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***DID NAZIS SAVE MORE? HOUSEHOLD SAVING AND
IDEOLOGY IN PRE-WAR NATIONAL SOCIALIST
GERMANY***

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Did Nazis save more? Household saving and ideology in pre-war National Socialist Germany

September 2013

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Abstract

It is commonly thought that the rapid increase in household saving during the early years of National Socialism was partly driven by ideological factors. On this view, the popularity of the regime allowed it to exert ‘moral suasion’ on households to save more than they might have done in the absence of such indoctrination. This paper employs the previously unpublished raw data from a household budget survey conducted in 1937 to identify ideological heterogeneity at the household level. Assuming that households’ responsiveness to the regime’s saving propaganda was a function of their exogenous ideological commitment to National Socialism, the paper tests the hypothesis that Nazi households saved more than others. The new evidence presented here does not confirm this hypothesis.

Keywords: German economic history, National Socialism, household saving

JEL codes: N14, D12

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1 Introduction

National Socialist Germany recovered rapidly from the Great Depression. Unemployment fell, industrial investment soared, and national income rose. Deficitary government spending was essential to the recovery. While a growing share of government spending was financed by covert monetary expansion, the regime also tapped into savings capital generated by the private sector. The years between 1933 and 1939 saw a transformation of the domestic generation of financial capital. As shown in figure 1, government dissaving rose as the new regime spent heavily on work creation programmes and, increasingly, on the re-armament drive. Public deficits were mirrored by soaring private savings, with household saving growing particularly fast. The household saving rate attained unprecedented levels in the late 1930s, as illustrated in the right-hand panel of figure 1. While disposable income quickly regained the levels of the late 1920s, consumption remained sluggish for the rest of the decade.

[Figure 1 about here.]

The conspicuous increase in the household saving rate in the NS economy prior to the outbreak of war in 1939 has given rise to different interpretations in the literature. Three hypotheses comprehensively capture the most plausible explanations, though they are not mutually exclusive. Some historians have pointed to changes in the socio-economic and demographic structure of the German economy as it emerged from the Great Depression. Dimsdale, Horsewood and van Riel argue in a forthcoming paper that the low propensity to consume can partly be explained by the rising income inequality of the 1930s. Wage incomes indeed lagged booming entrepreneurial profits and capital incomes as the regime accommodated industrial interests. Schweitzer (1948), a contemporary observer of the NS economy, stressed the importance of the psychological aftermaths of the Great Depression. To his mind, the experience of a severe debt deflation had strengthened households' precautionary motive for saving. Demographic change, moreover, led to lower dependency ratios and smaller households.

Notwithstanding these structural changes, there is a consensus among historians writing on the period that higher saving rates were not wholly desired by households

but were deliberately ‘enforced’ by the regime through market interventions (James, 1986; Overy, 1982; Spoerer, 2005; Tooze, 2006). With a view to facilitating economic militarisation, the Four Year Plan, implemented in 1936, saw to the rationing of a range of raw materials required for the production of consumption goods and imposed rigid controls over retail prices (Steiner, 2006; Berghoff, 2005). The distortionary effects on the supply side, on this logic, led to shortages of consumption goods. These shortages in turn left households with no choice but to consume a smaller share of their disposable income than they might have desired in the absence of shortages. The substitution of leisure was ruled out against the background of a labour market tightly controlled by the *Deutsche Arbeitsfront*. This hypothesis of ‘forced saving’ is theoretically well grounded (Barro and Grossman, 1971), and has been substantiated empirically in recent studies by Spoerer and Streb (2010) and Brodesser (2011). However, it is only plausible from late 1936 onwards.

Until the implementation of the Four Year Plan, the regime is thought to have relied on ‘moral suasion’, or indeed ‘massive propaganda’ (Spoerer and Streb, 2010), in fostering the desired degree of thrift on the part of private households. While the propagandist concept of *Eisernes Sparen* became most prevalent during the war, the advocacy of household thrift had been central to NS propaganda from 1933 onwards. Among other measures, the regime organised country-wide *Nationale Spartage* (national saving days) on which occasion important Nazi leaders reminded the public of the ‘national duty’ to save and encouraged them to make deposits with their local banks (Brodesser, 2011). Savings banks organised the so-called *Schulsparen* programme whereby pupils were encouraged to open their first saving deposit at a very young age. In 1937, a third of the 9 million German pupils participated in the scheme, saving an estimated 15 million Reichsmark, or roughly 5 RM per head, over the course of the year. Members of the Hitler Youth participated in a similar scheme, with 150,000 members depositing 370,000 Reichsmark in 1937.¹ While these sums were negligible, the primary objective of the schemes was to instill in young Germans, and indirectly their parents, a natural disposition to save.

The demand that households restrain consumption in return for the provision of public goods was especially dear to the left wing of the NSDAP. A pamphlet circulated by the NSDAP in 1937, for instance, proclaimed that ‘the German people will forever be a saving people, for it must save in order to keep creating new jobs, living space, cultural wealth and military strength for the benefit of coming generations.’² The administrative elites of the new regime, more pragmatically, reasoned that economic recovery and rearmament depended on privately generated financial capital. In an article drafted for publication in the *Voelkische Beobachter* in August 1934, even the ideologically reserved, if acquiescent, economists of the *Reichsbank* thus stressed that households had an obligation to save for the greater good: ‘The government expects that savers readily provide their savings for the tasks to be carried out for the good of the whole nation, and even more so as saving has only been made possible thanks to the reconstruction work of the Fuehrer.’³ In a speech given on the national saving day of 1938, Rudolf Brinkmann, secretary of state in the *Reichswirtschaftsministerium*, remarked that ‘by his saving, the individual repays the Fuehrer for his thorough and omniscient steering of German history.’ The speech closed grandiosely when Brinkmann concluded that ‘he who saves not only builds his own future but also contributes to the foundations of that great monument which protects us all within its walls - the *Grossdeutsche Reich*.’⁴

Saving was increasingly portrayed as a moral obligation to reciprocate the expenses incurred by the government in achieving full employment. The regime recognised that the effectiveness of this propaganda was a function of the ideological assimilation of the population. Rising household savings were therefore interpreted as an endorsement of National Socialist rule. Later, during the war years, even the SS used fluctuations and trends in the level of saving deposits as a barometer of the regime’s popularity (Boberach, 1984). As an article in the *Berliner Nachtausgabe* put it, “the people’s saving motive is a particularly tender plant which only flourishes when great care is taken of it.”⁵ The implicit assumption that household saving was determined partly by ideology has recently been adopted by a number of historians (Aly, 2005; Kratz, 2006).

