Political Leaders' Characteristics, Voters' Preferences, and Fiscal Policy

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Florian Neumeier

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Erstgutacher:	Prof. Dr. Bernd Hayo
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Abstracts

[1] Hayo, Bernd and Neumeier, Florian (2014), Political Leaders' Socioeconomic Background and Fiscal Performance in Germany, *European Journal of Political Economy* 34, 184–205.

This paper investigates whether the socioeconomic status of the head of government helps explain fiscal performance. Applying sociological research that attributes differences in people's ways of thinking and acting to their relative standing within society, we test whether the social status of German prime ministers can help explain differences in fiscal performance among the German Laender. Our empirical findings show that the tenures of prime ministers from a poorer socioeconomic background are associated with higher levels of public spending and debt financing. Social mobility has an asymmetric influence: social climbers adapt to their new class, whereas downwardly mobile prime ministers remain primarily influenced by their parents' upper-class status.

[2] Hayo, Bernd and Neumeier, Florian (2012), Leaders' Impact on Public Spending Priorities: The Case of the German Laender, *Kyklos* 65 No. 4, 480–511.

We examine determinants of the composition of public expenditure in the German Laender (states) over the period 1992–2008, as the Laender exhibit a high degree of institutional and political homogeneity and are endowed with extensive fiscal competences. Our prime contribution is an investigation into how political leaders' socioeconomic background influences public spending priorities. Applying sociological theory, we link preferences for the composition of public spending to social status. In contrast to approaches relying on political budget cycles or partisan theory, we find strong and theory-consistent evidence that prime ministers tend to favour fiscal policies supporting the social class in which they are socialised. Governments led by prime ministers from a poor socioeconomic background spend significantly more on social security, education, health, infrastructure, and public safety.

[3] Hayo, Bernd and Neumeier, Florian (2013), Political Leaders' Socioeconomic Background and Public Budget Deficits: Evidence from OECD Countries, *MAGKS Discussion Paper* 08-2013.

This paper empirically analyses the relationship between political leaders' socioeconomic backgrounds and public budget deficits utilising panel data on 21 OECD countries from 1980 to 2008. Building on sociological, as well as economic, research, we argue that the

socioeconomic status of political decision-makers, i.e., presidents or prime ministers, is an important determinant of fiscal budget decisions. Our theory-consistent findings show that the tenures of lower-class leaders—i.e., leaders of low socioeconomic status—are associated with a deficit-to-GDP ratio which is 1.6 percentage points higher than that during tenures of upper-class leaders.

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[4] Neumeier, Florian (2014), Do Businessmen make Good Governors?, *mimeo*, Philipps-University Marburg.

This paper empirically evaluates the economic performance of U.S. state governors with a business background, focusing on their influence on the growth rate of real personal income per capita and the unemployment rate. Methodologically, we apply nearest neighbor matching to account for the endogeneity of political selection. We identify credible counterfactuals for CEO governors, i.e. governors without a business background who took office under similar economic and fiscal situations. We find, first, that business persons tend to take office in times of economic pressure and fiscal strain. Second, tenures of CEO governors are associated with a 0.8 percentage point higher annual income growth rate and a 0.6 percentage point lower unemployment rate than tenures of non-CEO governors. Third, the positive effect of having a CEO governor increases with her time in office. Fourth, politically inexperienced CEO governors perform slightly better than their politically experienced colleagues.

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[5] Hayo, Bernd, Neumeier, Florian, and Uhl, Matthias (2014), Topics in Fiscal Policy: Evidence from a Representative Survey of the German Population, *MAGKS Discussion Paper* 12-2014.

This paper provides background information and basic descriptive statistics for a representative survey of the German population conducted on our behalf by GfK in the first quarter of 2013. The survey addresses important topics in fiscal policy, including: 1) public preferences on the composition of fiscal expenditure; 2) public preferences on public debt; 3) the effect of tax changes on consumption and savings; and 4) the effect of tax changes on labour market activities.

[6] Hayo, Bernd and Neumeier, Florian (2013), Public Attitudes Toward Fiscal Consolidation: Evidence from a Representative German Population Survey, *MAGKS Discussion Paper* 51-2013.

The poor state of public finances in many countries has led to calls for fiscal consolidation. In practice, implementing concrete consolidation measures appears to meet with public resistance, suggesting that the success of consolidation efforts strongly depends on the popularity of the chosen measures. To identify public attitudes toward fiscal consolidation and alternative consolidation measures, we conducted a survey among 2,000 German citizens. Applying ordered and multinominal logit models, we test theory-based hypotheses about the determinants of individual attitudes toward public debt. We find that, inter alia, personal economic situation, time preferences, fiscal illusion, and trust in politicians exert a significant impact on attitudes toward fiscal consolidation and preferences for alternative consolidation measures.

[7] Hayo, Bernd and Neumeier, Florian (2014), The Debt Brake in the Eyes of the German Population, *MAGKS Discussion Paper* 41-2014.

In response to the recent sovereign debt crisis, the member states of the European Union agreed to enact balanced budget rules in their national legislation. However, little is known about the public's opinion of balanced budget rules. To fill this gap, we conducted a survey among 2,000 representatively chosen German citizens. Our findings suggest that 61% of the German population supports the debt brake, whereas only 8% oppose it. However, approval rates differ notably among various subgroups of the population. The debt brake enjoys greater support among high-income earners and among those well-informed about the future costs of deficit spending. People who do not trust politicians would like to see the government's hands tied even more tightly. Opinions about the debt brake also differ markedly across the supporters of different political parties.

[8] Hayo, Bernd and Neumeier, Florian (2014), Public Preferences for Government Spending Priorities: Survey Evidence from Germany, *MAGKS Discussion Paper* 57-2014.

Employing data from a representative survey conducted in Germany, this paper examines public preferences for the size and composition of government expenditure. We focus on public attitudes toward taxes, public debt incurrence, and public spending in six different policy areas. Our findings suggest, first, that the current scope of government is supported by

a majority of the German population. Second, we find that individual preferences for the composition of government spending differ along various dimensions. Specifically, personal economic well-being, economic literacy, confidence in politicians, political ideology, and time preference are significantly related to individual attitudes toward public spending, taxes, and debt. The magnitude of the effects is particularly large for time preference, economic knowledge, and party preference. Third, public preferences for public spending priorities are only marginally affected when considering a public budget constraint.

Political Leaders' Socioeconomic Background and Fiscal Performance in Germany

Abstract

This paper investigates whether the socioeconomic status of the head of government helps explain fiscal performance. Applying sociological research that attributes differences in people's ways of thinking and acting to their relative standing within society, we test whether the social status of German prime ministers can help explain differences in fiscal performance among the German Laender. Our empirical findings show that the tenures of prime ministers from a poorer socioeconomic background are associated with higher levels of public spending and debt financing. Social mobility has an asymmetric influence: social climbers adapt to their new class, whereas downwardly mobile prime ministers remain primarily influenced by their parents' upper-class status.

JEL: E61, E62, H11, H72

Keywords: Leadership, socioeconomic status, fiscal policy, public spending, public deficit.

Published in:

Hayo, Bernd and Neumeier, Florian (2014), Political Leaders' Socioeconomic Background and Fiscal Performance in Germany, *European Journal of Political Economy* 34, 184–205.

Leaders' Impact on Public Spending Priorities: The Case of the German Laender

Abstract

We examine determinants of the composition of public expenditure in the German Laender (states) over the period 1992–2008, as the Laender exhibit a high degree of institutional and political homogeneity and are endowed with extensive fiscal competences. Our prime contribution is an investigation into how political leaders' socioeconomic background influences public spending priorities. Applying sociological theory, we link preferences for the composition of public spending to social status. In contrast to approaches relying on political budget cycles or partisan theory, we find strong and theory-consistent evidence that prime ministers tend to favour fiscal policies supporting the social class in which they are socialised. Governments led by prime ministers from a poor socioeconomic background spend significantly more on social security, education, health, infrastructure, and public safety.

JEL: E62, H75, H76

Keywords: Leadership, socioeconomic status, social rivalry, public expenditure composition.

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Hayo, Bernd and Neumeier, Florian (2012), Leaders' Impact on Public Spending Priorities: The Case of the German Laender, *Kyklos* 65(4), 480–511.

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Bernd Hayo and Florian Neumeier

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Coordination: Bernd Hayo • Philipps-University Marburg
Faculty of Business Administration and Economics • Universitätsstraße 24, D-35032 Marburg
Tel: +49-6421-2823091, Fax: +49-6421-2823088, e-mail: hayo@wiwi.uni-marburg.de

Political Leaders' Socioeconomic Background and Public Budget Deficits: Evidence from OECD Countries*

Bernd Hayo and Florian Neumeier

Philipps-University Marburg

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Corresponding author:

Bernd Hayo
School of Business & Economics
Philipps-University Marburg
D-35032 Marburg
Germany
Phone: +49–6421–2823091
Email: hayo@wiwi.uni-marburg.de

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Political Leaders' Socioeconomic Background and Public Budget Deficits: Evidence from OECD Countries

Abstract

This paper empirically analyses the relationship between political leaders' socioeconomic backgrounds and public budget deficits utilising panel data on 21 OECD countries from 1980 to 2008. Building on sociological, as well as economic, research, we argue that the socioeconomic status of political decision-makers, i.e., presidents or prime ministers, is an important determinant of fiscal budget decisions. Our theory-consistent findings show that the tenures of lower-class leaders—i.e., leaders of low socioeconomic status—are associated with a deficit-to-GDP ratio which is 1.6 percentage points higher than that during tenures of upper-class leaders.

JEL: E62, H11, H62, Z13.

Keywords: Budget deficit, political leaders, socioeconomic status, time preference.

Word count: 7029 (excluding references and appendix)

1. Introduction

Over the last several years, the world, or at least various regions of it, has experienced three crises: a financial crisis, a recession, and a sovereign debt crisis. Some pundits even believe that the current sovereign debt crisis in Europe endangers survival of the euro area and may seriously undermine European integration. Although financial and real crises contributed to the poor state of public finances, it is difficult to argue that these extraordinary events are at the root of the sovereign debt crisis. Arguably, public finances were already stretched to the breaking point and therefore were unable to bail out financial institutions and stabilise the business cycle without significantly raising investors' concern over the possibility of substantial default risk.

Looking back in time, we find that during the past decades, many OECD countries increased public debt even in good economic times. In trying to explain this development, political economists typically focus on political actors' motives and incentives when deciding on fiscal policies. Political budget cycle (PBC) theory (e.g., Rogoff and Sibert, 1988; Alesina et al., 1992), 'public budget as a common pool resource' approaches (e.g., Roubini and Sachs, 1989a, 1989b), as well as models viewing the incurrence of public debt as a strategic instrument used to tie successors' hands (e.g., Persson and Svensson, 1989; Alesina and Tabellini, 1990) have one thing in common: they presume that politicians are primarily driven by opportunistic motives. However, empirical findings based on these premises are often inconclusive and provide only very little evidence in support of them.[1]

In recent years, a new and steadily growing literature in economics has emerged which emphasises the influence of political leaders' identity on government performance. Starting with the work of Jones and Olken (2005), who find that exogenous leader transitions (i.e., leader transitions caused by natural death of the incumbent) induce changes in GDP growth rates, economists have become increasingly concerned with the question of whether the incumbent political leader makes a difference. The subsequent empirical research documents a connection between sociodemographic characteristics of leaders and (i) economic growth (e.g., Besley et al., 2011), (ii) institutional framework (e.g., Dreher et al., 2009; Hayo and Voigt, 2013), (iii) monetary policy (Göhlmann and Vaubel, 2007), and (iv) fiscal policy (e.g., Mikosch, 2009; Hayo and Neumeier, 2011, 2012). Particular attention is paid to the association between leaders' performance and their educational and occupational careers. For

[1] With regard to PBC theory, Shi and Svensson (2006) find robust evidence for pre-electoral increases in fiscal deficits for developing countries, but not for developed countries. Brender and Drazen (2005) provide similar evidence based on a differentiation between new and established democracies: pre-electoral deficit increases are found in the former only. The results reported by Roubini and Sachs (1989a, 1989b) are shown to be not robust by Edin and Ohlsson (1991) and de Haan and Sturm (1997).

example, Besley et al. (2011) provide evidence that countries' economic growth rates are higher when their leaders are more highly educated. Dreher et al. (2009) find that leaders with a background in economics are more likely to engage in reforms that lead to a liberalisation of the economy (measured in terms of changes in the Economic Freedom Index). Mikosch (2009) reports that the tenures of former economists as leaders of OECD countries are characterised by higher deficits than are the tenures of leaders who have been politicians most of their working life. Moreover, political science research suggests that there is a strong personalisation in politics, i.e., a leader's reputation is important for electoral success even in a parliamentary system (cf. McAllister, 2007).

However, most of the approaches listed above suffer from certain drawbacks. First, some of the results are either not robust to variations in the empirical specification or even counterintuitive. This may be at least partly because the hypotheses linking certain educational or occupational backgrounds to economic performances are often more or less ad hoc (for a discussion, see Hayo and Neumeier, 2011). Second, potential concerns of endogeneity are usually not addressed.[2] Leader transitions as well as the length of leaders' incumbencies likely depend on the government's economic performance. If the leader characteristics of interest are somehow related to unobserved factors affecting the likelihood of achieving power or tenure length, the reported estimates could be misleading.

This paper contributes to the literature by providing a broader social-science-based perspective on people's motives and decision behaviour. Following sociological and psychological research, we argue that decisions made by political actors are likely affected by specific aspects of their socioeconomic backgrounds. More precisely, we draw a connection between the political leader's socioeconomic status, his or her time preferences, and the level of deficit spending. We derive the testable hypothesis that low-status heads of governments are more debt tolerant, attach less importance to the future burden which may arise from debt accumulation, and, therefore, are more prone to rely on debt financing. Our theory-consistent findings reveal that the impact of political leaders' status on fiscal discipline is statistically and economically significant. The tenures of leaders who held blue-collar jobs prior to pursuing a political career are associated with an approximately 1.6 percentage point higher contemporary deficit-to-GDP ratio than are the tenures of leaders who held academic positions. A distinctive feature of our empirical analysis is robustness to a variety of control variables and the use of instrumental variable estimation, allowing our estimates to be causally interpreted and avoid biases due to selection effects or omitted variables.

