	-0.020
		(0.053)		(0.069)		(0.016)	(0.053)	(0.069)	(0.016)
Number of districts	933	933	933	933	933	933	933	933	933
R^2	0.010	0.012	0.013	0.022	0.002	0.030	0.012	0.023	0.030
Panel 2: Fiscal consolidation 1 (cuts in government spending and change in wage taxes)									
Fiscal consolidation 1	-0.167	-0.186	-0.121	-0.200	-0.066	-0.274	-0.206	-0.224	-0.286*
	0.145)	(0.169)	(0.192)	(0.204)	(0.154)	(0.165)	(0.167)	(0.202)	(0.165)
Δ Wages		-0.073		-0.214		-0.565**	-0.085	-0.230	-0.585**
		(0.128)		(0.138)		(0.275)	(0.129)	(0.138)	(0.273)
Δ Unemployment		-0.008		-0.033		-0.042	-0.010	-0.035	-0.042
		(0.024)		(0.027)		(0.026)	(0.024)	(0.027)	(0.026)
Δ Economic output		0.003		-0.037		-0.026	-0.000	-0.040	-0.027
		(0.072)		(0.088)		(0.018)	(0.071)	(0.087)	(0.018)
Number of districts	933	933	933	933	933	933	933	933	933
R^2	0.010	0.013	0.005	0.024	0.002	0.055	0.016	0.028	0.057
***Panel 3*:** Fiscal consolidation 2 (cuts in government spending and changes in income taxes)									
Fiscal consolidation 2	0.019	0.022	0.108	0.078	0.068	-0.001	0.022	0.078	0.001
	(0.091)	(0.099)	(0.105)	(0.116)	(0.087)	(0.077)	(0.098)	(0.114)	(0.075)
Δ Wages		-0.027		-0.147		-0.324	-0.032	-0.155	-0.327
		(0.129)		(0.150)		(0.333)	(0.131)	(0.153)	(0.334)
Δ Unemployment		0.005		-0.015		-0.030	0.005	-0.016	-0.030
		(0.022)		(0.025)		(0.028)	(0.022)	(0.026)	(0.029)
Δ Economic output		0.032		0.004		-0.019	0.032	0.003	-0.019
		(0.062)		(0.076)		(0.016)	(0.062)	(0.075)	(0.016)
Number of districts	933	933	933	933	933	933	933	933	933
R^2	0.000	0.002	0.008	0.016	0.004	0.030	0.002	0.018	0.030

Sources: See text. **Notes**: Dependent variable is the change in the percentage share (x 100) of valid votes received by the Social Democratic party at the district level. We use the controls of 1930 for the elections of September 1930 and 1931 for the elections of July and November 1932 (columns 1-4). For columns 5 and 6 we use the controls of 1930 for the elections of September 1930 and 1932 for the elections of March 1933. Government spending is the sum of total within state municipal spending plus total state spending. We use the income taxes of 1928 and 1932 for columns 1-4 and 1929 and 1933 for columns 5-6 and wage taxes for 1928 1932 for all the columns adjusted to the nearest election. To account for sample selection bias due to redistricting between elections and missing data, models are adjusted for the same number of observations (933). Unadjusted samples for missing values report the same overall findings. Standard errors in parentheses are clustered at the state level, *** p<0.01, ** p<0.05, * p<0.1

Table A6: Cross-district models in differences for the impact of austerity on the German National People's party vote share.

							Population weighted regressions		
	September 1930 and July 1932		September 1930 and November 1932		September 1930 and March 1933		9/1930 - 7/1932	9/1930- 11/1932	9/1930- 3/1933
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Panel 1: Cuts in government spending									
Cuts in spending	-0.520	-0.853	-0.238	-0.506	-0.208	-0.165	-0.815	-0.474	-0.149
	(0.413)	(0.525)	(0.249)	(0.373)	(0.262)	(0.293)	(0.524)	(0.372)	(0.289)
Δ Wages		0.532***		0.474**		0.445	0.531***	0.473**	0.465
		(0.138)		(0.173)		(0.313)	(0.137)	(0.173)	(0.311)
Δ Unemployment		0.122*		0.101*		0.061*	0.121*	0.100*	0.062*
		(0.068)		(0.058)		(0.033)	(0.067)	(0.057)	(0.034)
Δ Economic output		0.065		0.083		0.006	0.065	0.085	0.006
		(0.108)		(0.097)		(0.018)	(0.111)	(0.100)	(0.018)
Number of districts	933	933	933	933	933	933	933	933	933
R^2	0.022	0.150	0.005	0.113	0.010	0.069	0.149	0.113	0.070
Panel 2: Fiscal consolidation 1 (cuts in government spending and change in wage taxes)									
Fiscal consolidation 1	-0.790**	-0.675**	-0.572**	-0.440*	-0.492**	-0.461	-0.663**	-0.437*	-0.456
	(0.305)	(0.288)	(0.260)	(0.238)	(0.193)	(0.274)	(0.287)	(0.238)	(0.275)
Δ Wages		0.309*		0.334*		0.128	0.310*	0.334*	0.139
		(0.156)		(0.170)		(0.367)	(0.157)	(0.172)	(0.369)
Δ Unemployment		0.058		0.061		0.041	0.058	0.060	0.042
		(0.055)		(0.048)		(0.030)	(0.054)	(0.047)	(0.030)
Δ Economic output		0.011		0.045		-0.002	0.013	0.047	-0.002
		(0.074)		(0.079)		(0.015)	(0.077)	(0.082)	(0.016)
Number of districts	933	933	933	933	933	933	933	933	933
R^2	0.166	0.201	0.097	0.142	0.087	0.116	0.201	0.144	0.117
***Panel 3*:** Fiscal consolidation 2 (cuts in government spending and changes in income taxes)									
Fiscal consolidation 2	-0.270	-0.158	-0.198	-0.086	-0.310	-0.283	-0.167	-0.088	-0.283
	(0.232)	(0.221)	(0.182)	(0.177)	(0.185)	(0.246)	(0.218)	(0.176)	(0.244)
Δ Wages		0.397**		0.397*		0.214	0.402**	0.402*	0.229
		(0.161)		(0.203)		(0.482)	(0.160)	(0.202)	(0.473)
Δ Unemployment		0.090		0.083*		0.0490	0.091*	0.083*	0.051
		(0.053)		(0.048)		(0.034)	(0.053)	(0.048)	(0.034)
Δ Economic output		0.080		0.093		0.010	0.079	0.094	0.010
		(0.103)		(0.098)		(0.018)	(0.104)	(0.100)	(0.018)
Number of districts	933	933	933	933	933	933	933	933	933
R^2	0.040	0.109	0.024	0.097	0.065	0.104	0.115	0.100	0.106