The supposed effect of such moral suasion on household saving, and the causal link between ideology and saving in National Socialist Germany more generally, has never been tested empirically. This article therefore is the first attempt to test the thesis that ideology drove household saving. The analysis is based on previously unpublished budget survey data from 1937 that not only provide an abundance of financial, socio-economic and demographic information at the household level, but also permit the identification of inter-household variation in ideological commitment to National Socialism by extracting a proxy for NSDAP membership. Assuming that households' responsiveness to saving propaganda was a function of their exogenous ideological commitment to National Socialism, the paper tests the hypothesis that Nazi households saved more. This hypothesis cannot be substantiated. This is strong evidence that ideology is not a significant explanatory factor.

2 Data

In 1927 and 1937, the *Statistisches Reichsamt* (Statistical Office) conducted budget surveys among 1,940 and 1,509 German households, respectively. Covering periods of twelve months, at daily frequencies where applicable, and disaggregating seven sources of income and expenditures on more than 200 different categories, the surveys were by far the most extensive studies of their kind in interwar Europe. The surveys also recorded a wealth of socio-economic and demographic information on participating households. The data collected in 1937 were aggregated and superficially summarised in issues of the *Statistisches Jahrbuch des Deutschen Reichs* and the *Vierteljahreshefte der Statistik des Deutschen Reichs*, the official publications of the *Statistisches Reichsamt*, but the outbreak of war in 1939 prevented the publication of the individual budgets. The latter were eventually published by the *Statistisches Bundesamt* of the Federal German Republic in 1960. These published data, just as the 1927 budget data published in 1930, have been used by Triebel (1991), Coyner (1977) and Spoerer and Streb (2010) to study the structure of household consumption in interwar Germany. The published data have not lent themselves to the study of household saving behaviour, however, since the *Bundesamt* aggregated the relevant saving components

into a single net saving figure of unspecified composition. More importantly with respect to the question addressed in this paper, there is no indication in the published data as to households' ideological leanings.

This paper resolves the lack of suitable data by having recourse to the unpublished raw data generated by the survey conducted in 1937. The original budget ledgers, in which participating households recorded their economic circumstances over the course of 1937, survived in Soviet and East German archives before being transferred to the *Bundesarchiv* in Berlin-Lichterfelde in the 1990s. The raw data permits the decomposition of gross saving and dissaving into up to eight components, as listed in table 5. Descriptive statistics of sample average saving rates are presented in section 3.1 after some work is done to split the households in the sample into NSDAP members and non-members. The original budget ledgers include a separate expenditure category comprised of contributions to the "NSDAP and its associated organisations". These contributions are used in section 3.1 to identify NSDAP members and thus, it will be argued, to separate ideologically committed households from ideologically neutral or hostile ones.

A sub-sample of 500 households was extracted from the 1,509 files in the archive, selected in alphabetical order of households' places of residence.⁶ This procedure is not prone to any selection bias that would affect the findings of the following analysis.⁷ Nor is the original sample of 1,509 households likely to suffer from such bias. The *Reichsamt* selected participating households on the basis of their perceived likelihood of coping with the demands of recording, at times, daily expenditures on manifold items for the duration of one year. Literacy and numeracy naturally were pre-requisites, but they were widespread among the working-class population of interwar Germany. There is evidence, however, that local representatives screened potential participants for their discipline and diligence. To the extent that these attributes are associated with ability to execute intertemporal utility maximization choices, there may be a selection bias raising the sample average saving rate.

Importantly, there is no evidence that households' ideological assimilation with National Socialism was a selection criterion. As discussed in section 3.1, only 23.3% of

the households in the sample were NSDAP members, and 21.3% made no contributions to the party at all. Further, while the anonymous process makes it unlikely that households recorded incorrect expenditures, it is possible that ideologically committed households in particular altered their consumption and saving behaviour during the survey period so as to render their budgets more consistent with the kind of frugality advocated by the regime. Even if there had been such a bias, however, it would work against the results presented in section 4, as it would have raised the saving rates of Nazis relative to those of households less keen to comply with the saving propaganda disseminated by the regime.

The survey sample is not perfectly representative of the German population. The survey was commissioned by the *Deutsche Arbeiterfront* (DAF), the nominal trade union of NS Germany. Its interest was primarily in working-class households. Consequently, the household heads in the sample were mostly blue-collar workers on weekly wages, alongside a small number of white-collar employees on monthly salaries, as summarised in table 2. Agricultural workers, farmers, civil servants, the self-employed, or *rentiers* are not represented. Affluent households living predominantly on capital income are not represented, either. This may reduce the average saving rate in the sample relative to the general population. Moreover, the DAF wished to gain insights into the budgets of workers on a ‘representative’ weekly wage of around 30 Reichsmark. Although participating households tended to be chosen on this criterion, there remains considerable variation in household incomes, not least because of large variations in other sources of household income, as can be gleaned from table 1. Around 90% of German wage- or salary-earners would have fallen within the range of work incomes represented in the sample.⁸ Unfortunately, capital income cannot be separated satisfactorily from other miscellaneous sources of income and is thus included in total household income.

[Table 1 about here.]

Households were further selected by the *Reichsamt* so as to reflect population densities as accurately as possible. While Berlin was the largest place of residence represented in the sample with 4.24 million citizens, some households in the sample

lived in villages as small as 175 inhabitants. The sub-sample of 600 households analysed in this paper maybe slightly skewed towards larger cities in southern Germany as most large cities start with a letter in the alphabetical range A-K. The age range of household heads is limited and does not capture the full life cycle. Since all (invariably male) household heads were in employment at the beginning of the survey period, households at the extremes of the life-cycle, whether in vocational training or retirement, are not observed. Household sizes, by contrast, vary considerably, ranging from 2 to 13 persons. The headcount is adjusted for temporary absences of individual household members recorded in the raw data. Most dependents were children under the age of fifteen years, though some families accommodated members over sixty-five years old. Most of the latter contributed small incomes to the household, rather than being entirely dependent. Maids and boarders are not included in the household size.

Table 2 presents some indicative information on households' wealth and financial exposure. 13% of households lived in residential property. Most households had some exposure to financial institutions. 78% of households paid premiums towards life insurance policies and 87% of households kept a savings deposit. The level of deposits at the beginning of the period is not known. None of the households in the sample appear to have invested directly in securities.

[Table 2 about here.]

3 Method

This section develops a strategy to identify ideological heterogeneity among the households in the sample. A number of potential problems with this strategy are dealt with in section 3.1. Section 3.2 defines household saving and incorporates the ideological variable into a simple saving model to be fitted to the cross-sectional data.

3.1 Identifying ideological heterogeneity

The effect of moral suasion on saving can only be assessed by identifying an ideological channel at the household level. It is assumed that all households in Germany were

exposed to the same volume or degree of NS propaganda, and that calls to save constituted a constant share of NS propaganda across regions. It is further assumed that some German households were more receptive to NS propaganda than others. This receptiveness can be conceptualised as a function of households' ideological commitment to the causes and values of the National Socialist movement. In general, of course, ideology and propaganda interact in feedback loops: propaganda creates ideological assimilation. In the specific case of savings propaganda, by contrast, it is assumed that the effectiveness of propaganda depended on households' prior ideological commitment and that it had no simultaneous effect upon this commitment.