[2] An exception is the study by Besley et al. (2011), who utilise exogenous leader transitions to circumvent endogeneity problems.

The remainder of this paper is organised as follows. In the next section, we introduce the status concept and discuss its impact on behaviour and (time) preferences. In Section 3, the data and our empirical strategy are described. Results are presented in Section 4 along with robustness checks. Section 5 concludes.

2. About Status, Habitus, and (Time) Preferences: Some Lessons from Social Sciences

2.1 Status and its Measurement

According to sociologists, social stratification is a central feature of modern societies, implying that societies must be viewed as hierarchical formations in which individuals and groups can be ranked. Decisive for an individual's rank within this hierarchy is the functional importance of the social position he or she occupies, i.e. the position's particular value to society (Davis and Moore, 1945). *Status* is a reflection of the functional importance of a certain position.

Societies endow those who strive for or hold a social position associated with a higher status with certain resources and attributes regarded as valuable (Bourdieu, 1986; Bourdieu and Wacquant, 1992; Ganzeboom et al., 1992). This is done primarily in order to provide people with incentives to properly fulfil the tasks connected to the positions they hold. Particularly important is the endowment with three types of capital (Bourdieu, 1984, 1986; Bourdieu and Wacquant, 1992): *economic capital*, i.e., income and wealth, *cultural capital*, especially formal and informal education, and *social capital*, i.e., reputation, prestige, and networks. Differences in status lead to an unequal distribution of these types of capital: a higher status translates into higher income, a higher level of education, and a higher reputation. People of similar status constitute a *social class*.

The social position which is commonly regarded as most relevant for an individual's standing and, thus, the crucial determinant of his or her status, is occupation (Treiman, 1977; Ganzeboom et al., 1992). Hence, in sociology, *occupational status* is of particular interest as a determinant of an individual's standing in society. As occupational status is a latent variable, sociologists typically measure it by means of indicators. A well-known and frequently applied indicator is the *International Socio-Economic Index of Occupational Status* (ISEI) introduced by Ganzeboom et al. (1992). This index combines information on the average level of education and average income in different occupations to create a continuous measure of status. Table 1 provides ISEI scores for selected occupations, which range from 0 to 1.

Table 1: ISEI Scores for Selected Occupations

Occupation	**ISEI score**
Upper-class occupations	
Architects, town planners	0.77
Lawyers	0.85
Judges	0.90
Middle-class occupations	
Bank teller	0.47
Bookkeeper	0.56
Middle-rank civil servant	0.59
Lower-class occupations	
Bricklayers	0.32
Carpenters	0.31
Farmers	0.26
Unskilled construction and factory workers	0.24

Note: Original ISEI scores are divided by 100. The categorisation of occupations with regard to the three social classes is done by the authors.

2.2 Status and Time Perspective

Important aspects of individual decision-making, such as attitudes, preferences, and abilities, vary with status. People of similar standing have similar codes of conduct and lifestyles, share certain perceptions and attitudes, and engage in similar activities (e.g. Bourdieu, 1977; Elias, 1994). Sociologists and psychologists attribute this behavioural similarity to the similar life conditions encountered by people within the same social class. In the course of their lifetimes, people acquire a set of dispositions reflecting their cumulative experience as well as the socioeconomic conditions to which they are exposed. These dispositions, commonly referred to as *habitus*, are believed to serve as a matrix of perception, appraisal, and practice which steers cognition and action below the level of consciousness (Bourdieu, 1977, 1984; Crossley, 2001; Pickel, 2005). Since people of similar standing face similar life conditions and meet similar fates, these dispositions happen to be homogenous for members of the same social class, constituting a *class habitus*.

One well-documented difference between people of different social classes concerns time perspective and intertemporal decision-making. There is overwhelming empirical evidence in the sociology literature that status affects a person's orientation toward the future as well as the willingness to delay gratification. People of low status anticipate future consequences of their actual behaviour to a lesser degree, attach less importance to future events, reveal shorter planning horizons, and are less willing to delay rewards (e.g., LeShan, 1952; Schneider and

Lysgaard, 1953; O'Rand and Ellis, 1974; Martineau, 1977; Trommsdorf, 1983).[3] Several explanations have been offered for this relationship between social class and future orientation or reward delay. The social science literature suggests that the association is mediated by *cognitive*, *motivational*, and *affective* components (e.g., Trommsdorf, 1983).

Ainslie (1975, 1992) states that 'living mostly for the present is our normal state of functioning, and that consistent behavior is sometimes acquired, to a greater or lesser extent, as a skill' (Ainslie, 1992: 57). A greater capacity to consider future needs is posited to be strengthened by higher levels of formal and informal education, as abstract thinking is regarded as a prerequisite for future orientation. However, several psychological and social factors related to social class are found to be at least as important as education. People of low status not only experience comparatively poorer socioeconomic conditions, they also face manifold forms of social deprivation (e.g., Agarwal et al., 1983; Bourdieu, 1984), tend to compare themselves unfavourably to others (e.g., Lunt and Livingston, 1991; Walker, 1996), are more exposed to the risk of undesirable life events such as financial distress and social exclusion (e.g., Breen, 1997), encounter more obstacles in reaching a goal, and have a more pessimistic future outlook and uncertain expectations (e.g., Shannon, 1975; Lamm et al., 1976; Trommsdorf, 1983; Loudon and Della Bitta, 1993). All these factors are found to facilitate a greater present orientation, avoidance of future expectation formation, and lower aspirations.

In contrast, economic research on the causes of heterogeneous time perspectives is scarce. Becker and Mulligan (1997) model the determination of discount rates as endogenous, suggesting that both the level of education and the level of income enhance future orientation by shifting people's attention away from their present situation to their future needs, making more highly educated and well-to-do people more patient and less myopic.[4] Empirical evidence is provided by Leigh (1986), Lawrance (1991), and Harrison et al. (2002). Leigh (1986) analyses determinants of future orientation by means of individual answers to several questions which were part of a survey carried out in the United States in 1972. His findings suggest that schooling, wages, and being brought up in a wealthy family, as well as having a highly educated father, facilitate forward-lookingness. Lawrance (1991) estimates individual

[3] Many behavioural patterns considered to be perfect examples of a lack of future orientation are also shown to be connected to status: obesity, the use and abuse of alcohol and tobacco, drug addiction, and so on. For a review, see Bradley and Corwyn (2002).

[4] With regard to education, the authors claim that 'schooling focuses students' attention on the future. Schooling can communicate images of the situations and difficulties of adult life, which are the future of childhood and adolescence. In addition, through repeated practice at problem solving, schooling helps children learn the art of scenario simulation. Thus educated people should be more productive at reducing the remoteness of future pleasures' (Becker and Mulligan, 1997: 735–736). With respect to income, they state that financial distress increases the desire for current income and, citing Irving Fisher, 'blinds a person to the needs of the future' (Becker and Mulligan, 1997: 732).

discount rates utilising data from the US Panel Study of Income Dynamics, whereas Harrison et al. (2002) apply experimental methods to a random sample of Danish households. Both studies find that discount rates are higher the lower the levels of income and education.

2.3 Time Perspective and Fiscal Deficits

There is substantial economic literature arguing that lack of future orientation and reward delay are likely determinants of private debt incurrence and saving behaviour (e.g., Thaler and Shefrin, 1981; Angeletos et al., 2001; Laibson, 1997). People who are less forward-looking are shown to be more debt tolerant, more likely to incur debts, and to cope less well with financial strain (e.g., Lea et al., 1995; Walker, 1996; Webley and Nyhus, 2001). There is far less theoretical and empirical research into how lack of future orientation influences public budget policy. We follow sociologists and assume that (i) social experiences gathered throughout life are inscribed into a person's cognition and thereby steer thinking and acting below the level of consciousness (e.g., Berger and Luckmann, 1966) and that (ii) these experiences are structure induced, i.e., they depend on the individual's rank within the social stratification system. Consequently, we expect that the intertemporal choices made by political decision-makers will reflect the socially constituted dispositions—i.e., the habitus—of the social class in which they were socialised.

Public debt is an important link between past, present, and future (fiscal) policies via the government's intertemporal budget constraint. Ever since Barro's (1979) seminal work, deficit policies are often viewed as a matter of intertemporal optimisation: benevolent governments use public borrowing as a financing device in times of economic hardship in order to minimise the net present value of the excess burden of taxation. However, as emphasised in the public choice literature (e.g., Buchanan and Tullock, 1962), running a public deficit can also serve as a way to enjoy welfare gains from public goods and services and postpone the burden associated with rising tax rates or cuts in government spending for the future. In fact, a lack of future orientation and deficient anticipation of the future costs of public debt frequently are considered to be likely causes of public debt accumulation and one of most important arguments put forward in favour of balanced budget rules (e.g., Alesina and Perotti, 1994; Poterba, 1997). Huber and Runkel (2008) set up a model in which a present-oriented government chooses tax rates designed to minimise the excess burden of taxation.

They show that a myopic government accumulates public debt, irrespective of whether it is naïve or experienced.[5]

Thus, empirical evidence supports the notion of an association between attitudes toward public indebtedness, time preferences, and factors related to a person's status. Based on survey data from Austria, Stix (2013) finds that respondents with low levels of income and formal education as well as high discount factors are much more likely to oppose public debt reduction. Hayo and Neumeier (2013) report similar evidence for Germany. Blinder and Krueger (2004) and Blinder and Holtz-Eakin (1984) analyse survey data from the US and find that people with higher income and education are more concerned about fiscal deficits and more likely to favour a balanced budget amendment, respectively.

3. Data and Empirical Approach

Following our theoretical discussion, we now test empirically whether a government's debt performance is affected by the socioeconomic status of its incumbent leader (i.e., depending on the form of government, the prime minister or president). For practical reasons, we concentrate on the heads of governments, as they are the most individually powerful decision-makers in the executive branch of government and, as shown in the literature discussed above, appear to exert a significant influence on government performance. We test our hypothesis utilising data from 21 OECD countries from 1980−2008. Our research question is addressed in two ways.

First, we apply a two-step approach. In Step 1, we estimate the following dynamic panel model:

$$(7)\ deficit_{i,t} = \alpha_i + \mu_t + \rho\, deficit_{i,t-1} + \beta' economic\ variables_{i,t} + \gamma' political\ variables_{i,t} + \delta' demographic\ variables + \varepsilon'\ leader\ dummies_{i,t} + \zeta_{i,t}$$

The dependent variable is the primary deficit in relation to GDP (in percentage points). α_i is a country-specific intercept, μ_t a time-fixed effect. ζ_{it} is an error term. Since the lagged dependent variable causes the OLS estimator to be biased, we apply GMM estimation (Arellano and Bond, 1991), employing up to five valid lags of the dependent variable (i.e., lags 2–6) as instruments for the deficit in t-1.[6] We account for country-fixed effects by

[5] The difference between a naïve and an experienced actor is that the latter anticipates that his or her 'future self' desires to deviate from the initial choice and, thus, behaves in a time-consistent manner, whereas the former does not.

[6] Simulation studies reveal that a trade-off occurs when choosing the number of instrument lags in dynamic GMM models: a higher number of lags increases both estimation efficiency and the finite sample bias (Judson

applying a within transformation.

We basically follow extant political economy literature when it comes to choice of control variables. As economic variables, we include the interest payments on government bonds (in percentage points of GDP) to account for the policy-invariant part of the budget, the real GDP growth rate and the unemployment rate as business cycle indicators, the log of real per capita GDP, and a variable measuring trade openness (value of imports plus exports in relation to GDP, measured in percentage points).

The political variables include a dummy for left-wing governments to control for partisan effects, a dummy for election years accounting for the potential influence of political budget cycles, and a Maastricht dummy to reflect the impact of the European monetary union, which is a step dummy that takes on the value 1 starting in the year a country committed to the Maastricht criteria. We account for possible constraints on the head of government's power to manipulate the public budget and control for measures of political dispersion. Therefore, we add a dummy indicating whether the political leader's party has a majority in all houses with law-making power, a variable that captures the degree of government fractionalisation, and a veto-player index (variable *checks*).[7]

We also add two variables depicting the demographic situation of a country's population: log population size, since this variable is found to influence the level of public spending in many empirical applications (for an overview, see Shelton, 2007), and the dependency ratio, defined as the share of people aged above 65 or less than 15 to the total working-age population. The share of dependent people tends to influence the level of public spending upward and tax revenues downward.

Finally, we construct dummy variables for each individual political leader and add these to our specification. As a country's reference, we choose the political leader with the fewest observations.

In Step 2, we take the estimated coefficients $\hat{\varepsilon}$ of the leader dummies obtained in Step 1 and employ them as dependent variables in an OLS regression:

$$(8)\ \hat{\varepsilon}_j = \tilde{\alpha} + \tilde{\beta}' leader\ variables_j + \tilde{\zeta}_j$$

The left-hand-side variable $\hat{\varepsilon}_j$ can be interpreted as the average public deficit run by the head of government j during his or her incumbency, conditional on all other regressors employed in Equation (7) (and compared to a country's reference leader). The explanatory variables

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and Owen, 1999). Hence, we restrict the number of instruments to five. Note that with respect to our main variables of interest, we find no significant changes when varying the number of lags over a range of 1 to 10.

[7] These variables are from the Database of Political Institutions (DPI). *Government fractionalisation* measures the probability that two randomly picked deputies of the government are from different parties. The variable *checks* is a discrete variable with higher values indicating a larger number of balances and veto-players.

considered in Step 2 are characteristics describing the respective political leader, i.e., age at the beginning of the first term and total number of years in office, a dummy for female leaders, and the leader's personal status. We also control for a leader's parental status in order to capture potential socialisation effects. Note that we have to compute deviations from a country's reference leader for all explanatory variables. The advantage of this two-step approach is that it allows disentangling the questions of whether (i) leader identity matters at all and (ii) if so, which leader characteristics make a difference. The first question can be addressed by testing the joint significance of all leader dummies employed in Step 1. The answer to the second will be revealed by the results of Step 2.