Sources: See text. **Notes**: Dependent variable is the change in the percentage share (x 100) of valid votes received by the German National people's party at the district level. We use the controls of 1930 for the elections of September 1930 and 1931 for the elections of July and November 1932 (columns 1-4). For columns 5 and 6 we use the controls of 1930 for the elections of September 1930 and 1932 for the elections of March 1933. Government spending is the sum of total within state municipal spending plus total state spending. We use the income taxes of 1928 and 1932 for columns 1-4 and 1929 and 1933 for columns 5-6 and wage taxes for 1928 1932 for all the columns adjusted to the nearest election. To account for sample selection bias due to redistricting between elections and missing data, models are adjusted for the same number of observations (933). Unadjusted samples for missing values report the same overall findings. Standard errors in parentheses are clustered at the state level, *** p<0.01, ** p<0.05, * p<0.1

Table A7. Cross-district models in differences for the impact of district income and wage taxes on the Nazi party vote share using percentage point change instead of percentage change in income and wage taxes. Using difference between (7/1932 and 9/1930), (11/1932 and 9/1930), and (3/1933 and 9/1930).

	(1)	(2)	(3)	(4)
Income taxes	2.894***	2.923***		
	(0.549)	(0.558)		
	[0.000]	[0.000]		
Wage taxes			0.544***	0.510***
			(0.196)	(0.196)
			[0.006]	[0.009]
% Δ Wages		0.142		0.100
		(0.094)		(0.095)
		[0.132]		[0.294]
% Δ Unemployment		-0.061***		-0.064***
		(0.022)		(0.021)
		[0.005]		[0.003]
% Δ Economic output		-0.217*		-0.208
		(0.131)		(0.131)
		[0.100]		[0.113]
Number of observations	2,409	2,409	2,409	2,409
R^2	0.016	0.029	0.009	0.022

Sources: See text. **Notes**: Dependent variable is the percentage share (x 100) of the valid votes cast going to the Nazi party in the different elections. We use income level wage taxes as a measure of austerity. Taxes are calculated as the percentage point change instead as percentage change. We cluster standard errors (in parenthesis) at the district level. P-values are in brackets immediately below the standard errors, *** p<0.01, ** p<0.05, * p<0.1.

Table A8. Social, economic and religious structure between border districts located on opposite sides of the border, percentages of total population

	Number districts	Mean		Standard Deviation		Minimum value		Maximum value		t-test	
		District 1	District 2	District 1	District 2	District 1	District 2	District 1	District 2	t-stat.	p-value
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Agriculture, Forestry and Fishery, 1925	232	36.034	36.025	18.488	17.960	0.685	0.255	83.649	78.536	0.008	0.994
Industry and Manufacturing, 1925	232	35.253	35.803	13.328	14.739	4.170	8.825	68.056	75.209	-0.674	0.501
Trade and transportation, 1925	232	12.669	11.846	6.951	6.447	2.476	2.672	43.974	40.126	1.699	0.091
Civil service, army and clergy, 1925	232	3.669	3.633	1.318	1.592	0.574	0.855	9.094	10.935	0.317	0.752
Self-employed workers, 1925	232	23.854	23.868	7.868	7.817	8.576	9.912	43.130	48.313	-0.033	0.974
White-collar workers, 1925	232	11.358	10.779	5.207	5.184	2.406	2.534	28.850	29.446	1.505	0.134
Blue-collar workers, 1925	232	39.971	40.379	11.457	12.057	13.213	11.346	69.042	72.287	-0.664	0.507
Employed in all occupations, 1925	232	91.295	91.033	4.869	8.347	37.118	39.062	97.945	130.388	0.443	0.658
Unemployed or with no occupation, 1925	232	8.175	8.144	2.861	2.960	2.055	2.971	20.517	20.517	0.161	0.872
Catholic population, 1925	232	25.544	26.168	31.996	30.613	0.404	0.650	98.380	98.425	-0.324	0.746
Jew population, 1925	232	0.451	0.458	0.575	0.841	0	0	2.283	10.471	-0.119	0.905
Unemployed, 1933	192	0.643	6.544	3.346	3.019	1.554	1.202	16.142	21.750	-0.562	0.575
Full-time occupation, 1933	192	7.994	7.922	2.219	2.288	3.575	3.457	15.312	18.600	0.494	0.622

Sources: Data are originally from the census of 1925 and 1933 collected by Falter and Gruner (1981). **Notes**: We adjusted data for some missing values in districts and pair districts. We report the t-statistic (column 10) and the corresponding two-tailed p-value (column 11). When p-values are above 0.05 (5% level of confidence) we conclude that the mean difference between border districts are not different from 0. Data from the census of 1925 refer to the number of male wage earners employed in the different occupations.