Yet measuring ideological commitment at the household level is difficult. The data on households' contributions to the NSDAP and its associated organisations are too noisy to serve as a signal of true ideological alignment in their raw form. Contributions included not only membership dues and voluntary donations but also other miscellaneous payments which cannot simply be taken as expressions of sympathy with the regime. Although donations to the two most important non-political organisations associated with the regime, the *Winterhilfswerk* (winter help) and the DAF itself, are listed as separate categories, a number of smaller organisations soliciting or possibly enforcing contributions may well be included in the category in question. While the DAF collected mandatory contributions from workers, the *Winterhilfswerk* and other parts of wider NS regime officially relied on donations. Yet most historians agree that contributions to this organisation were mostly enforced by local cadres. Welch (2004, p. 229) writes that winter help and other 'voluntary' donations soon amounted to 'compulsory gestures of conformity and 'political reliability'', which began to meet with resentment as it became clear that funds were increasingly diverted to pay for the rearmament programme. Unger (1970, p. 128) describes in some detail the role of the party's *Blockführer* and *Blockhelfer* in collecting 'contributions to a variety of party-sponsored welfare funds.' Shirer (1991), Noakes (2004) and Schmiechen-Ackermann (2000) offer similar accounts of the practice of *Menschenführung* as involving the collection for winter help and similar welfare schemes. From this detailed literature on the local supervision of individual households by the cadres of the party organisation

emerges the picture of a tightly controlled political network that made it difficult to avoid paying into welfare schemes. These sources do not explicitly mention enforced donations to the party itself alongside contributions to the party's welfare collections. Nevertheless, the expenditure category in the survey data may contain payments to associated organisations other than winter help that were not necessarily ideologically motivated.

Instead of using contributions to the NSDAP as a continuous variable, therefore, I use a threshold requirement to separate NSDAP members from the vast majority of non-members. NSDAP members paid 1.80 Reichsmark per month in 1937 (Falter, 1998). The monthly records in the original budget ledgers indeed reveal that many households made regular monthly payments oscillating around this amount. Every member would have paid at least 21.6 RM over the course of the year. This threshold amount roughly coincides with a local peak in the distribution of contributions across the sample households, as shown in figure ??.

[Figure 2 about here.]

The critical question, then, is whether NSDAP membership in 1937 reliably serves to differentiate politically loyal National Socialist from Germans that were neutral or even hostile towards the regime. It needs to be established more clearly that even after four years of *Gleichschaltung* the ideological signal of party membership had neither been diluted by opportunistic or involuntary new members, nor washed out by the seeping indoctrination of the wider population as a whole. The first objection can be dismissed by reference to the admission stop between the spring of 1933 and late 1936. As early as April 1933, Hitler and the core members of his gang were concerned about the ideological purity of the movement as the party received a wave of membership applications in the wake of its recent electoral successes. Like Hitler, many party veterans looked down upon these new members as political opportunists; they were commonly referred to as the *Maerzgefallenen*, that is those who succumbed to the lure of National Socialism because of its success in the elections of March 1933 (Falter, 1998). It was this concern over the purity of the movement that led to the admissions stop which became effective on 1 May 1933 and continued well

into 1937 (Broszat, 1969; Paetzold and Weissbecker, 2009). During this period, the party officially closed its membership rolls, permitting only under-21s and members of the Nazi Student Union to sign up (Kater, 1983, p. 73). Paetzold and Weissbecker (2009, p. 265) argue that the stop was never effectively enforced, as members of most other NSDAP-related organisations as well as individuals deemed important to the party, such as board members of strategically important corporations, were allowed and indeed invited to join. They cite evidence that in some *Gaus* the share of members that had joined prior to 1933 was as low as 20% by the beginning of 1935.⁹ Yet Paetzold and Weissbecker (2009) qualify the dilutory effect this had on the party's ideological unity by stressing that not few post-1933 members only thought of their personal gain; rather, they write, 'some now believed that much of Hitler's proclaimed politics was right after all.'(p. 265). More importantly, they show that the majority of the new members were civil servants and 'members of the intelligentsia'. Many civil servants, and teachers in particular, who had failed to gain party membership by May 1933 instead joined vocational organisations associated with the NSDAP, such as the *NS-Lehrerbund* (teacher union), from which they then upgraded to full party membership (Muehl-Benninghaus, 1996, p. 108). The party was not as open, however, to the working-classes, the segment of the population covered by the survey data analysed in this paper. There is no evidence to suggest that workers were strongly represented among the *Maerzgefallenen* or post-1933 members, for the regime had no incentive to make exceptions for working-class families.

Some historians have claimed that party membership, or at least the corresponding contributions, were enforced (Balogh, 1938). Kater (1983, p. 74) concedes that 'in the case of certain individuals and even certain subgroups strong suasion was applied in soliciting 'voluntary' membership.' Yet again, according to Kater, 'there is no evidence that members of the German working class were physically or psychologically compelled by functionaries of the regime to join the Nazi party between 1933 and 1939'(p. 75).

The vast majority of working-class party members in 1937 had thus become members by the end of 1933. The second problem is more difficult to resolve. Just as oppor-

tunists were prevented from joining the NSDAP between the summer of 1933 and late 1936, it is possible that the ban also excluded from the party ranks Germans who had genuinely converted to National Socialism in both spirit and action. While it was noted above that many of those found their way into the party via associated organisations, it is possible that many kept being excluded, especially among the working classes. Further, there is evidence that some early NSDAP members quit the party because they could no longer afford to be members as membership dues. Brustein (1996, pp. 167-8) notes that in his 'examination of the NSDAP master file [he] discovered that many membership records reporting an individual's departure from the party before 1933 noted as the cause the member's failure to pay dues.' This likely continued to happen after 1933, even if the political cost of exiting the party increased. Some ardent supporters may never have joined for financial hardship. Brustein concludes that 'the financial burden of monthly dues probably deterred many financial hard-pressed farmers, artisans, blue-collar workers, and service workers from joining the NSDAP.' To the extent that these cases were prevalent, party membership, even if strictly reserved for genuine Nazis, would cover only a subset of the households ideologically committed to it. Misidentifying financially hard-pressed would-be NSDAP members is not likely to bias the analysis, of course, as they probably had no financial leeway to raise their saving rate in response to the party's moral suasion to do so. This bias does potentially arise, however, from leaving out Nazis who would have been happy and able to pay dues if it had not been for the admissions stop. Some of these households possibly made voluntary donations exceeding the threshold and are - incorrectly yet appropriately - classified as members. Indeed some households made substantial annual lump-sum payments, often just before Christmas, rather than paying regular monthly dues. Other Nazi households may slip under the radar of the identification strategy adopted.