However, the two-step approach may suffer from inefficient estimation, since noisy estimates obtained in Step 1 are used as endogenous variables in Step 2 and the number of observations in Step 2 is notably lower than in Step 1. Thus, we also use an alternative approach to test our hypothesis: we replace the leader dummies in Equation (7) with the leader characteristics of interest and in this way directly assess the impact of leader characteristics on the current deficit, i.e.:

$$(9)\ deficit_{i,t} = \alpha_i + \mu_t + \rho\, deficit_{i,t-1} + \beta' economic\ variables_{i,t} + \gamma' political\ variables_{i,t} + \delta' demographic\ variables + \varepsilon'\ leader\ variables_{i,t} + \zeta_{i,t}$$

The vector *leader variables* contains characteristics describing the incumbent head of government in state i in period t. We consider the same characteristics as in Equation (8), but *age* now refers to a leader's age at the end of period t and *years in office* to the total number of years in office completed by the end of period t.

Data on the deficit-to-GDP ratio are from the IMF's *Government Finance Statistics*. Unfortunately, there are missing values for some countries for certain periods, so that our panel models are unbalanced. In the Appendix, we report the data coverage for each country (see Table A1), provide the data sources as well as descriptive statistics (see Table A2), and explain how the status variables were constructed.

4. Estimation Results

4.1 Basic Specifications

We commence our empirical analysis with the results of the two-step approach. Estimates of Equation (7) are omitted to save space, but they are available on request. To illustrate the impact of individual leaders, we derive rough proxies for politicians' debt propensity by adding the country-specific average deficit-to-GDP ratios to the leader-dummy coefficients

obtained from Equation (7). Since our empirical model includes country fixed effects, the numbers thus derived can be interpreted as the expected deficit-to-GDP ratio the respective leader would have chosen had his or her country faced average economic, political, and demographic conditions during his or her incumbency.[8] We then ranked all political leaders according to their debt propensity, starting with the most debt-tolerant leader.[9] Table A3 in the Appendix presents the debt-propensity scores (i.e., the hypothetical deficit-to-GDP ratios) for all political leaders in our sample as well as their ranks.

The hypothetical deficit-to-GDP ratio of the median political leader (George W. Bush Jr.) is roughly 2.6. Our results show that only 21 out of 100 political leaders would have run a surplus under average economic, political, and demographic conditions. This suggests that the increase of public debt in many countries is partly due to fiscal policy decisions by political leaders. If we test the joint significance of all leader dummies using a Wald test, we obtain a χ^2 value of 1254, which is significant at all reasonable levels of significance. Thus, leader identity is statistically associated with government budget balance.

The results for Step 2 based on estimating Equation (8) are presented in Table 2. First, we estimate a general model containing all the leader characteristics listed in Section 4. Then, we eliminate insignificant regressors by applying a consistent general-to-specific reduction approach (Hendry, 2000). We thus enhance estimation efficiency and reveal which characteristics have significant explanatory power, taking into account potential multi-collinear relationships between the regressors.

A political leader's age at the beginning of his or her first term and personal status are significant at the 5% level and are the only variables to survive model reduction. The dependent variable represents the average conditional public deficit run by the respective political leader during his or her incumbency (compared to a country's reference leader). Accordingly, the coefficient of personal status can be interpreted to mean that the tenures of political leaders who were engaged in blue-collar occupations before taking up politics (lower-class leaders; average status score 0.3) are associated with a deficit-to-GDP ratio which is on average about 2.3 percentage points (pp) higher than that during the tenures of leaders with an academic background (upper-class leaders; average status score 0.8). In the long run, this effect increases to 4 pp. This finding supports our hypothesis and is not only statistically significant, but highly relevant economically as well. Regarding a leader's age,

[8] Note that caution is required in interpreting these hypothetical deficit-to-GDP ratios. Differences in countries' average deficit-to-GDP ratios can also result from unobserved heterogeneity. As a consequence, variations across leaders in different countries with respect to debt-propensity scores could be partly driven by country-specific effects.

[9] Our sample is comprised of 100 political leaders.

our results suggest that if entry age increases by one year, the expected deficit-to-GDP ratio will increase by 0.07 pp. In comparison to the social status effect, this is quite modest. Roughly 17% of the variation among leaders' debt performance can be explained by personal status and age, which is remarkably high.

Table 2: Estimation Results for Equation (8)

Variables	General Model		Reduced Model	
	Coefficient	Stand. error	Coefficient	Stand. error
Constant	0.014	0.228	0.019	0.201
Parental status	–0.221	1.274		
Personal status	–4.234*	2.008	–4.676*	1.823
Years in office	–0.002	0.062		
Age	0.068*	0.031	0.068*	0.032
Female	–0.680	1.322		
R^2	0.179		0.171	
Observations	100		100	
Parameters	6		3	
Testing-down restriction			F (3, 94) = 0.13	

Notes: Results are based on OLS estimation. White (1980) robust standard errors are reported. * and ** indicate significance at the 5% and 1% level, respectively.

Table 3 shows the estimates of Equation (9), where the leader variables are inserted directly into the dynamic panel model (Arellano and Bond, 1991). Again, we apply a consistent general-to-specific reduction approach so as to arrive at a more efficiently estimated model.

Focusing on the economic variables in the reduced model, we find a counter-cyclical movement of the primary deficit. A 1 pp decrease in the real GDP growth rate triggers an increase in the deficit-to-GDP ratio of 0.25 pp. The unemployment rate also remains in the reduced model, exhibiting a positive sign, but is individually insignificant due to collinearity.

Only one political variable survives model reduction. Election years are associated with a significantly higher deficit-to-GDP ratio than non-election years, providing evidence for the existence of political budget cycles in OECD countries. This finding supports the implication of political budget cycle theory and thus may be interpreted as evidence for the conjecture that political decision-makers are driven by opportunistic motives. Given the short-term nature of fiscal manipulation aimed at enhancing re-election prospects, the effect is quite modest: the deficit-to-GDP ratio rises by roughly 0.5 pp in election years.

A glance at the leader variables shows that only personal status remains in the reduced model, with the expected negative sign. Comparing leaders who held blue-collar jobs (lower-class leaders) to those with an academic background (upper-class leaders), the findings from Table

3 suggest that the former have a 1 pp higher deficit-to-GDP ratio. In the long-run, this effect grows to over 7.5 pp, which is economically substantial. In contrast, a leader's age exerts no statistically significant influence, contradicting the finding from Equation (8).

Table 3: Estimation Results for Equation (9)

Variables	General Model		Reduced Model	
	Coefficient	Stand. error	Coefficient	Stand. error
Deficit/GDP (-1)	0.819**	0.052	0.871**	0.033
Economic variables				
Real GDP growth	–0.242**	0.040	–0.252**	0.042
Unemployment rate	0.016	0.047	0.021	0.034
Interest/GDP	0.035	0.127		
Log(GDP per capita)	–2.042	1.520		
Trade openness	0.008	0.011		
Political variables				
Leftist government	0.047	0.197		
Election year	0.411**	0.106	0.524**	0.138
Gov. fractionalisation	0.218	0.674		
Checks	0.004	0.060		
Allhouse	–0.212	0.399		
Maastricht	0.367	0.431		
Demographic variables				
Dependency ratio	–0.008	0.022		
Log(Population)	6.009*	2.411	3.952*	1.975
Leader variables				
Parental status	–0.083	0.448		
Personal status	–2.336**	0.908	–1.991**	0.752
Years in office	0.028	0.031		
Age	–0.022	0.016		
Female	0.137	0.564		
Leader transition	0.302	0.214		
R^2	0.645		0.645	
Observations	503		512	
Parameters	69		55	
Testing-down restriction			$\chi^2(14) = 10.9$	

Notes: Results are based on GMM estimation. Lags 2–6 of the dependent variable are used as instruments. The models include cross-section and time fixed effects. Panel-robust standard errors are reported. * and ** indicate significance at the 5% and 1% level, respectively.

In summary, the estimation results of our two alternative specifications suggest that the higher the incumbent leader's personal status, the less the government's reliance on debt financing. This finding supports our hypothesis that leaders of low status are more impatient or debt

tolerant and thus run higher government deficits. The effect is not only statistically significant, but also economically relevant. However, the point estimates vary considerably across the specifications. The average difference between lower-class leaders and their upper-class counterparts with respect to the deficit-to-GDP ratio is 1.0 pp or 2.3 pp, depending on the estimation strategy. The long-run effects are 4 and 7.5 pp, respectively. Other leader characteristics do not reveal a robust impact on the primary deficit.

4.2 Robustness Checks

We conduct several robustness tests, the detailed results of which are available on request. First, we test whether our results are robust to the estimation method. Instead of using a GMM approach, we now rely on the least squares dummy variable (LSDV) estimator, which may not suffer as much from poor finite sample properties if the number of cross-sections is small (Kiviet, 1995). Consistent with results reported by Judson and Owen (1999), we find that most coefficients increase when relying on the LSDV estimator. The coefficient of personal status, for example, grows to roughly –2.7 but remains significant at the 1% level.[10]

Second, we test whether our results are affected by specific individual political leaders or countries. We systematically exclude each individual leader and country, respectively, from our analysis. Our results remain unchanged.

Third, we allowed for clustered standard errors at the leader level in the context of LSDV models. The impact of political leaders' status on the public budget deficit remains significant at the 1% level.

Fourth, we investigate whether our results are driven by non-randomly missing data. As discussed earlier, we have to estimate unbalanced panel models since data on the deficit-to-GDP ratio are missing for some countries in certain years. Excluding data on the Greek, Japanese, and New Zealand deficit, which are missing for roughly one-third of the sample period, reveals that our prior findings do not change notably.

Fifth, we examine how political constraints affect a leader's power to influence the public deficit. We would expect leader effects to be more pronounced when there are few political constraints, as such a situation makes it is easier for the incumbent to pursue his or her preferred policies. Investigating this issue, we estimate separate coefficients for country/year-

[10] We also compute the bias-corrected LSDV (LSDVc) estimator suggested by Bruno (2005) to ensure the robustness of our results. The application of the LSDVc estimator requires the choice of a consistent estimator in a first-stage regression in order to obtain a bias approximation. We initialise the estimator using the Arellano-Bond (1991) GMM-approach and base the bias correction on a bias approximation up to order O(1/T). As suggested by Kiviet and Bun (2001), the variance-covariance matrix is estimated using a parametric bootstrap procedure employing 200 repetitions. Our core result remains remarkably robust: the estimated coefficient of personal status is –2.4 and its p-value is 0.02.

observations in which there were only few veto players compared to times in which the number of veto players was large. For this purpose, we construct two dummy variables indicating whether the number of political checks is high or low, respectively.[11] We then let these dummies interact with the leader characteristics. Results for this modification support our intuition: leader effects seem to be more pronounced when veto players are less important. The coefficient of personal status is –2.7 if checks are low, compared to –1.9 if checks are high.

Finally, we perform the same exercise for country/year-observations reflecting low or high government fractionalisation based on the median of the fractionalisation index. We obtain a coefficient for personal status of –3.6 in the case of low government fractionalisation and –1.1 in case of high government fractionalisation. Thus, we conclude that the influence the head of government can exert on the public budget depends on the degree of political dispersion. This further supports our conjecture that individual leaders' policy decisions are important for budgetary outcomes.

4.3 Addressing Endogeneity Concerns

Leader transitions are not random, and the chance of winning high political office is likely affected by the aspirant's characteristics, too (cf. Jones and Olken, 2005). If there are certain unobserved factors which are related to the likelihood of taking or staying in office and affect the country's debt performance, then the findings from our basic specifications may be biased.[12] In this section, we address such endogeneity concerns in two ways.

First, we combine the two estimation approaches applied in Section 4.1 by including both the leader dummies and the leader characteristics in a nested model. This specification allows assessing the impact of leader characteristics on the deficit while controlling for any unobserved leader-specific characteristics which may be correlated with the status. In Table 4, to save space, we report only the estimates of the leader variables.

Focusing on the leader variables, we find that our previous conclusions remain qualitatively unchanged. The point estimate of personal status is slightly smaller than in Table 2, but nearly twice the estimate set out in Table 3. This suggests that omitting leader-specific effects results in underestimation of the association between leader status and deficit spending.

[11] 'High' and 'low' refers to values above and below the median, respectively.

[12] Another concern is that those who carry people into office (e.g., political officials or swing voters) may select a leader of high status if they prefer a lower level of deficit financing and a leader of low status if they prefer higher deficits. Note, however, that such a scenario would imply that these people are aware of the relationship between status and debt performance, which would further support our hypothesis.

Second, we apply an instrumental variable (IV) estimation approach to circumvent any bias caused by endogenous leader selection and transition. To this point, all our findings suggest that personal status matters, but parental status does not. However, we observe a notable correlation between political leaders' parental and personal status, indicating that status inheritance appears to play a role. Future heads of governments who grow up under poor socioeconomic conditions are more likely to exhibit impatience or debt tolerance because they are more likely to remain in the lower class. Social stratification research suggests that parental status is generally a good predictor of personal status (cf. Breen and Jonsson, 2005, for a literature overview). Parents' income, education, and occupation appear to have a great influence on their children's careers and thus their personal status. Taking these considerations into account, leaders' parental status appears to be a good instrument for personal status.

Table 4: Combining Specifications (7) and (9)

Variables	Coefficient	Stand. error
Parental status	0.565	1.372
Personal status	–3.716**	1.006
Years in office	0.143	0.160
Age	–0.084	0.110
Female	0.583	0.515
Leader transition	0.395	0.264
R^2	0.757	
Observations	503	
Parameters	171	

Notes: Results are based on GMM estimation. Lags 2–6 of the dependent variable are used as instruments. Coefficients of the lagged dependent variable, economic variables, demographic variables, political variables, and leader dummies are omitted. The model includes cross-section and time fixed effects. Panel-robust standard errors are reported. * and ** indicate significance at the 5% and 1% level, respectively.

Using parental status as an instrument for personal status helps assess the causal impact of political leader status on deficit financing. We start from Equation (9), in which the leader characteristics are directly inserted into the dynamic panel model, but now use parental status as an instrument for personal status. We integrate the instrumental variable approach in our dynamic panel GMM estimation by adding GMM-type instruments for personal status. An

auxiliary regression of personal status on parental status reveals that parental status is a strong instrument for personal status (Staiger and Stock, 1997).[13]

Table 5: Instrumenting Personal Status by Parental Status

Variables	General Model		Reduced Model	
	Coefficient	Stand. error	Coefficient	Stand. error
Deficit/GDP (-1)	0.815**	0.055	0.859**	0.030
Economic variables				
Real GDP growth	–0.245**	0.043	–0.258**	0.044
Unemployment rate	0.010	0.051	0.034	0.034
Interest/GDP	0.072	0.144		
Log(GDP per capita)	–2.081	1.650		
Trade openness	0.005	0.011		
Political variables				
Leftist government	0.143	0.202		
Election year	0.406**	0.104	0.519**	0.137
Gov. fractionalisation	0.391	0.686		
Checks	–0.005	0.059		
Allhouse	–0.310	0.446		
Maastricht	0.388	0.474		
Demographic variables				
Dependency ratio	0.011	0.020		
Log(Population)	7.040**	2.627	4.704*	2.128
Leader variables				
Personal status	–4.328**	1.458	–3.308**	0.901
Years in office	0.037	0.031		
Age	–0.028	0.016		
Female	0.211	0.468		
Leader transition	0.266	0.214		
R^2	0.642		0.644	
Observations	503		512	
Parameters	68		55	
Testing–down restriction			χ^2 (13) = 10.2	

Notes: Results are based on GMM estimation. Lags 2–6 of the dependent variable are used as instruments for its first lag, and parental status as an instrument for personal status. The models include cross-section and time fixed effects. Panel-robust standard errors are reported. * and ** indicate significance at the 5% and 1% level, respectively.

Table 5 shows that the negative relation between political leaders' personal status and governments' deficit-to-GDP ratio remains statistically and economically significant. The

[13] Staiger and Stock (1997) propose that an instrument can be considered sufficiently strong if the F-statistic of a regression of the instrumented variable (here, personal status) on the instrument (here, parental status) is larger than 10. In our case, the F-statistic is 11.5.

coefficient of personal status derived from this IV estimation is similar to the point estimate set out in Table 4, which indicates that the findings from Table 3 based on Equation (9) are biased toward zero. Using the more efficiently estimated coefficients from the reduced model, in the short term, the tenures of lower-class leaders are associated with a deficit-to-GDP ratio which is 1.6 pp lower than that of upper-class leaders. In the long run, this effect increases to almost 12 pp.

Altogether, it appears that the connection between political leaders' personal status and public deficit is not due to leader selection or transition effects. Neglecting such endogeneity concerns may even lead to an underestimation of leader impacts on debt performance. Thus, the IV estimation result supports our interpretation of a causal effect running from personal status to fiscal policy behaviour.

5. Conclusion

Political economists typically assume that politicians behave purely opportunistically, in a narrow sense, when deciding on fiscal policies. However, several implications derived from this conjecture—such as political budget cycle theory or approaches viewing the public budget as a common pool resource—find only little empirical support.

The approach applied in this paper is different. Combining insights provided by sociology with economic research on intertemporal decision-making, we draw a connection between political leaders' socioeconomic backgrounds, their time preferences or future orientation, respectively, and the public budget balance. We hypothesise that political leaders with low socioeconomic status may be more prone to rely on deficit financing.

We test our hypothesis empirically using data on fiscal deficits from OECD countries over the period 1980 to 2008. As fiscal policy decision-makers, we choose the leading politicians of these countries, that is, either prime ministers or presidents. The results of our panel analysis are theory consistent and suggest that the tenures of lower-class leaders are associated with a deficit-to-GDP ratio which is roughly 1.6 percentage points higher than that of upper-class leaders. Since our estimations take place in a dynamic model, we can compute the impact in a long-run equilibrium: over time, this effect increases to almost 12 percentage points. Thus, the impact of personal status on fiscal deficits is not only statistically significant but also economically substantial and econometrically robust. Moreover, we find that in political systems characterised by stronger constraints on policy-makers in the form of checks and balances or government fractionalisation, the impact of personal status on fiscal deficit declines. However, it continues to be statistically significant and economically relevant.

We interpret our findings as a causal relationship, as we start from a clearly formulated theory to the empirically testable hypothesis. This interpretation is further supported by estimates based on instrumenting the personal status variable, which could be endogenous, by parental status, which, almost by definition, cannot be linked to current fiscal deficits and is, therefore, uncorrelated with the error term. If anything, instrumenting personal background increases its impact on fiscal deficits.

Our findings contribute to a growing branch in the economics literature showing that political leaders can have a significant influence on their countries' economic performances. Given that our results are much stronger than those derived by applying common economic models of behaviour suggests that economics may benefit from integrating social science research. For example, in the area of behavioural economics, where economists have already started incorporating psychological research, the result has been that we now have a much better understanding of economic behaviour. Given the size of the field, there is as yet very little economic research utilising insights from sociology, and this primarily involves literature on happiness (for a survey, see Frey and Stutzer, 2002) or the 'identity economics' approach put forward by Akerlof and Kranton (2000). The results presented in this paper suggest that integrating sociological research into an analysis of economic problems has the potential to improve our explanations of important real-world phenomena.

Appendix

Data Availability, Description, Descriptive Statistics, and Sources

Table A1: Availability of Data on the Primary Deficit in Relation to GDP.

Country	*Years with missing data*
Australia	—
Austria	—
Belgium	—
Canada	1980–1989
Denmark	—
Finland	—
France	1998
Germany	—
Greece	1991–2000
Ireland	1998
Italy	1981–1985, 1990–1994
Luxembourg	1998
Japan	1994–2004
Netherlands	—
New Zealand	1989–2001
Norway	—
Portugal	1991–1998
Spain	1998
Sweden	—
UK	—
USA	—

Data source: IMF Government Finance Statistics (online edition).

Table A2: Descriptive Statistics.

Variable	# Obs.	Mean	Std. Dev.	Min.	Max.
Deficit/GDP	523	1.76	4.52	–20.00	22.88
Real GDP growth	588	2.69	2.13	–5.98	11.49
Unemployment rate	588	7.33	3.76	1.02	24.12
Interest/GDP	542	3.49	2.33	0.10	11.87
Log(GDP per capita)	588	10.20	0.30	9.27	11.41
Trade openness	588	65.87	49.20	11.75	324.31
Leftist government	588	0.41	0.50	0.00	1.00
Election year	588	0.28	0.45	0.00	1.00
Gov. fractionalisation	588	0.27	0.26	0.00	0.83
Checks	587	4.37	1.42	2.00	16.00
Allhouse	582	0.21	0.40	0.00	1.00
Maastricht	588	0.20	0.40	0.00	1.00
Dependency ratio	588	50.29	3.97	43.08	69.51
Log(Population)	588	16.55	1.46	12.81	19.53
Parental status	588	0.57	0.21	0.17	0.90
Personal status	588	0.73	0.12	0.29	0.85
Years in office	588	4.29	3.16	0.00	16.00
Age	588	56.58	8.10	38.00	86.00
Female	588	0.11	0.31	0.00	1.00
Leader transition	588	0.20	0.40	0.00	1.00

Economic Variables

Data on the primary deficit and interest payments are from the IMF's Government Finance Statistics (online edition). Data on real GDP growth, unemployment rate, and interest payments are from the IMF's World Economic Outlook Database. Real per capita GDP (in purchasing power parities) and trade openness are taken from the Penn World Tables.

Political Variables

Data on most political variables are from the Database of Political Institutions (DPI; cf. Beck et al., 2001).

The variable *Leftist government* is based on the DPI variable *EXECRLC*. Leftist government takes the value 1 if *EXECRLC* is equal to 3 (i.e., the party of the prime minister or president is leftist), and 0 otherwise.

The variable *Election year* corresponds to the DPI variable *LEGELEC* (i.e., dummy for years in which legislative elections took place) if a country's political system is a parliamentary one. In presidential systems, it corresponds to the DPI variable *EXELEC* (i.e., years in which executive elections took place).

Government fractionalisation corresponds to the DPI variable *GOVFRAC* and equals the probability that two deputies picked at random from among the government parties will be of different parties.

Checks corresponds to the DPI variable *CHECKS*. It accounts for the competitiveness of legislative and executive elections as well as for the number of veto players within a government (the higher the value of *CHECKS*, the greater the dispersion of political power).

The variable *Allhouse* corresponds to the DPI variable ALLHOUSE. It takes the value 1 if the party of the executive controls all houses that have law-making powers.

Demographic Variables

All demographic variables are taken from the World Bank's World Development Indicators.

Leader Variables

Information on political leaders' age, years in office, and year of entering office are identified using the Archigos dataset of political leaders (cf. Goemans et al., 2009).

Information on political leaders' occupational histories as well as the occupational histories of their parents comes mainly from the online edition of the Encyclopaedia Britannica and the Munzinger Online biography. Both provide brief biographies of public figures, especially politicians. In a few cases, we also rely on information provided on personal homepages of (former) political leaders or other online sources.

The variable *Parental status* measures the occupational status score of political leaders' parents. To construct this variable, we coded the occupations of political leaders' parents according to the ISCO–68 and then applied the ISEI scores. When both parents were working or when a parent engaged in than one occupation during his or her career, we decided to employ the highest ISEI score. In cases where a political leader was raised entirely by one parent only (due to divorce or death of the other parent), we decided to take only the status

score of that parent into account. Moreover, we do not differentiate between biological and stepparents.

For the variable *Personal status*, we focus on the positions political leaders held before embarking on a political career, which we defined as first membership in a party executive committee or ministry. In cases where political leaders engaged in more than one occupation during their career, we chose the occupation with the highest ISEI score.

Table A3: Hypothetical Deficit-to-GDP Ratios for Political Leaders (a lower Rank indicates lower Deficits)

Leader	Legislation period	Debt–propensity	National Rank	Global Rank	Leader	Legislation period	Debt–propensity	National Rank	Global Rank
	Australia					**Denmark (cont.)**			
Keating	1991–96	0.4	1	76	Rasmussen A.F.	2001–09	–2.6	3	91
Hawke	1983–91	–0.5	2	81	Schlüter	1982–93	–4.2	4	95
Howard	1996–07	–0.9	3	85					
Fraser	1975–83	–2.2	4	87		**France**			
					Mitterand	1981–95	4.0	1	25
	Austria				Chirac	1995–07	3.8	2	27
Sinowatz	1983–86	5.2	1	11	Sarkozy	2007–12	3.4	3	34
Klima	1997–00	4.3	2	22	d'Estaing	1974–81	2.7	4	49
Vranitzky	1986–97	4.3	3	23					
Kreisky	1970–83	3.6	4	28		**Finland**			
Schüssel	2000–07	3.4	5	33	Sorsa	1982–87	1.9	1	58
Gusenbauer	2007–08	3.0	6	44	Holkeri	1987–91	1.1	2	69
					Aho	1991–95	0.8	3	75
	Belgium				Koivisto	1979–82	0.2	4	79
Martens	1979–92	6.0	1	4	Lipponen	1995–03	–2.1	5	86
Verhofstadt	1999–08	5.0	2	15	Vanhanen	2003–10	–2.2	6	88
Dehaene	1992–99	4.4	3	21					
						Germany			
	Canada				Schröder	1998–05	2.8	1	47
Chretién	1993–03	1.8	1	60	Kohl	1982–98	2.2	2	56
Martin	2003–06	1.6	2	62	Schmidt	1974–82	1.8	3	59
Mulroney	1984–93	1.0	3	71	Merkel	2005–today	1.2	4	67
	Denmark					**Greece**			
Jørgensen	1975–82	–0.2	1	80	Zolotas	1989–90	8.6	1	3
Rasmussen P.N.	1993–01	–0.8	2	84	Papandreou A.	1981–89, 1993–96	5.7	2	7

Table A3 (continued)

Leader	Legislation period	Debt-propensity	National Rank	Global Rank	Leader	Legislation period	Debt–propensity	National Rank	Global Rank
	Greece (cont.)					**Japan (cont.)**			
Rallis	1980–81	4.6	3	19	Abe	2006–07	5.5	2	9
Karamanlis K.	2004–09	2.4	4	54	Takeshita	1987–89	5.3	3	10
Simitis	1996–04	1.6	5	63	Suzuki	1980–82	5.0	4	14
					Fukuda Y.	2007–08	3.9	5	26
	Ireland				Kaifu	1989–90	3.2	6	40
Ahern	1997–08	10.0	1	1	Koizumi	2001–06	3.1	7	43
Bruton	1994–97	5.9	2	5					
FitzGerald	1981–87	3.0	3	46		**Netherlands**			
Reynolds	1992–94	2.2	4	57	Kok	1994–02	4.7	1	18
Haughey	1987–92	1.5	5	64	Lubbers	1982–94	3.3	2	39
					Balkenende	2002–10	3.2	3	41
	Italy				van Agt	1977–82	2.8	4	48
Craxi	1983–87	9.0	1	2					
De Mita	1988–89	4.7	2	17		**New Zealand**			
Goria	1987–88	3.5	3	31	Muldoon	1975–84	4.6	1	20
Berlusconi	1994–95, 2001–06	3.4	4	35	Lange	1984–89	3.6	2	29
D'Alema	1998–00	3.3	5	38	Clark	1999–08	0.8	3	74
Prodi	1996–98, 2006–08	3.1	6	42					
						Norway			
	Luxembourg				Brundtland	1986–89, 1990–96	–2.2	1	89
Juncker	1995–today	–2.4	1	90	Jagland	1996–97	–4.1	2	94
Santer	1984–95	–3.3	2	92	Syse	1989–90	–4.5	3	96
Werner	1979–84	–4.0	3	93	Willoch	1981–86	–5.5	4	97
					Nordli	1976–81	–6.8	5	98
	Japan				Bondevik	1997–00, 01–05	–6.9	6	99
Nakasone	1982–87	5.6	1	8	Stoltenberg	2000–01,05–today	–10.5	7	100

Table A3 (continued)

Leader	Legislation period	Debt–propensity	National Rank	Global Rank	Leader	Legislation period	Debt–propensity	National Rank	Global Rank
	Portugal					**Sweden (cont.)**			
Lopes	2004–05	5.1	1	13	Palme	1982–86	3.0	2	45
Guterres	1995–02	4.9	2	16	Fälldin	1979–82	1.7	3	61
Sócrates	2005–11	3.6	3	30	Persson	1996–06	1.0	4	70
Soares	1983–85	3.4	4	37	Carlsson	1986–91, 1994–96	0.3	5	78
Barroso	2002–04	2.4	5	53	Reinfeldt	2006–today	–0.6	6	82
Silva	1985–95	1.5	6	65					
Balsemão	1981–83	0.9	7	72		**UK**			
					Blair	1997–07	2.6	1	51
	Spain				Major	1990–97	2.4	2	55
Rodríguez Zap.	2004–11	5.9	1	6	Thatcher	1979–90	–0.6	3	83
Aznar	1996–04	5.2	2	12					
Calvo–Sotelo	1981–82	3.5	3	32		**USA**			
González	1982–96	3.4	4	36	Bush Jr.	2001–09	2.6	1	50
Suárez	1976–81	2.5	5	52	Clinton	1993–01	1.3	2	66
					Reagan	1981–89	1.2	3	68
	Sweden				Bush Sr.	1989–93	0.9	4	73
Bildt	1991–94	4.3	1	24					

Notes: The *debt-propensity score* is the hypothetical deficit-to-GDP ratio a leader would have been expected to run if his or her country was facing average economic, political, and demographic conditions during his or her incumbency. The *global rank* refers to a leader's debt propensity compared to all other political leaders, i.e., 1 means the leader is the most debt-tolerant leader in our sample, 100 that the leader is the most debt-averse one. The *national rank* refers to a leader's debt propensity compared to the other leaders in his or her country.