To deal more carefully with this problem, a more formal test is carried out to substantiate the identification strategy: does membership as a categorical variable capture ideological heterogeneity among households? The strong link between party membership and ideology is beyond doubt as of the beginning of 1933 (Brustein, 1996).

For this link to persist in 1937, the determinants of the probability of a household being headed by a member in 1937 should map onto the socio-economic, demographics, and confessional attributes which other scholars have found to differentiate NSDAP members from the general population up to 1933. While most research on the perennial question as to who supported Hitler and the Nazis has focused on electoral voting data (King et al., 2008; Childers, 1983; Hamilton, 1982; Lipset, 1981; Falter, 1991), a number of authors have studied in detail the structure of the NSDAP membership between the foundation of the party and its coming to power in 1933 (Brustein, 1996; Falter and Kater, 1993). Two sources have been used in these studies: the NSDAP's proprietary publications on its membership, and the original master file of NSDAP members, most of which survived the war and is today held in the Berlin Document Center (BDC) housed by the *Bundesarchiv*. In the 1970s Michael Kater drew a sample of approximately 4,000 member cards from the collection of more than one million cards, covering members that had joined the party between 1925 and 1945. In 1989, two research groups from the Free University Berlin and the University of Minnesota, led by Brustein and Falter, jointly drew large sample of 44,004 members who joined between 1925 and 1933.

Brustein and Falter used a set of socio-economic, demographic and confessional data at the county-level, assembled earlier by Falter, to analyse the membership sample ecologically. Specifically, they matched members' place of residence with the respective population size, the confessional mix, the unemployment rate, and the vocational structure of the local population, all of which information was retrieved from the highly disaggregated census data of 1925 and 1933 and other disparate sources. One important inference from the BDC sample was that NSDAP members were disproportionately well represented in predominantly Protestant communities and in rural areas. Surprisingly, many members came from counties with low unemployment rates in 1933. The working class was overrepresented. However, this finding is somewhat indeterminate as it fails to differentiate between blue- and white-collar workers. Most of the literature suggests that the lower middle classes, including white-collar employees, were more attracted to the NSDAP than workers (Lipset, 1981). Lastly, there is a

consensus in the literature that Bavarians were overrepresented among the members, whereas Berlin residents were notoriously absent from the membership rolls, conspicuously more so than in other major cities.

I use Falter's electoral and socio-economic data¹⁰ by matching individual households in the 1937 budget survey with the counties in Falter's dataset, thus being able to draw exactly the kind of ecological inferences about the households in the 1937 which Falter and Brustein made about the NSDAP members in their BDC sample. I then estimate a simple probit model to analyse how these ecological variables, as well as some deterministic variables taken from the raw data of the 1937 budget survey, condition the probability of a household making contributions to the NSDAP that exceed the minimum threshold. The estimated coefficients are summarised in table 3. Postestimation shows that while the model correctly classifies 78.6% of the observations as members or non-members, the sensitivity of the model is extremely low at 9.8%. The model classifies 120 of the 133 identified member households in the sample as non-members. The specificity, by contrast, is 98.5%, as all but 7 of the 460 non-members are correctly classified. The threshold criterion used to separate Nazis from non-Nazis therefore is rather loose. This explains the relatively high share of Nazis identified among the sample population. While a share of 22% is roughly in line with the share of NSDAP members among the German population at large, the share among the working class was probably lower, though there are no reliable quantitative estimates on this.

[Table 3 about here.]

The coefficients of the conditional probabilities are converted into marginal effects at the sample medians in table 4. Five of the six ecological variables, with the exception of the local share of Protestants in 1925, have the expected sign, but few of them are statistically significant. Being a resident in Berlin reduced the probability of being a member by 13%, whereas living in Bavaria increased the probability by 12%. Large households were less likely to be members, and disposable income has a positive marginal effect of 40%. These coefficients reflect the fact that it was expensive to be a party member. Overall, although most of the estimated marginal effects are not

inferentially robust, the model provides some indicative evidence that membership in 1937 still maps onto the ideological fault lines of the years up to 1933. It is thus used as a categorical variable to proxy households' ideological commitment to the NSDAP.

[Table 4 about here.]

3.2 Savings model

Disposable income, $YDISP$, is defined as total household income minus taxes and contributions to compulsory social insurance schemes covering unemployment and sickness. Disposable income excludes gross capital consumption or borrowing. Where gross capital consumption exceeds gross savings, net saving thus turns negative. This is not only a more plausible definition of disposable income but also avoids the complications coming with a limited dependent variable censored by zero. There is no consensus in the literature as to the most realistic definition of saving. The classification of expenditure on life insurance, durables, and human capital is theoretically ambiguous and calls for historical contextualisation. Loosely following a number of recent studies in household saving using similar budget survey data (Aktas et al., 2012; Szekely and Attanasio, 2000), I distinguish between four conceptions of saving, widening the definition in a cumulative manner. The first definition, S_1 includes only net additions to the stock of cash and to saving deposits, as well as net debt service. Life insurance premiums are added to savings under S_2 . The third definition, S_3 , also includes expenditures on a range of durable goods. Some authors studying household saving have included in this category even clothing and furniture (Aktas et al., 2012). I use a more conservative definition of durable goods as items serving as a store of value, thus limiting the variable to one-off expenditures on musical instruments, radios, bicycles, motorbikes, and sewing machines. Net changes in provisions are also included in this measure. Many families made a point of recording greater stocks of coal or potatoes at the end of the year. They were clearly perceived as saving. The fourth definition, S_4 , expanding the concept of saving to investments in human capital, includes expenditures on health and education. Unfortunately, the data do not permit the disaggregation of cosmetic products on the one hand and expenditures on

healthcare on the other. Further, some of the supposedly educational expenditures on items such as newspapers and books are of a more recreational nature. Table 5 shows how the measure of savings increases as the definition is broadened. Although the plausibility of these definitions decreases as the measure is expanded, the model is estimated for all four corresponding saving rates with a view to demonstrating the robustness of the results.

[Table 5 about here.]

Saving rates are calculated as the share of disposable income not consumed. I use the logarithmic difference between disposable income and consumption to calculate the saving rate, SR_i . The advantage of this formula over the simple saving ratio is that the logarithmic difference is less sensitive to outliers. For the low saving rates in the sample, the logarithmic difference approximates the saving ratio (Kulikov et al., 2007).

$$SR_i \approx \ln S_i = \ln YDISP - \ln C_i \quad (1)$$

The specification of the saving model incorporates a variety of theoretical propositions from the consumption literature. Disposable income is expected to affect the saving rate positively. This effect is equivalent to the quadratic income term in a model with the level of saving as endogenous variable, and thus is expected to be small. The model controls for transient shocks to the current work income of household heads, caused by temporary illness, unemployment or strikes. The transient shock is measured as the number of weeks without regular earnings during which households received unemployment benefits. Since all households had compulsory unemployment insurance coverage, weeks with neither income nor benefits probably amounted to holidays. Borrowing from life cycle consumption models, the model controls for the stage of households in their life cycle by controlling for the average age of the household head and his wife. All but one household in the sample were headed by married couples. Life cycle theory predicts that the saving rate should rise for households with middle-aged decision makers and then fall off in old age as savings are consumed to finance retirement. This expected effect is likely diluted in the present sample as the

age of household heads, all of whom were members of the labour force, ranges from the low 20s to the high 50s. The model further controls for the supposedly negative effect of household size on the saving rate. The available information on the age of children is used to make adjustments to the household size to reflect age-specific subsistence needs and economies of scale. Adult equivalence scales are commonly used to capture economies of scales within the household. The choice of the adult equivalence scale has a considerable effect on adjusted household size but is theoretically contentious. I opt for the OECD scale, which gives adults other than the household head a weight of 0.5 and children under 15 years a weight of 0.3. As mentioned above, the income structure of the household is an important factor to consider. The effect of, say, an additional member in a household on the saving rate depends in part on whether the member earns an income. This not only works via the efficiency channel, insofar as resources need not be shared with an ‘unproductive’ household member, but also via the decision-making structure of the household. The employment status of wives is particularly important in this respect. Wives and adolescents with an income are known to be more actively involved in the financial decision-making of a household. Women have been shown to have a more prudent financial decision-makers, setting aside more resources for hard times (Horrell and Oxley, 2000). These factors tend to raise the saving rate. On the other hand, multiple sources of income render a household less vulnerable to unexpected income shocks, thus reducing the precautionary motive for saving.

Ownership of residential property is used as a proxy variable for household wealth in the absence of more detailed data. Most of the literature suggests that wealth has a negative effect on the saving rate as it undermines the precautionary motive for saving. At the end of the survey period, local representatives calculated imputed rents for households living in residential property and classified these as expenditure on rent, presumably to account for maintenance costs. At the same time, the statisticians classified these imputed rents as ‘other income’. Residential property therefore has both a wealth and an income effect, impacting on home-owners’ saving behaviour in opposite ways. The income effect is expected to be captured by the income variable. The

dummy variable for residential property should capture the wealth effect only. Where households did not live in residential property, they either lived in rental flats, the reference category, or in tied accommodation for blue-collar workers (*Werkwohnungen*) or white-collar employees (*Dienstwohnungen*), depending on the head's vocational status. Since these arrangements tended to be temporary, households in tied accommodation are expected to set aside funds to set up proper households. Households' liquidity at the beginning of the year is measured by the ratio of their initial cash stock over the disposable income generated over the year. The initial level of bank deposits is not known, but it is to be expected that having a deposit at the beginning of the observation period is an indication of some financial wealth. Further, having a deposit with a bank afforded households a degree of financial exposure that may have reduced credit constraints.

Lastly, the model controls for households' geographical environment. By matching their places of residence with the county-level data from Falter discussed in section 3.1, and again ignoring migration over time, it is possible to ascertain the confessional environment and the local unemployment history in which households' financial decisions must be embedded. The experience of economic hardship during the Great Depression may have permanently raised precautionary savings. Further, the old, die-hard Weberian thesis of the Protestant work ethic would predict that Protestant communities were more prudent than their Catholic counterparts. Most importantly, it has been found in comparable studies that urban citizens save less than rural residents, though the causal mechanism is unclear. Schmidt-hebbel et al. (1992) argued that this effect may be due to greater consumption opportunities in cities.

The potential endogeneity of disposable income cannot be eliminated. Capital income, and interest on saving deposits in particular, is likely to be determined simultaneously with the saving rate given the annual frequency of the data. Unfortunately, as mentioned above, capital income cannot cleanly be separated from non-capital income. Nor was a suitable instrument for income available. Even if there were endogeneity, this would not bias against the result of the analysis, as it would affect the saving behaviour of Nazis and non-Nazis alike.

Owing to the cross-sectional nature of the data, the model is specified parsimoniously as follows:

$$SR_i = \ln YDISP - \ln C_i = \alpha + \beta NAZI + \sum_{j=1}^k \gamma_j x'_j + \epsilon, \quad (2)$$

where $NAZI$ is a categorical variable taking on 1 for NSDAP members and x' is the vector of control variables discussed above. Since local representatives of the *Statistisches Reichsamt* had to make independent judgements when classifying ambiguous expenditures at the end of the survey period, it is possible that measurement errors are correlated among observations from the same town. The standard errors are therefore clustered at the town-level for greater robustness.

4 Results

The simple descriptive statistics reported in table 6 indicate that the saving rates of members and non-members respectively were not significantly different on any of the possible saving definitions. The choice of saving definition matters not only insofar as saving rates rise considerably as the definition is widened, but also in that the differential is highly sensitive to the definition adopted.

[Table 6 about here.]

Controlling for other factors in the multivariate saving model introduced above does not alter this picture. Estimating the model using OLS yields economically plausible coefficients. The null hypothesis that saving rates did not differ with ideological backgrounds cannot be rejected with any realistic degree of confidence. The corresponding coefficient - like all other coefficients scaled by factor 100 for the sake of better legibility - is not statistically different from zero for any definition of saving. While the saving differential increases as the saving definition is widened from SR_1 to SR_3 , it decreases as expenditure on human capital is added to savings. Since the estimated coefficients for many control variables also change drastically on SR_4 , it appears that expenditures on human capital were determined in a somewhat dissimilar

process than other components of saving. The tenor of the results nevertheless remains the same. Each of the four model specifications was also estimated using contributions to the NSDAP as a continuous variable instead of the binary membership variable, yet the coefficients on this alternative variable were even smaller and less significant across all four measures of the saving rate.

[Table 7 about here.]

Although all control variables have the expected sign, only some of the estimated coefficients are inferentially robust. The income elasticity of the saving rate ranges from 3.45% to 4.67%. For each week a household head spent in unemployment, the household's saving rate dropped by 0.14% to 0.19% in absolute terms. The relative share of the wife's working income, as expected, The elasticity of around 4% implies that a hypothetical switch from a single-male-income to a 50-50 income structure at constant total income would raise a household's saving rate by 2%. This is a very large partial effect. Indeed, the average saving rate (SR_1) of the 17 households in which the wives earned at least half as much as their husbands was 5.71%, almost four times as high as the sample average saving rate, though some of that unconditional differential must be attributed to other partial effects. Household size has the expected negative effect on the saving rate. Owing to the adjustment of the headcount to adult equivalents the interpretation of the logarithmic coefficient is far from straightforward. A doubling of the household size, roughly equivalent to two parents having three children rather than none, reduces the saving rate by 2.2% - 2.6% in relative terms. This negative effect is twice as large for SR_4 . This is an interesting result, seeing as savings on this definition include expenditures on human capital. The interpretation is that families with very few children spent more on education and health than families with many children, not only in per-capita but even in total terms. The effect of the average parental age on the saving rate is roughly -3%. The quadratic age term had to be dropped due to collinearity. As mentioned above, the negative sign on the linear coefficient does not clash with the life-cycle theory of saving, as the sample includes only household heads of working age. The negative effect can possibly be explained by the costs associated with setting up a new household which required

years of disciplined saving on the part of young couples. Liquidity, that is the ratio of the cash stock at the beginning of the period to the disposable income earned over its course, allowed households to save less. The effect appears to be sizable, but the elasticity only reflects very low liquidity ratios, with the 99th percentile of the distribution just scrapping the 4.8% mark. Lastly, as expected, urban households saved less than their rural counterparts. The elasticity of 0.2% is considerable, as it implies that residents of Berlin saved roughly 0.74% less than workers in Hamburg in absolute terms, ignoring non-linearities for the sake of illustration. The effect probably results from a combination of urban lifestyle and the more advanced development of black markets in urban centres, which mitigated the effect of price controls on the supply of consumption goods.