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Do Businessmen make Good Governors?

Florian Neumeier

Philipps-University Marburg

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Corresponding author:

Florian Neumeier
School of Business and Economics
Philipps-University Marburg
D-35032 Marburg
Germany
Tel.: +49 – 6421 – 2823090
Email: florian.neumeier@wiwi.uni-marburg.de

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Do Businessmen make Good Governors?

Abstract

This paper empirically evaluates the economic performance of U.S. state governors with a business background, focusing on their influence on the growth rate of real personal income per capita and the unemployment rate. Methodologically, we apply nearest neighbor matching to account for the endogeneity of political selection. We identify credible counterfactuals for CEO governors, i.e. governors without a business background who took office under similar economic and fiscal situations. We find, first, that business persons tend to take office in times of economic pressure and fiscal strain. Second, tenures of CEO governors are associated with a 0.8 percentage point higher annual income growth rate and a 0.6 percentage point lower unemployment rate than tenures of non-CEO governors. Third, the positive effect of having a CEO governor increases with her time in office. Fourth, politically inexperienced CEO governors perform slightly better than their politically experienced colleagues.

Keywords: U.S. Governors, U.S. politics, U.S. states, economic growth, unemployment, businessmen, CEO, nearest neighbor matching.

JEL: C21, E24, E60, O47

1. Introduction

The typical high-ranking U.S. politician holds a law degree, turned to politics at a rather young age, and successively climbed the political career ladder. Ten out of the past 20 U.S. presidents, 55 out of 100 current U.S. senators, and 21 out of 50 current state governors are law graduates with extensive public sector experience and almost no private sector practice (as of mid-2014).[1] From time to time, though, business persons who made a fortune in the private sector enter the political stage and become elected to high political offices. Mitt Romney, cofounder of the private equity firm Bain Capital and former governor of Massachusetts, Jon Corzine, former CEO of Goldman Sachs and later U.S. senator as well as governor of New Jersey, and current Florida governor Rick Scott, formerly CEO of Columbia/HCA, the largest private health care company in the U.S.A., are only a few examples.

The opinions about business persons in politics are divided, though. In the aftermath of the recent global financial and economic crisis, the idea to leave politics in the hands of economics and business experts in order to boost the economy has gained popularity. The 'technocrats' Mario Monti, who became prime minister of Italy in 2011, and Lucas Papademos, who was elected prime minister in Greece in the same year, may serve as prominent examples. With regard to the U.S., the public dispute seemed to have reached a climax in 2012 after the Republican National Convention's nomination of Mitt Romney as candidate for the presidency. In their political campaigns, business person candidates refer heavily to their business background and private sector success arguing that the skills and experiences they acquired will make them successful in politics as well. However, their critics argue that these candidates neglect exactly that promise by referring to the examples of former businessmen and U.S. Presidents Warren G. Harding, Herbert Hoover, and George W. Bush who are believed to have steered the U.S. economy into crises. To date, though, the performance of business persons in U.S. politics has not been studied empirically.

This paper aims at filling this gap by investigating the impact U.S. state governors with a business background–to which we refer to as CEO governors–exert on a state's economic performance. In particular, we focus on the influence CEO governors exert on a state's growth rate of real personal income per capita as well as on the unemployment rate. For this purpose, we collected a dataset containing information on the occupational backgrounds of

[1] According to Besley and Reynal-Querol (2011), this appears to be a global rather than a U.S. phenomenon, as between 1848 and 2004, roughly 30% of all democratic leaders were law graduates.

the governors of 48 states between 1960 and 2010. Our analysis covers 446 U.S. state governors of which 50 were business persons before taking up politics.

With respect to the empirical approach, the biggest challenge is related to the political selection process. Governors are selected in several stages, as they first compete against fellow party members in primaries and then against one or more opponents from different parties in the gubernatorial election. It seems rather unlikely that the chances of taking office are unrelated to a candidate's characteristics. For instance, both the pool of candidates as well as voters' choice between particular candidates with certain characteristics and experiences may depend on a state's economic situation. In econometric terms, the election of a candidate of a certain 'type' is likely endogenous.

To solve the identification problem we rely on a nearest neighbor matching approach, which is frequently applied to study the outcome after some sort of intervention or treatment when units are not randomly assigned to the treatment group.[2] The intuition behind nearest neighbor matching is to mimic randomization with respect to selection into treatment by constructing a control group which is as similar as possible, regarding all relevant characteristics, to the units exposed to treatment. These nearest neighbors represent credible counterfactuals for the treated units. In our analysis we consider the tenure of a CEO governor as a treatment; accordingly, state-year observations in which a CEO governor holds office represent the treatment group. In order to disentangle the treatment effect from the selection effect, we match CEO governors with non-CEO governors with similar characteristics and who took office under comparable conditions.[3]

Our paper contributes to two strands in the economic literature. First, we contribute to a growing branch of empirical economic studies which examine the influence that heads of governments exert on a country's economic and political performance. Following the work by Jones and Olken (2005), who investigate the association between exogenous leader transitions–i.e. leader transitions due to natural death of the incumbent–and countries' GDP growth rates, economists have detected relationships between various characteristics depicting the incumbent political leader and their policy stance. Besley et al. (2011), for instance, find that tenures of more educated leaders are associated with higher GDP growth rates, using the

[2] Some empirical economic studies applying matching estimators are briefly described in Caliendo and Kopeinig (2008).

[3] Matching approaches are applied in similar contexts by Neuenkirch and Tillmann (2013) as well as Malmendier and Tate (2009). Neuenkirch and Tillmann (2013) study the influence of central bankers receiving top grades by the international financial press on a country's output and inflation. Malmendier and Tate (2009) analyze the impact award winning CEOs have on firm performance.

same identification strategy as put forward by Jones and Olken (2005).[4] Other studies document relationships between leaders' educational and occupational backgrounds on the one hand and fiscal policies (e.g., Hayo and Neumeier, 2014, 2013, 2012) as well as countries' constitutional and institutional frameworks (Hayo and Voigt, 2013; Dreher et al., 2009) on the other hand.[5] However, these approaches typically neglect the possibility that the selection of a leader of a particular 'type' may be related to a country's economic and political situation.[6] Our analysis differs from the aforementioned studies mainly in that we take the endogeneity of leader selection seriously. Unlike most of the works listed, we explicitly account for the fact that characteristics depicting a political leader are related to (economic) conditions current before the leader took office.

Second, by accounting for the endogeneity of electoral choices and by relating the 'type' of governor to a state's economic and fiscal situation, we contribute to the literature on political selection. This literature strand comprises both theoretical (e.g., Besley and Coate, 1997; Caselli and Morelli, 2004) and empirical analyses (e.g., La Porta et al., 1999; Besley and Reynal-Querol, 2011) that study how institutional and political features affect the quality of elected politicians. In this regard, our paper relates to recent work by Gehlbach et al. (2010) and Li et al. (2006) who examine the influence of political as well as market-supporting institutions like, for instance, government transparency, media freedom, and market regulation on participation of businessmen in Russian and Chinese politics, respectively. However, as our objects of analyses–i.e. the U.S. states–are characterized by strong and homogenous institutional frameworks and credible legal systems, we focus primarily on economic and fiscal variables to explore under which conditions voters may prefer business person candidates over career politicians.

Our main findings are as follows. First, descriptive statistics suggest that business person candidates take office especially during times of economic pressure and fiscal strain. More precisely, CEO governors tend to become elected when income growth rates are particularly low, unemployment is high, and the level of public debt as well as the state's reliance on deficit spending is large. Second, we find that CEO governors exert a statistically significant and economically relevant impact on a state's economy. Incumbencies of CEO governors are

[4] However, whereas the *timing* of leader transitions caused by the incumbent's natural death are exogenous without much doubt, the *characteristics* of a deceased leader's successor may not be, casting doubt on the validity of this identification strategy in this particular context.

[5] Another literature strand investigates the association between characteristics of central bankers and their monetary policy stance. See, for instance, Neuenkirch and Neumeier (2013) and Göhlmann and Vaubel (2007).

[6] An exception is the study by Hayo and Neumeier (2013), who examine the influence of political leaders' social status on public deficits in a sample of OECD countries using the social status of leaders' parents as an instrument.

associated with a 0.8 percentage point (pp) higher annual growth rate of personal income per capita and a 0.6 pp lower unemployment rate. Third, our results indicate that the positive influence of CEO governors increases over their tenure. Forth, we find that political novices, i.e. CEO governors who have never held a political office before, perform slightly better than politically experienced CEO governors. Tenures of novices are associated with an annual income growth rate which is roughly 0.4 pp larger as compared to tenures of politically experienced CEO governors and about 1.1 pp larger as compared to governors without a business background. Our results remain robust when excluding the best performing governors from our sample and when several modifications to our empirical approach are applied.

The remainder of this paper is organized as follows. Section 2 describes to what extent business person candidates differ from career politicians and why CEO governors can be expected to make any difference at all. For this purpose we discuss some anecdotal evidence and show some stylized facts. In Section 3, we introduce our data, explain and motivate our empirical approach, present the results of our empirical analysis, and test the robustness of our empirical findings. Section 4 concludes.

2. *Can* businessmen make good governors? Some considerations and stylized facts

There is growing economic literature on political selection which studies how political structures and institutional features, for instance, affect the quality of elected politicians. This strand of literature is committed to the idea that the quality of politicians is key to a country's economic success. As Besley (2005: 44) put it: "Almost every major episode of economic change […] has been associated with key personalities coming to power with a commitment to these changes."

Empirical findings appear to support this conjecture. The empirical economic literature has only recently started to analyse the influence of policy-makers on a country's economic performance, providing strong evidence that the identity of a political leader matters. In a large sample of countries, Jones and Olken (2005) find that exogenous leader transitions, i.e. transitions due to the natural death of the incumbent, are associated with significant changes in GDP growth rates. The literature that followed focused on particular characteristics of political leaders as potential correlates of their quality or policy stance, respectively. For instance, Besley et al. (2011) find that a leader's educational attainment is significantly related to GDP growth, i.e. the more educated a leader is, the stronger a country's economic growth.

Can business persons be expected to make a difference when elected as governors? One argument in favour of this notion is that previous private sector success indicates a governor's quality, which would imply that success in the private sector carries over to politics.[7] The skills and experiences gathered in the business world, their connections to the business community as well as their expertise in managing businesses and practical economic knowledge may enable CEO governors to improve the efficiency of economic policies and to create an environment that attracts new businesses and jobs and in which the state's economy can prosper. Moreover, business persons, by reputation and experience, may be able to commit to economic reforms more credibly than any 'career politician' is able to. In fact, their expertise appears to be an omnipresent theme in the political campaigns of business person candidates; they often try to create a Midas-like image, asserting that they can turn anything they touch into success.

> Being a successful CEO, where I've driven a bottom line, assembled teams, driven results, that's a critical benefit to running the state government. A CEO's job is leadership, problem solving, and team building. I've done that my whole career.
>
> *Bruce Rauner, elected Governor of Illinois in 2014*

> Our economy is in shambles and there is no doubt we are heading in the wrong direction. The economic problems in this state started long before the economic meltdown hitting the rest of this country due, in large part, to the lack of leadership and vision of the professional politicians in Lansing.
>
> *Rick Snyder, Governor of Michigan since 2011*

> I want to get Arizona back on top again in the next few years. I maintain that the skills that it takes to do that, to be a good chief executive officer, are found in the private sector, not in the ranks of the professional politicians.
>
> *J. Fife Symington III, Governor of Arizona from 1991 until 1997*

Arguably, business person candidates do not only differ from career politicians with respect to their professional background, but also with regard to their policy objectives and their degree of political independence. As the quotes indicate, business persons also refer to their extensive private sector expertise in order to dissociate themselves from the political elite. Likewise, when running for political offices, candidates with a business background tend to rely on party networks to a much lesser extent than career politicians and often even lack support from political parties throughout the primaries. Rick Scott, who was elected Governor of Florida in 2010, for example, only narrowly won the Republican primaries against Bill

[7] Mattozzi and Merlo (2008), for example, set up a dynamic equilibrium model to evaluate the career paths of politicians, presuming that market ability and political skills are positively correlated.