The explanatory power of the model is very good considering that the dependent variables are saving rates rather than absolute saving (or consumption) levels. Importantly, the standard errors of the ideological variable are not inflated by any collinearity with control variables.¹¹ Thanks to the richness of the household-level data, the range of control variables included in the model rules out any omitted variable bias. A Ramsey RESET test of the functional form of the condition mean of the fitted values of the logarithmic saving rate cannot reject the null hypothesis of a correct specification at a p-value below 0.19.¹² Similarly a specification link test indicates no model misspecification.¹³

Further postestimation diagnostics reveal, however, some model misspecifications. The model suffers from a considerable degree of heteroskedasticity with respect to disposable age, household size, and the linear and quadratic age terms. A Breusch-Pagan test rejects the null hypothesis of homoskedasticity at the 99% confidence level.¹⁴ Although the coefficients in the baseline specification, shown again in the first column of table 8 are already reported with heteroskedasticity-robust standard errors, the model is re-estimated for SR_1 using weighted least squares (WLS), with the weights derived by modelling the heteroskedasticity directly. Using the WLS estimator alters some of the coefficients. Most importantly, the coefficient of the NSDAP membership variable increases slightly without, however, becoming any less insignificant statistically.

[Table 8 about here.]

The use of least absolute deviations (LAD), yielding the point estimates at the fiftieth quantile, is an alternative, albeit less convincing, method of dealing with the heteroskedasticity. It has the added benefit, however, of being less sensitive to outliers. An analysis of the residuals shows that 47 households are influential observations in the sense that their d fits values exceed a plausible threshold value defined by

$$2\sqrt{\frac{k+1}{N}}, \quad (3)$$

where k is the degrees of freedom of the model and N is the sample size.¹⁵ On closer inspection, none of these outliers can be dismissed as data anomalies. Estimating the model by LAD substantially alters the coefficients. The coefficient of the Nazi variable turns negative. This stark divergence from the baseline model is unlikely to stem from the lower sensitivity towards outliers, seeing as bootstrapping the baseline model changes the standard errors only slightly.¹⁶ To the extent that the misspecification lies in heteroskedasticity alone, WLS is likely the superior estimator. In any case, the result that NSDAP members did not save more than non-members is highly robust to alternative estimators as well as to a range of saving definitions.

Although the diagnostics run in this analysis did not reveal any omitted variable bias, the model fails to capture perfectly two effects that may interfere with the interpretation of these results. First, it is possible that NSDAP members faced lower credit constraints than families that were not associated with the regime. The model indirectly proxies for liquidity constraints by controlling for liquidity as a form of liquid wealth, but credit constraints remain unobserved. Having a saving deposit with a bank may have facilitated access to credit, yet the coefficient on this binary variable is not statistically significant. Paradoxically, NSDAP members borrowed less than non-members relative to their disposable income, but this does not preclude the possibility that Nazis had easier access to credit as and when needed. Lower credit constraints on the part of Nazis would require a lower saving rate to smooth consumption.

Second, the model does not well account for expectations. The memory of unemployment rates in 1933 is used in the model as a proxy for the degree to which the experience of the Great Depression shaped households' precautionary saving motive. The proxy does not capture the hypothesised effect. Again, the problem is that expectations are likely correlated with ideology. It stands to reason that, *ceteris paribus*, committed Nazis had a more positive outlook on the future. To the extent that prospects seemed brighter to them than to non-Nazis, their precautionary saving motive would have been less urgent. This could have offset a larger ideological motive. To the extent that these offsetting effects have not been disentangled from the ideological channel, the latter is underestimated. That said, the effect of differential expectations and credit constraints on the saving behaviour of households would need to be very strong to render the ideological variable significantly positive.

5 Conclusion

This paper has argued that moral suasion or propaganda cannot satisfactorily explain the rise in the household saving rate. The argument is based on the result that households which signalled a strong commitment to the National Socialist cause by joining the NSDAP did not save more in 1937 than households which did not signal an ideological commitment of the same degree. Given the assumption that Nazis thus identified should have been more responsive to moral suasion, it can be inferred from this result that propaganda had no significant effect on households' saving behaviour. One caveat is that the model estimated in this paper does not fully capture potential heterogeneity in expectations and credit constraints between Nazis and non-Nazis. To the extent that committed Nazis held more confident expectations and faced lower credit constraints, a more muted precautionary saving motive likely offset the positive effect of moral suasion. Further research is needed to disentangle these two effects from the purely ideological one more carefully.

Notes

¹Figures taken from an article in the Swiss *National Zeitung* of 26 July 1939 and may only be indicative.

²Koehler et al. (1937). The pathos is more readily tangible in the German original: ‘Das deutsche Volk wird in alle Zukunft ein sparsames Volk sein, denn es muss sparen, um immer wieder fuer ein nachwachsendes zahlreiches Geschlecht Arbeitsraum, Arbeitsmoeglichkeit, Wohnraum, Kulturbesitz und Wehrfaehigketi zu schaffen.’

³BArch, R2501 / 6548, p. 275

⁴Excerpts from speech cited in *Berliner Tageblatt*, 28 October 1938.

⁵*Berliner Nachtausgabe*, 8 August 1934.

⁶The individual budget files are available from the collection of the *Statistisches Reichsamts*, under the catalog series BArch R3102. A list of the catalog numbers of the selected files is available from the author on request.

⁷The sub-sample covers communes starting with letters A-K.

⁸Estimate based on stratified wage data for 1936 presented in the 1937 volume of *Vierteljahreshefte der Statistik des Deutschen Reichs*.

⁹Also see Kershaw (1988).

¹⁰“Wahl- und Sozialdaten der Gemeinden und Kreise des Deutschen Reiches 1920-1933”, available from GESIS under study number ZA8013.

¹¹A test for (multi-)collinearity produced no VIF-values greater than 1.81, the mean being 1.27. The VIF-value for the binary membership variable is 1.10, which is well below any reasonable minimum threshold.

¹²The RESET test following Ramsey (1969) was implemented using STATA’s ‘estat ovtest’ postestimation command.

¹³While the linear predicted value is a very good predictor of the model, the squared predicted value is not.

¹⁴Test following Breusch and R. (1979) implemented using STATA’s postestimation command.

¹⁵This threshold was suggested by Belsley et al. (2004) and has become the standard in applied econometrics.

¹⁶Bootstrapping with 300 repetitions and seed set at 10,000, using the default algorithm programmed into the bootstrapping command of STATA version 12.

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Table 1: Descriptive statistics

	Mean	Std. Dev	Min	Max
<i>Demographic variables:</i>				
Age, head	36.7	6.7	21	59
Age, wife	34.5	7.0	19	60
Children under 15	2.01	1.43	0	11
Adults over 65	0.01	0.08	0	1
Town size	779,806	1,455,414	175	4,242,501
<i>Income structure:</i>				
Wage income, head	1,927	421	368	4,120
Wage income, wife	84.0	209.2	0	1,503
Wage income, others	66.5	223.5	0	1,599
Other income	280.7	331.7	0	2,360
Direct taxes	37.6	42.0	0	254
Compulsory insurance	185.3	55.5	1	427
Disposable income	2,136	511	1,137	4,160
Observations	593			

Table 2: Descriptive statistics, continued

	Share in %
<i>Vocational status:</i>	
White-collar	3.4
Blue-collar	96.6
<i>Wealth indicators:</i>	
Residential property	12.8
Life insurance	78.2
Saving deposit	88.5
Observations	593

Table 3: Probit model to test the signal of ideological commitment

	(1)	
	probit	
NSDAP member		
Disposable income, ln	1.392***	(0.292)
Adj. household size, ln	-1.478***	(0.318)
White-collar	0.298	(0.307)
Rural resident	0.396*	(0.196)
% Protestants, 1925	-0.257	(0.214)
% Jews, 1925	3.199	(4.991)
Bavaria	0.390*	(0.186)
Berlin	-0.536**	(0.202)
Constant	-10.31***	(2.150)
Observations	593	
Pseudo R^2	0.077	

Standard errors in parentheses

Towns with up to 5,000 residents are defined as rural.

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 4: Marginal effects from probit model

	(1)	
	Marginal effects	
NSDAP member		
Disposable income, ln	0.340***	(0.083)
Adj. household size, ln	-0.423***	(0.090)
White-collar	0.094	(0.106)
Rural resident	0.127	(0.069)
% Protestants, 1925	-0.073	(0.061)
% Jews, 1925	0.915	(1.43)
Bavaria	0.124	(0.064)
Berlin	-0.129***	(0.039)
Observations	593	
Pr(member)	0.207	

Standard errors in parentheses

Towns with up to 5,000 residents are defined as rural.

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 5: Definitions of saving

Variable	Definition
S_1	Cash, deposits, debt service
S_2	Cash, deposits, debt service, life insurance
S_3	Cash, deposits, debt service, life insurance, durables and provisions
S_4	Cash, deposits, debt service, life insurance, durables, provisions, health and education

Table 6: Saving rates by members and non-members (in % of disposable income)

	NSDAP members	Non-members	t-value
SR1	1.41	1.08	-0.74
SR2	3.02	2.29	-1.58
SR3	3.52	2.66	-1.82
SR4	7.41	6.36	-1.34
Observations	593		

Table 7: Regression results using various saving definitions

	SR1	SR2	SR3	SR4
	OLS	OLS	OLS	OLS
NSDAP member	0.135 (0.529)	0.484 (0.548)	0.601 (0.565)	0.347 (0.870)
White-collar	-0.795 (0.539)	-0.544 (0.608)	-0.423 (0.813)	0.117 (0.965)
Disposable income, ln	3.895*** (1.049)	3.449** (1.155)	3.877** (1.301)	4.670** (1.571)
Weeks unemployed	-0.137* (0.0646)	-0.148* (0.0677)	-0.153** (0.0582)	-0.191*** (0.0556)
Income ratio, wife	4.065* (1.637)	3.471* (1.594)	3.712* (1.520)	4.148* (1.883)
Income ratio, others	1.608 (1.303)	0.807 (1.234)	0.133 (1.438)	-1.906 (2.094)
Adj. household size, ln	-2.288** (0.874)	-2.645** (0.955)	-2.341* (0.980)	-4.873** (1.456)
Average age, ln	-3.434** (1.280)	-2.392 (1.448)	-2.921* (1.473)	-0.282 (3.421)
Residential property	-0.968 (0.531)	-1.283* (0.558)	-1.015 (0.612)	-1.946* (0.762)
Tied accommodation	0.675 (0.555)	0.548 (0.550)	0.548 (0.670)	-0.438 (0.833)
Liquidity	-44.89* (19.16)	-37.39 (19.50)	-41.08* (20.45)	-57.93 (29.62)
Saving deposit	-0.130 (0.601)	-0.220 (0.678)	-0.485 (0.792)	0.446 (0.928)
% Protestants, 1925	-0.248 (0.577)	0.254 (0.639)	0.0584 (0.626)	1.635 (1.687)
% Unemployment, 1933	-0.543 (3.543)	-0.118 (3.794)	-1.273 (4.161)	-13.82 (10.91)
Town size, ln	-0.191* (0.0943)	-0.219* (0.0979)	-0.250* (0.0960)	-0.241* (0.113)
Constant	-11.67 (7.921)	-10.25 (8.396)	-10.58 (8.991)	-18.29 (11.60)
Observations	592	592	592	592
Adjusted R^2	0.090	0.071	0.080	0.056
F	6.225	4.502	5.975	7.331
N_clust	148	148	148	148

Standard errors in parentheses

Coefficients and standard errors scaled by 100.

All standard errors are heteroskedasticity-robust and clustered at the town level.

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 8: Robustness of coefficients to alternative estimators