McCollum, former member of the U.S. House of Representatives for the Republican party and Attorney General of Florida, despite the fact that the Florida Republican elite "rallied to repel"[8] Scott's bid. Rick Snyder, Governor of Michigan since 2010, is believed to have won the Republican primaries only because he had Democrats and Independents voting for him. The reasons could be related to the incentives party leaders may have. The literature on political selection assumes that the party elite is primarily concerned about maximizing its own power and, thus, prefers obedient candidates with a strong ideological leaning (Galasso and Nannicini, 2011; Besley, 2005).[9] On the contrary, as they are 'socialized' in the business world, business persons may be committed to economic imperatives rather than ideologies. In fact, candidates with a business background typically campaign intensively on economic issues and appear to pay only little attention to topics with ideological connotations. Spurring the economy, creating jobs, and improving public sector efficiency are often the main themes of their political campaigns.

In addition, business person candidates often make use of their private fortunes and, to a large extent, self-finance their political campaigns. For instance, Meg Whitman, Republican gubernatorial candidate for California in 2010, spent $140 million of her private funds on her political campaign with total funds amounting to $177 million. Rick Scott spent about $60 million of his own funds in Florida in 2010 (total: $67 million); Jon Corzine $38 million in New Jersey in 2006 (total: $45 million); Dick DeVos $35 million in Michigan in 2006 (total: $42 million).[10] In consideration of the role of campaign contributions as a potential vehicle for special interest groups to wield political influence, one could be tempted to conclude that the election of a CEO governor minimizes the danger of state politics being in the hands of lobbyists and rent-seekers. Both economists and political scientists view campaign funds as a form of investment for which the investor expects a favour in exchange (e.g., Coate, 2004; Snyder, 1990; Welch, 1974). Given the detrimental economic impact rent-seeking activities and special interest group oriented policies are believed to have (e.g., Becker, 1983; Murphy et al., 1993), the excessive reliance on self-financing may be a strong credential.

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[8] The quote is taken from an online article published by the Orlando Sentinal. See http://articles.orlandosentinel.com/2010-08-25/news/os-gop-gubernatorial-primary-results-20100824_1_rick-scott-high-unfavorable-ratings-primary-fight (accessed on 11/13/2014).

[9] Besley (2005: 56) notes that "[i]n many party structures, candidate selection is structured to maximize the power of party elites, with candidate selection being a highly secretive procedure where personal connections could play a large role. This process could allow bad candidates, intent on using political office for private ends, to use their influence".

[10] Detailed figures on campaign contributions for gubernatorial candidates are provided by the National Institute on Money in State Politics. See http://www.followthemoney.org/ (accessed on 11/13/2014).

However, as it concerns both the quality and independence of CEO governors, there may be opposing views as well. When business persons try to wield political influence from a backseat, e.g. via campaign contributions and party donations, they are thought to primarily have their own welfare or the benefit of their business in mind (e.g., Snyder, 1990; Welch, 1974). Accordingly, taking a high political office may be just another way for an opportunistic business person to extract political rents and to ensure a favourable policy stance, which could or could not be for the benefit of the whole business community and a state's economy. Also, CEO governors likely maintain connections to former fellows in the business community, fostering the establishment of informal ties between politics and the business world. Hence, when having a governor with a business background, the independence of politics from the influence of special interest groups may be rather more at risk than guarded. However, the considerations by Gehlbach et al. (2010) and Fisman et al. (2012) cast doubt on this view. Gehlbach et al. (2010) argue that in mature democracies, the incentives for business persons to run for public office in order to extract rents are small due to the high levels of government transparency and accountability. Fisman et al. (2012) estimate the market valuation of personal ties to former U.S. Vice-President Richard Cheney, who served as CEO of the oil service company Halliburton before becoming Vice-President, to be zero, concluding that institutions are effective in impeding rent-seeking activities in U.S. politics.

Moreover, business person candidates' lack of political experience may be disadvantageous, as the 'art' of policy-making differs from the 'art' of running a business. Companies are hierarchical organizations in which CEOs can issue directives and expect them to be carried out by subordinates. The power of a governor, however, faces many constraints. Governors need to form majorities and cope with diverging interests and different ideological leanings. Thus, even if a CEO governor may have favourable qualities, it is not sure that she can overcome political obstacles and impose her preferred policies. As Jon Corzine, former CEO of Goldman Sachs and Governor of New Jersey from 2006 to 2010 put it: "The idea that you're accountable to a bottom line and to a payroll in managing a business–it gives voters the confidence that you have the right skills. But it's 20,000 people versus 9 million. I don't think candidates get the scale and scope of what governing is. […] There's no exact translation".

Interestingly, recent experience suggests that candidates with a business background find it easier to be elected to political offices during times of economic pressure. Mitt Romney, Governor of Massachusetts between 2003 and 2007, Philip Bredesen, Governor of Tennessee

between 2003 and 2011, Jack Markell, Governor of Delaware since 2009, and Rick Snyder, Governor of Michigan since 2011, are only a few examples of business persons who took the Governor's office at the peak of a fiscal or economic crisis. Arguably, during times of fiscal strain and economic hardship, frustration about career politicians may be high and the distinguished skills and experiences business persons have may appeal to voters.

Figures 1 and 2 provide descriptive statistical evidence that CEO governors indeed make a difference. The figures show average growth rates of real personal income per capita (Figure 1) and the unemployment rate (Figure 2), respectively, during incumbencies of CEO governors, their predecessors, and successors, as well as during tenures of all non-CEO governors. Moreover, the figures contain overall national income growth and unemployment rates over the same period in which CEO governors, their predecessors, and successors held office, which allows us to compare their performance with the national average.

Figure 1: Average annual growth rates of real personal income per capita in U.S. states during incumbencies of CEO governors, their predecessors, and successors (1960–2010).

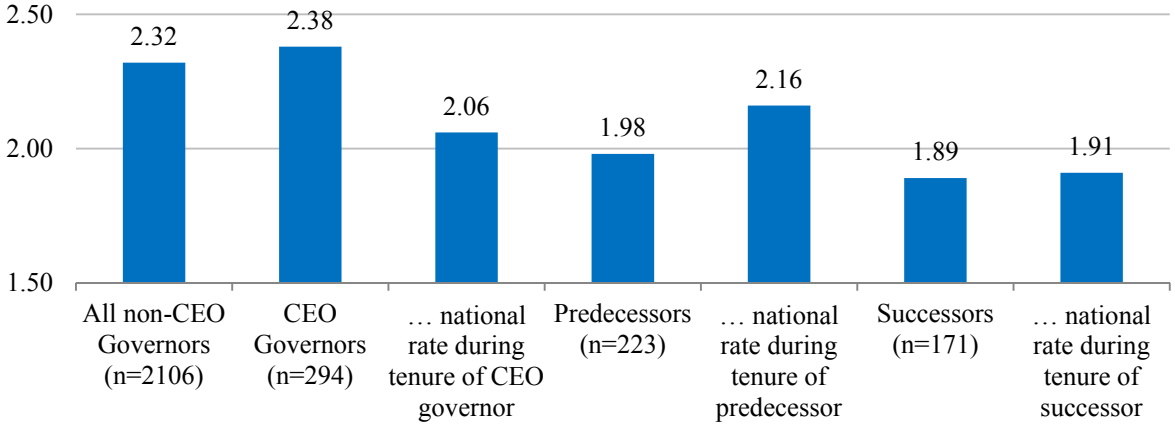
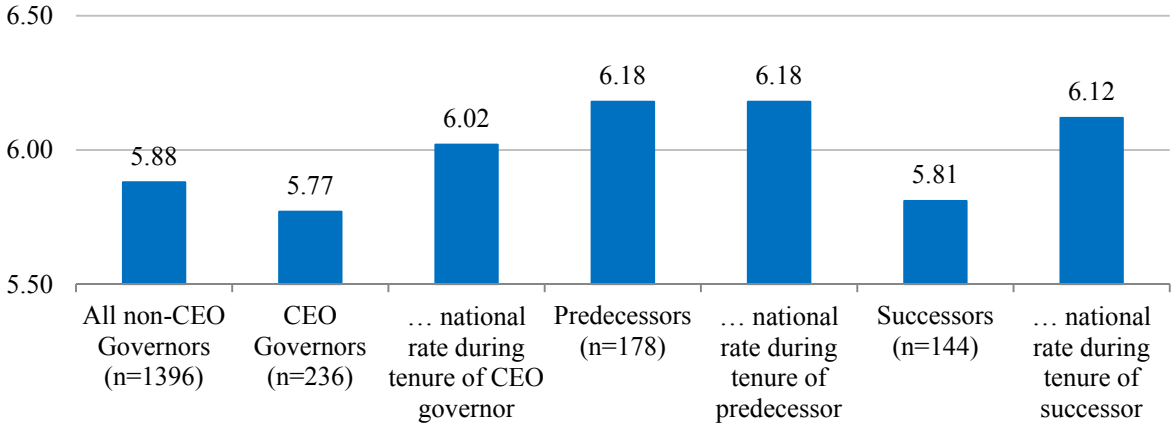


Figure 2: Average unemployment rates in U.S. states during incumbencies of CEO governors, their predecessors, and successors (1977–2010).



The figures reveal some interesting stylized facts. First, on average, there are only negligible differences between the tenures of CEO governors and those of all non-CEO governors with regard to income growth and unemployment. Second, the growth rate of real personal income per capita is somewhat larger in states in which a CEO governor holds office, whereas the unemployment rate is notably lower, as compared to the national figures over the same period. The difference is 0.32 pp with respect to the growth rate and 0.25 pp with regard to the unemployment rate. Third, CEO governors perform remarkably better than their predecessors, as the income growth rate is 0.4 pp larger and the unemployment rate 0.41 pp lower during tenures of business persons. Also, incumbencies of CEO governors' predecessors are associated with lower income growth rates as compared to the national growth rate (difference: 0.18 pp). These findings are in line with the notion that business persons may have better chances of being elected during times of economic pressure.

3. *Do* businessmen make good governors?

3.1. Data and empirical approach

The aim of this paper is to study whether CEO governors exert a positive impact on a state's economic performance. The performance measures considered in this paper are a state's (i) annual growth rate of real personal income per capita and (ii) its unemployment rate (both in percentage points). The problem is that the election of a CEO governor is, in econometric terms, most likely endogenous. As anecdotal evidence and stylized facts presented in Section 2 suggest, the likelihood that a business person becomes governor may be related to a state's economic and fiscal situation.

Our analysis is based on the idea that the incumbency of a CEO governor can be considered as a treatment. The units of analysis are state-year observations; state-year observations with CEO governors represent the treatment group, while observations without CEO governors represent a potential control group. The measure of interest is the so-called average treatment effect on the treated (ATT), which is defined as follows:

$$(1)\ \tau_{ATT} = E[Y(1)|T = 1] - E[Y(0)|T = 1]$$

where $Y(\cdot)$ is the outcome variable, i.e. the growth rate of real personal income per capita or the unemployment rate, and T is a variable indicating whether a unit is exposed to treatment ($T = 1$) or not ($T = 0$). Accordingly, $E[Y(1)|T = 1]$ is the expected outcome after treatment and $E[Y(0)|T = 1]$ the counterfactual outcome, i.e. the outcome a unit exposed to treatment would have achieved if it had not received treatment. As the counterfactual outcome is not observable, ones needs a proper substitute for it to identify the ATT. If the treatment is

randomly assigned, the average outcome of units not exposed to treatment represents a suitable substitute. However, as discussed before, electing a CEO governor and, thus, selection into treatment could be endogenous.

To solve the identification problem, we rely on a nearest neighbor matching approach. The idea of nearest neighbor matching is to mimic randomization with regard to the assignment of the treatment and control group. The missing counterfactual outcome is imputed by matching the treated units with untreated units which are as similar as possible with regard to relevant characteristics. All *pre-treatment* characteristics which (i) are associated with selection into treatment and (ii) influence the outcome of interest are relevant. The realisations of the outcome variables of these nearest neighbors are then used as an empirical proxy for the counterfactual.

Formally, the estimate of the ATT based on nearest neighbor matching is defined as follows:

$$(2)\ \hat{\tau}_{ATT}(x) = E[Y(1)|T = 1, X = x] - E[Y(0)|T = 0, X = x]$$

where x is a vector of relevant pre-treatment characteristics, $E[Y(1)|T = 1, X = x]$ the expected outcome for the units that received treatment, and $E[Y(0)|T = 0, X = x]$ the expected outcome for the treated units' nearest neighbors. The nearest neighbors are determined using a distance measure which is a weighted function of the covariates contained in the vector x. The distance between any two units i and j is calculated as follows:

$$\|x_i - x_j\| = [(x_i - x_j)' S^{-1}(x_i - x_j)]^{1/2}$$

where S is a scaling matrix used to standardize the realisations of the covariates.

Applied to the topic of the paper at hand, the intuition behind nearest neighbor matching is to compare the performance of CEO governors to that of non-CEO governors who took office under similar conditions. The average difference in performance between CEO governors and the 'nearest' non-CEO governors must then be due to treatment, i.e. the incumbency of a business person as governor. In this sense, the empirical approach mimics a randomized experiment by balancing the treatment and the control group according to observable characteristics. Another advantage of the nearest neighbor matching approach is that it is non-parametric in that no empirical model for either the outcome or selection into treatment needs to be specified. Thus, potential types of misspecification like those, for instance, regarding the empirical model's functional form which likely leads to biased estimates, are ruled out. The price of this flexibility is that, if more than one continuous covariate is used for matching, the estimate of the ATT is $\sqrt{n}$-consistent only if a bias adjustment is applied (Abadie and Imbens,

2006, 2011). We apply nearest neighbor matching with replacement meaning that an untreated unit can be used multiple times as a match, which improves the quality of the matching (Caliendo and Kopeinig, 2008).

In our analysis we consider the following pre-treatment characteristics.[11] As *economic variables*, we include real per capita personal income (in US-$) as well as the share of personal income from different sources to account for a state's economic structure, i.e. (i) personal income from farming, (ii) personal income from mining (coal, gas, oil, and other natural resources) to control for states' abundances of natural resources, and (iii) personal income from government transfers to assess the population's dependence on the government. Further, we include the average growth rate of personal income per capita during the tenure of the incumbent's predecessor when estimating the ATT for personal income growth and the average unemployment rate during the predecessor's incumbency when estimating the ATT for unemployment, respectively. Further, we employ several *fiscal variables*, namely state government spending on education and capital outlays, as these spending categories are typically considered as particularly productive and growth promoting, as well as the level of public debt, public borrowing, and tax revenues. All fiscal variables are standardized by dividing them by the state level of personal income (in $1,000). We also control for state population. All economic and fiscal variables as well as population figures refer to the year before a governor took office which typically corresponds to the election year, at least when a governor took office by regular means, and remain constant throughout the incumbency of a particular governor.[12] Thus, our covariates depict the information set voters had when gubernatorial elections were held and on which their electoral choice might be based.

Moreover, we add several variables depicting the incumbent governor. We include a dummy which takes the value 1 for democratic governors (0 otherwise) and control for the governor's age and years in office. These variables increase the likelihood that a CEO governor is matched with a non-CEO governor from the same party, of similar age, and who has already spent a similar amount of time in office. Also, we employ a dummy variable which takes the value 1 if the incumbent governor is politically experienced (0 otherwise), which we define as having held any political office at the local, state, or federal level before her incumbency. Finally, we add year dummies to control for nationwide time-specific effects

[11] Data sources are described in the Appendix.

[12] Note that state fiscal years differ from calendar years, i.e. the fiscal year t lasts until the end of the first quarter of calendar year t in the state New York, until the end of the third quarter of calendar year t in Alabama, Michigan, and Texas, and until the end of the second quarter of calendar year t in all other states covered in our analysis.

such as economic shocks which hit the whole country or changes in federal laws that affect all states at the same time.[13]

Our main variable of interest is the treatment variable which is a dummy variable taking the value 1 if the incumbent governor was a business person before taking up politics and 0 otherwise.[14] As a business person, we define all those governors who ran a private corporation before turning to politics, that is, founders and owners of private businesses (entrepreneurs) as well as governors who were employed as presidents or chief executive officers. We believe that this definition is the least arbitrary one, as only those to which the label undoubtedly applies are labelled as business persons. A full list of governors classified as business persons is provided in Table A1 of the Appendix. We exclude from our definition working proprietors in retail trade, the catering and hotel industry, as well as self-employed physicians, pharmacists, lawyers, farmers, etc., as we believe that these professions do not correspond to the common sense of a business person. Examples for governors who fall into the latter category and, due to that, are not labelled as business persons are William O'Neill, former governor of Tennessee (1980-1991), who ran a tavern, Don Samuelson, former governor of Idaho (1967-1971), who owned a sporting goods store, and Jimmy Carter, former U.S. President and governor of Georgia (1971-1975), who ran a peanut farm.

Our analysis covers the governors of 48 states, i.e. from all states except for Alaska, Hawaii, and the District of Columbia. The sample period is 1960 to 2009 when estimating the ATT for the growth rate of real personal income per capita and 1977 to 2009 for the estimation of the ATT with regard to the unemployment rate.[15] However, for some states, data on personal income from mining is missing for certain years because this information is classified as confidential by the federal government which is why our panel is slightly unbalanced.

Table 1 shows the average realisations of the pre-treatment and governor characteristics across tenures of CEO governors (T=1) and non-CEO governors (T=0). The figures reveal that CEO governors tend to take office under very different conditions than non-CEO governors.

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[13] Technically, the inclusion of year dummies makes it more likely that CEO governors are matched with non-CEO governors who hold office in the same year.

[14] In our analysis, we can take into account only one governor per state-year. In most instances, this is unproblematic, since new governors typically enter office at the beginning of a year and leave office at the end of a year. In few cases, though, governor transitions occur mid-year, involving coding problems. In such instances, we decided to include the governor who held office when the budget was passed. Dates when state budgets were passed are provided by Carl Klarner from Indian State University (http://www.indstate.edu/polisci/klarnerpolitics.htm).

[15] The difference concerning the sample period across both specifications is due to the fact that data on state level unemployment rates are available only from 1977 onwards.

Table 1: Average realisations of pre-treatment and governor characteristics across tenures of CEO governors (T=1) and non-CEO governors (T=0).

Variable	Obs.	Mean | T=1	Mean | T=0	Diff.	
Avg. growth predecessor	2,352	2.00	2.52	−0.51	**
Avg. unemployment predec.	1,460	6.52	6.12	0.40	**
Real personal income p.c.	2,352	25,036	23,355	1,681	**
Population size	2,352	4,613,939	4,830,025	−216,086	
Income farming	2,352	1.65	2.62	−0.97	**
Income transfers	2,352	12.29	10.68	1.61	**
Income mining	2,223	1.46	1.45	0.01	
Capital outlays	2,352	13.45	15.09	−1.63	**
Education spending	2,352	44.11	40.74	3.36	**
Public borrowing	2,352	11.22	9.74	1.48	*
Public debt	2,352	69.43	62.31	7.12	*
Taxes	2,352	60.93	60.58	0.34	
Years in office	2,352	6.81	6.99	−0.18	
Age	2,352	55.63	52.23	3.41	**
Previous political offices	2,352	0.64	0.95	−0.31	**
Democrats	2,352	0.40	0.57	−0.17	**

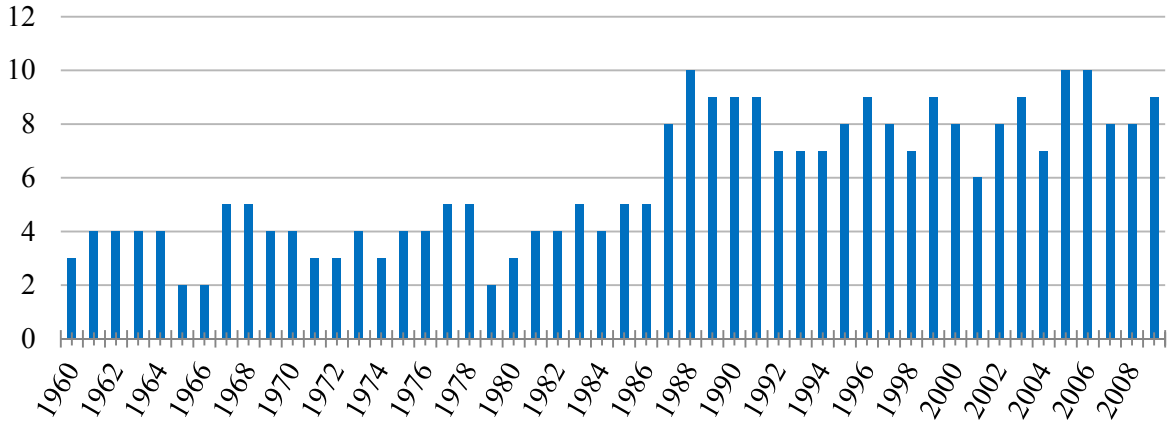
Notes: Units of analysis are state-years. Real personal income per capita is reported in US-$. Figures of income from farming, transfers, and mining represent shares of total personal state income (in percentage points). Fiscal variables are divided by total state personal income in $1,000. * and ** indicate significance at the 5% and 1% level, respectively.

Tenures of the predecessors of CEO governors are associated with a significantly lower growth rate of personal income per capita and a significantly larger unemployment rate, indicating that CEO governors tend to take office during times of economic pressure. Also, the share of personal income from government transfers is notably larger in years before a business person becomes governor, implying that the state's citizens depend on the government to a larger extent. Moreover, the levels of public borrowing and public debt are larger in years in which a business person candidate is elected, supporting the conjecture that business persons find it easier to become elected in times of fiscal strain. Concerning governor characteristics, the descriptive statistics indicate that a CEO governor is, on average, older when holding office, more likely to lack political experience when entering office, and more likely to be a Republican than the average non-CEO governor.

Figure 3 shows the distribution of CEO governors over our sample period. We see a noticeable increase in the number of CEO governors starting at the end of the 1980's. Since

then, the number of CEO governors has been relatively stable and remarkably high. On average, between 1960 and 2009, roughly 6 out of 48 states have had a CEO governor in a particular year. Altogether, our sample comprises 446 governors of which 50 were business persons before taking up politics. We have a total of 294 state-year observations in the treatment group and 2106 state-years in the (potential) control group.

Figure 3: Number of CEO governors per year between 1960 and 2009.



3.2. Results

The results of the nearest neighbor matching approach are presented in Table 2. The left panel shows the estimate of the average treatment effect on the treated (ATT) for the growth rate of real personal income per capita and the right panel shows the ATT for the unemployment rate.

Table 2: Estimated average treatment effects on the treated

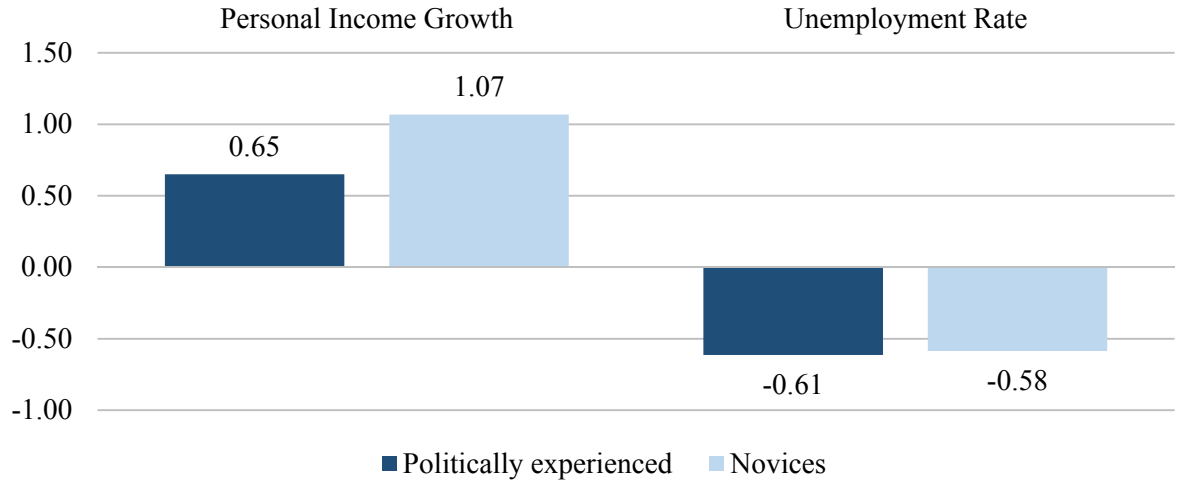
Growth rate real personal income p.c.		Unemployment rate	
$\hat{\tau}_{ATT}$	Std. error	$\hat{\tau}_{ATT}$	Std. error
0.802**	0.136	−0.602**	0.117
No. of treated units: 262		No. of treated units: 216	
No. of control units: 234		No. of control units: 186	
No. of total obs.: 2223		No. of total obs.: 1435	

Notes: Bias adjustment as suggested by Abadie and Imbens (2011) is applied to estimate the ATTs. Abadie/Imbens (2006) standard errors are reported. * and ** indicate significance at the 5% and 1% level, respectively.

Both estimates appear to be statistically significant at every reasonable level of significance. Economically, our findings suggest that the annual growth rate of personal income is, on average, 0.8 pp larger during the tenures of CEO governors as compared to non-CEO governors who took office under similar conditions. At the same time, in an average year, the unemployment rate is 0.6 pp lower during the incumbency of a CEO governor. Put differently, states which elected a CEO governor would have had an average annual income growth rate which is 0.8 pp lower and an unemployment rate that is 0.6 pp larger if they would have decided to go for a non-CEO governor. Thus, the effects are not only statistically significant, but also economically highly relevant.

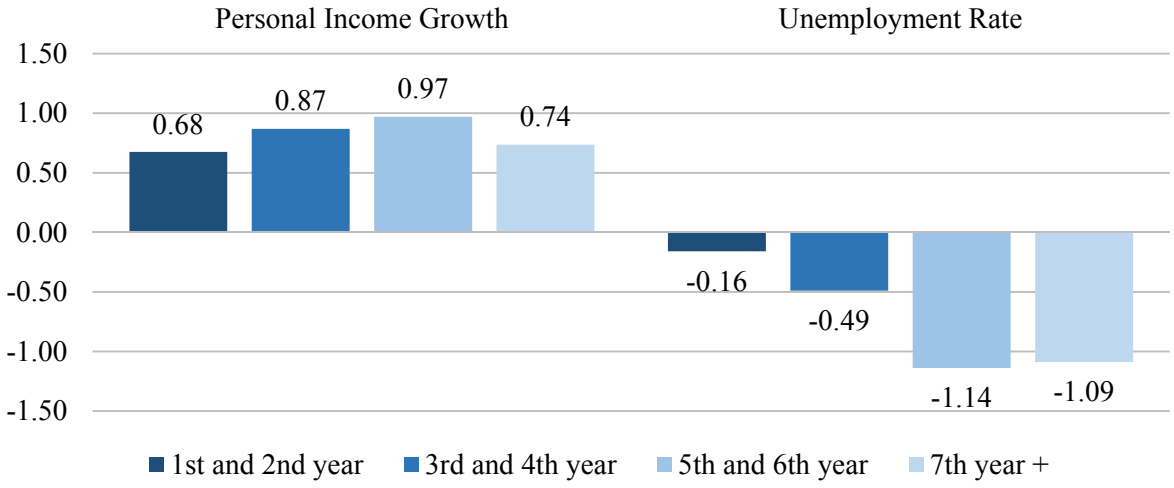
To glean further insights, we decompose the ATTs along various dimensions. First, we compute average ATTs for politically experienced CEO governors and CEO governors who are political novices. We consider CEO governors as politically experienced if they were elected to a political office on the local, state, or federal level before. The results are illustrated in Figure 4. Interestingly, we find that the tenures of CEO governors who are political novices are associated with higher income growth rates than the tenures of politically experienced CEO governors, the difference being 0.42 pp. Arguably, business persons who spent time in politics before being elected as governors tend to adjust, i.e. they become more like career politicians and act less like CEOs when in office. What is more, this finding challenges the notion that political experience is valuable (at least with regard to a governor's economic performance). However, with regard to the unemployment rate, the difference between politically experienced CEO governors and novices is negligible.