	Baseline SR1	Bootstrap SR1	WLS SR1	LAD SR1
NSDAP member	0.135 (0.529)	0.135 (0.472)	0.185 (0.534)	-0.318 (0.400)
White-collar	-0.795 (0.539)	-0.795 (1.042)	-0.779 (0.553)	0.278 (0.911)
Disposable income, ln	3.895*** (1.049)	3.895*** (1.111)	3.720*** (1.025)	2.832** (0.922)
Weeks unemployed	-0.137* (0.0646)	-0.137* (0.0640)	-0.120* (0.0537)	-0.114** (0.0423)
Income ratio, wife	4.065* (1.637)	4.065** (1.470)	4.855** (1.625)	4.663*** (1.297)
Income ratio, others	1.608 (1.303)	1.608 (1.589)	1.049 (1.439)	1.862 (1.308)
Adj. household size, ln	-2.288** (0.874)	-2.288* (1.139)	-2.124* (0.888)	-2.268* (0.921)
Average age, ln	-3.434** (1.280)	-3.434** (1.302)	-3.587** (1.150)	-2.852** (0.970)
Residential property	-0.968 (0.531)	-0.968 (0.628)	-1.123* (0.533)	-0.683 (0.537)
Tied accommodation	0.675 (0.555)	0.675 (0.608)	0.670 (0.546)	0.861 (0.603)
Liquidity	-44.89* (19.16)	-44.89* (19.41)	-39.90* (19.09)	-42.07** (13.91)
Saving deposit	-0.130 (0.601)	-0.130 (0.579)	0.205 (0.552)	0.0846 (0.518)
% Protestants, 1925	-0.248 (0.577)	-0.248 (0.606)	0.123 (0.569)	-0.123 (0.523)
% Unemployment, 1933	-0.543 (3.543)	-0.543 (3.608)	-1.543 (3.388)	-3.453 (3.104)
Town size, ln	-0.191* (0.0943)	-0.191 (0.110)	-0.166 (0.0891)	-0.108 (0.0941)
Constant	-11.67 (7.921)	-11.67 (8.316)	-10.42 (7.907)	-6.310 (6.850)
Observations	592	592	592	592
Adjusted R^2	0.090	0.090	0.093	
F	6.225		6.179	
N_clust	148		148	

Standard errors in parentheses

Coefficients and standard errors scaled by factor 100.

Bootstrapping with 300 repetitions and seed set at 10,000.

Standard errors under OLS and WLS are clustered at the town level.

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

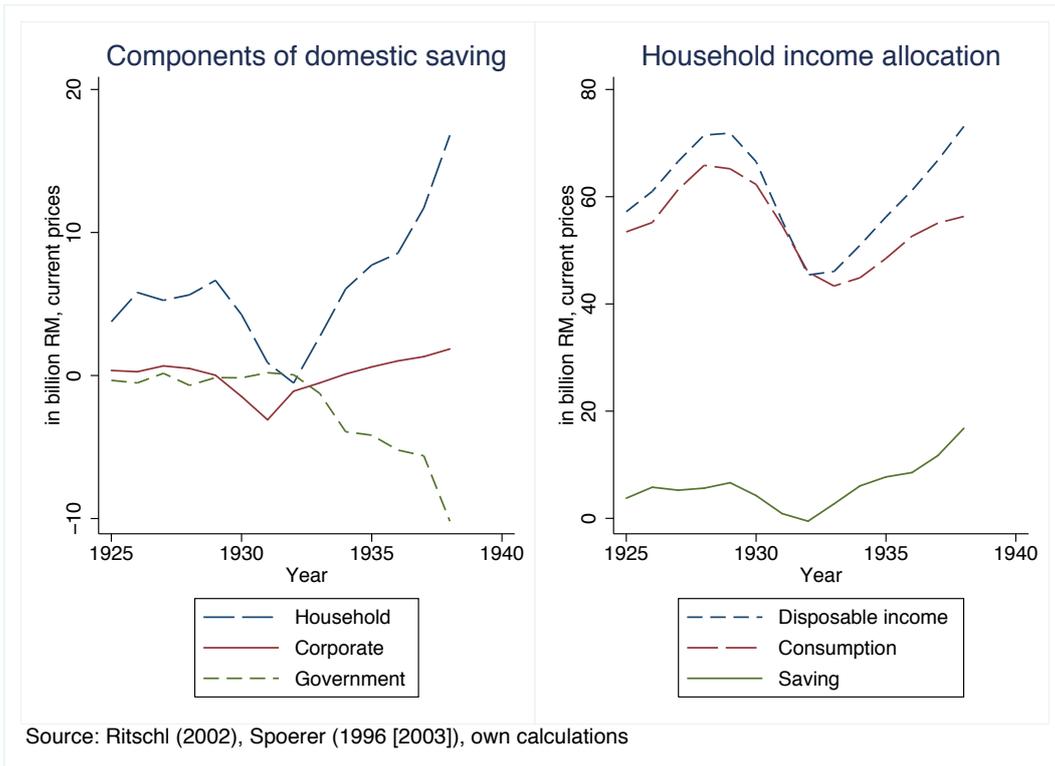


Figure 1: Macroeconomic indicators

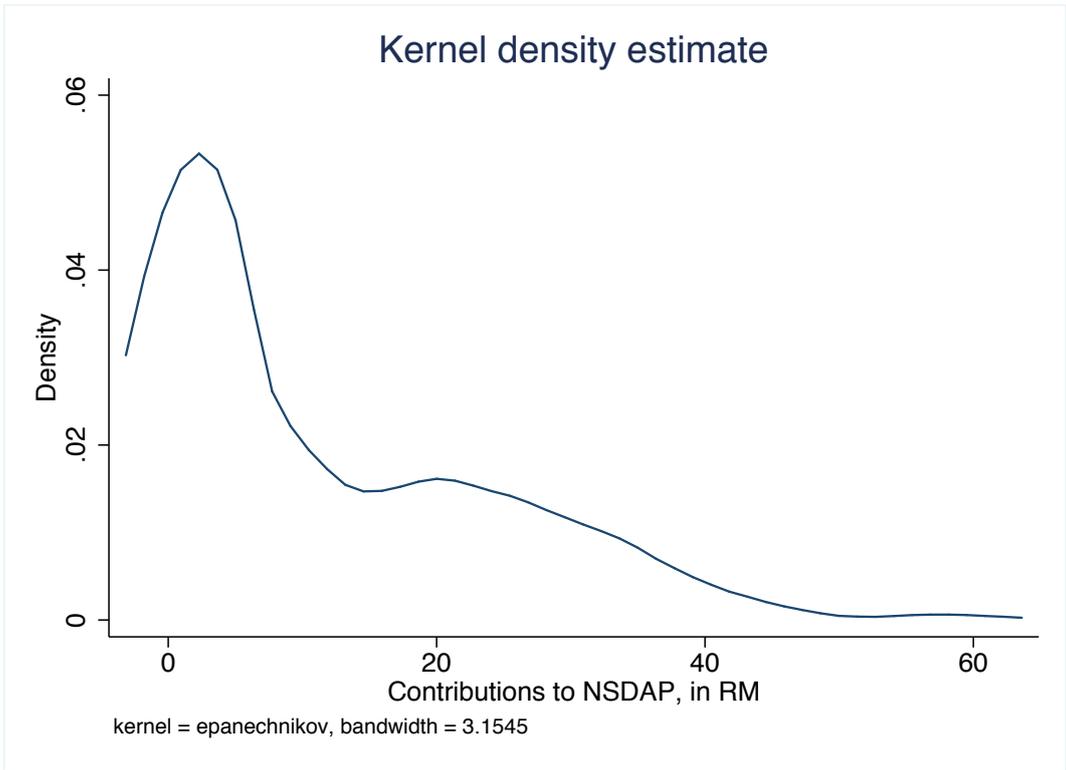


Figure 2: Contributions

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