Figure 4: Average ATTs for politically experienced CEO governors and political novices



Next, we study the development of the impact CEO governors exert on a state's economic performance over their years spent in office. To do so, we compute ATTs for (i) the first and second year in office, (ii) the third and fourth year in office, (iii) the fifth and sixth year in office, and (iv) for the years in office beyond the sixth year.[16] Results are presented in Figure 5. It appears that the effect of having a CEO governor on both income growth and unemployment increases steadily over the first six years in office. This finding seems plausible as it indicates that it takes some time until a CEO governor exerts the maximum possible influence on a state's economic activity. The fact that the unemployment rate decreases by many times over between the first two years on the one hand and years five and six on the other hand implies that CEO governors create a certain amount of new jobs throughout every year during their incumbency.

Figure 5: Average ATTs decomposed by the number of years in office

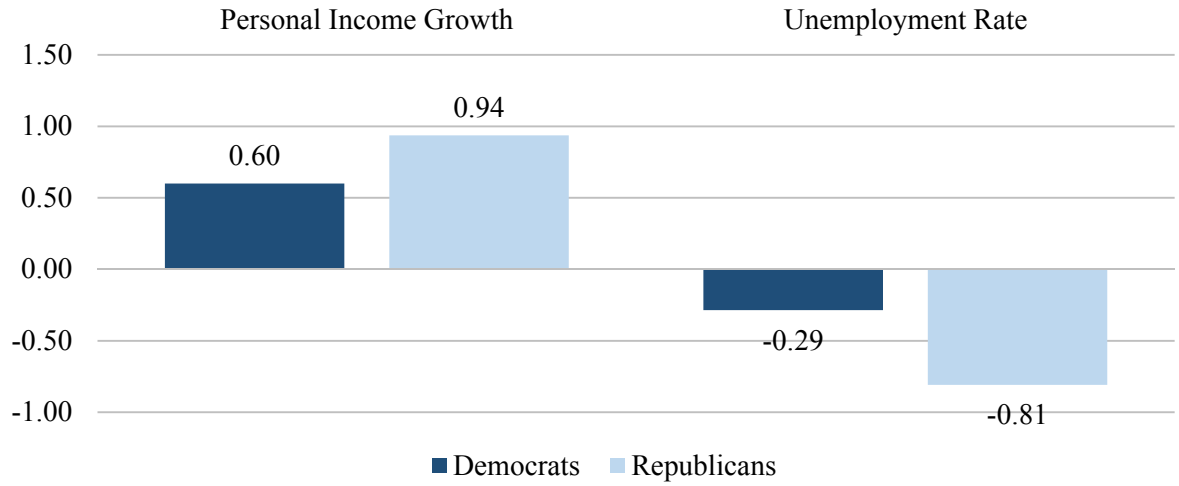


Finally, we investigate whether the political party matters, i.e. whether the influence of a CEO governor on a state's economic performance varies between republican and democratic CEO governors. As Figure 6 reveals, republican CEO governors appear to notably outperform democratic CEO governors. The average annual income growth rate during the tenure of a republican CEO governor is 0.34 pp larger than during the tenure of a democratic CEO governor; the unemployment rate in an average year is 0.52 pp lower when a republican CEO governor holds office. Arguably, this finding may be due to differences with regard to the ideological leanings across CEO governors from different parties, i.e. republican CEO

[16] We compute average ATTs for two consecutive years to increase the number of observations in each category.

governors could have an even stronger liberal leaning than democratic CEO governors, who may put a greater emphasis on employee protection and labour market regulation.

Figure 6: Average ATTs for Democratic versus Republican CEO governors



3.3. Checks for robustness

We check the robustness of our findings in several ways. First, we test whether our results are driven by outliers. To do so, we identify the three, four, and five best performing CEO governors and successively drop the corresponding state-years from our sample.[17] The results are outlined in Table A2 in the Appendix. We find that the estimates of the ATTs for both income growth and unemployment remain statistically significant, indicating that our previous findings are not driven by a few 'outstanding' CEO governors.

Second, we investigate whether our findings remain robust if we employ a different strategy to identify the nearest neighbors of the units exposed to treatment. Instead of using a weighted function of covariates, one can also use so-called propensity scores, i.e. estimated treatment probabilities, to find non-treated units which are as similar as possible to the treated units. To obtain these probabilities we run a probit estimation with the treatment variable–i.e. the dummy with value 1 if a CEO governor is in power and 0 otherwise–as the dependent variable and the pre-treatment and governor characteristics introduced in Section 2 as covariates. Units exposed to treatment are then matched with units which are as close as possible with regard to the treatment probability.[18] The results for the propensity score

[17] The best performing governors are identified by calculating average ATTs for each single CEO governor in our sample.

[18] The idea to match on propensity scores dates back to Rosenbaum and Rubin (1983). See Caliendo and Kopeinig (2008) for a discussion of variants of this estimator.

matching approach are outlined in Table A3 in the Appendix. As can be seen, the coefficients are only slightly different as compared to the covariate-based matching approach. The estimate of the ATT for real personal income growth per capita is 0.70 pp and the ATT estimate for the unemployment rate is −0.71 pp. Both estimates are statistically significant.

Finally, we test whether our results are driven by our choice of the empirical method in general. To do so, we evaluate the treatment effect of having a CEO governor using panel difference-in-difference estimation, employing the same covariates as in the nearest neighbor matching approach. Based on regression analysis, we obtain an ATT of 0.46 pp for personal income per capita growth and an ATT of −0.32 pp for the unemployment rate.[19] Both effects are significant at the 5% level.[20]

4. Conclusions

The aim of this paper is to evaluate the economic performance of U.S. state governors who were business persons before taking up politics. We focus on the influence CEO governors exert on a state's annual growth rate of real personal income per capita as well as on the unemployment rate. For this purpose, we collected a dataset comprising information on the occupational backgrounds of the governors of 48 states between 1960 and 2010. To account for the fact that the election of a business person as governor may be related to a state's economic and fiscal situation and to solve the associated identification problem, we rely on a nearest neighbor matching approach. The performance of CEO governors is compared to the performance of non-CEO governors with similar characteristics and who took office under comparable economic and fiscal conditions.

The findings presented in this paper form a nice story: descriptive statistics as well as anecdotal evidence indicate that business person candidates appeal to voters especially during times of economic pressure since business persons appear to find it easier to win gubernatorial elections during recessions or periods of fiscal strain. In such times, the skills and experiences characterising a successful CEO may be a strong credential. The confidence voters put in business person candidates seems to be justified, as CEO governors notably boost the economy. An average year of incumbency for a CEO governor is associated with a 0.8

[19] Results are available on request.

[20] Arguably, the coefficient estimates based on regression analysis are smaller as compared to the nearest neighbor matching approach (in absolute terms) because in a regression based approach, we need to impose a restriction regarding the functional form of the empirical model. If, for instance, it is harder for a governor to stimulate the economy during a recession and, at the same time, CEO governors tend to be elected in times of economic hardship, as the descriptive statistics in Section 2 indicate, we may underestimate the true ATT of having a CEO governor when relying on difference-in-difference estimation.

percentage point (pp) higher growth rate of real personal income per capita and a decline in the unemployment rate by 0.6 pp. Moreover, their positive impact on the state's economy is larger the more time they spend in office.

A word of caution is necessary concerning potential conclusions which may be drawn based on our findings. It seems plausible to conclude that CEO governors should be preferred over career politicians at the polls since their economic performance is noticeable better. However, in our analysis, we solely focus on the influence CEO governors exert on two broad macroeconomic aggregates. Our analysis does not reveal, for instance, to which extent different groups within a state's population benefit from the positive economic development. Moreover, politics involves trade-offs. Accordingly, the performance of a governor has many dimensions, with economic performance being just one of them. Boosting the economy may not necessarily translate into higher public welfare or aggregate life satisfaction. Thus, our findings pave the way for future research in this area.

Appendix

Data

All data are at annual frequency.

The *economic variables* and *population* figures are from two different sources. Data on state personal income, state personal income per capita, the growth rate of personal income per capita, the shares of personal income from farming, mining, and government transfers, as well as state population are from the U.S. Bureau of Economic Analysis (http://www.bea.gov/). For price adjustment of state personal income per capita and state personal income per capita growth, we use the national personal consumption expenditure price index (PCE; base year is 2009) since state level price indices are not available for our sample period. PCE data are also from the Bureau of Economic Analysis. State level unemployment rates are from the Bureau of Labor Statistics (http://www.bls.gov/).

The *fiscal variables* are from the U.S. Census Bureau which also provides the values of fiscal variables in relation to $1,000 of state personal income.

Information on U.S. state governors is collected mainly from the website of the National Governors Association (http://www.nga.org/). The website provides detailed information on governors' biographies, including their party affiliation, tenure, year of birth, as well as their educational and occupational backgrounds. The information provided there was cross-checked using the websites of the respective state governments as well as personal websites of the governors (when existing).

Additional tables and checks for robustness

Table A1: List of U.S. state governors who were businessmen prior to holding office.

Governor	State	Tenure
Paul Jones Fannin	Arizona	1959–1965
J. Fife Symington III	Arizona	1991–1997
Elbert Nortrand Carvel	Delaware	1961–1965
Jack Markell	Delaware	2009–open
Claude Roy Kirk, Jr.	Florida	1967–1971
John Ellis Bush	Florida	1999–2007
Joe Frank Harris	Georgia	1983–1991
Don William Samuelson	Idaho	1967–1971
C. L. "Butch" Otter	Idaho	2007–open
Robert D. Orr	Indiana	1981–1989
Mitchell Elias Daniels, Jr.	Indiana	2005–2013
John Y. Brown, Jr.	Kentucky	1979–1983
Wallace G. Wilkinson	Kentucky	1987–1991
Paul E. Patton	Kentucky	1995–2003
Charles Elson Roemer III	Louisiana	1988–1992
Mitt Romney	Massachusetts	2003–2007
George Wilcken Romney	Michigan	1963–1969
Elmer Lee Anderson	Minnesota	1961–1963
Daniel Kirkwood Fordice, Jr.	Mississippi	1992–2000
John James Exon	Nebraska	1971–1979
Kenneth C. Guinn	Nevada	1999–2007
Meldrim Thomson, Jr.	New Hampshire	1973–1979
John H. Sununu	New Hampshire	1983–1989
Craig Benson	New Hampshire	2003–2005
John H. Lynch	New Hampshire	2005–2013
Jon S. Corzine	New Jersey	2006–2010
John Burroughs	New Mexico	1959–1961
Gary E. Johnson	New Mexico	1995–2003
Nelson Aldrich Rockefeller	New York	1959–1973
Edward Thomas Schafer	North Dakota	1992–2000
Dewey Follett Bartlett	Oklahoma	1967–1971
Robert William Straub	Oregon	1975–1979
Neil Goldschmidt	Oregon	1987–1991
Milton Jerrold Shapp	Pennsylvania	1971–1979

Table A1 (continued)

Governor	State	Tenure
Mark S. Schweiker	Pennsylvania	2001–2003
Bruce G. Sundlun	Rhode Island	1991–1995
Donald L. Carcieri	Rhode Island	2003–2011
Ned Ray McWherter	Tennessee	1987–1995
Don K. Sundquist	Tennessee	1995–2003
Philip N. Bredesen, Jr.	Tennessee	2003–2011
William P. Clements, Jr.	Texas	1979–1983; 1987–1991
George W. Bush	Texas	1995–2000
Norman Howard Bangerter	Utah	1985–1993
Michael Okerlund Leavitt	Utah	1993–2003
Jon Huntsman, Jr.	Utah	2005–2009
Richard A. Snelling	Vermont	1977–1985; 1991
Mark R. Warner	Virginia	2002–2006
Booth Gardner	Washington	1985–1993
William Gaston Caperton III	West Virginia	1989–1997
Joseph Manchin III	West Virginia	2005–2010

Table A2: Estimated average treatment effects on the treated–omitting the 3, 4, and 5 best performing CEO governors.

Growth rate real personal income p.c.					
$\hat{\tau}_{ATT\|-3}$	Std. error	$\hat{\tau}_{ATT\|-4}$	Std. error	$\hat{\tau}_{ATT\|-5}$	Std. error
0.674**	0.137	0.636**	0.139	0.627**	0.141

Unemployment rate					
$\hat{\tau}_{ATT\|-3}$	Std. error	$\hat{\tau}_{ATT\|-4}$	Std. error	$\hat{\tau}_{ATT\|-5}$	Std. error
−0.367**	0.113	−0.276*	0.115	−0.238*	0.109

Notes: Bias adjustment as suggested by Abadie and Imbens (2011) is applied to estimate the ATTs. Abadie/Imbens (2006) standard errors are reported. * and ** indicate significance at the 5% and 1% level, respectively.

Table A3: Estimated average treatment effects on the treated based on propensity score matching

Growth rate real personal income p.c.		Unemployment rate	
$\hat{\tau}_{ATT}$	Std. error	$\hat{\tau}_{ATT}$	Std. error
0.700*	0.283	−0.712**	0.261
No. of treated units: 262		No. of treated units: 216	
No. of control units: 166		No. of control units: 122	
No. of total obs.: 2223		No. of total obs.: 1435	

Notes: Matching is based on treatment probabilities which are estimated based on probit estimations. Abadie/Imbens (2006) standard errors which account for the variance in the treatment model are reported. * and ** indicate significance at the 5% and 1% level, respectively.

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Topics in Fiscal Policy: Evidence from a Representative Survey of the German Population

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Coordination: Bernd Hayo • Philipps-University Marburg
Faculty of Business Administration and Economics • Universitätsstraße 24, D-35032 Marburg
Tel: +49-6421-2823091, Fax: +49-6421-2823088, e-mail: hayo@wiwi.uni-marburg.de

Topics in Fiscal Policy: Evidence from a Representative Survey of the German Population*

Bernd Hayo, Florian Neumeier, and Matthias Uhl

University of Marburg

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Corresponding author:

Bernd Hayo
School of Business and Economics
University of Marburg
D-35032 Marburg
Germany
Phone: +49–6421–2823091
Email: hayo@wiwi.uni-marburg.de

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Topics in Fiscal Policy:
Evidence from a Representative Survey of the German Population

Abstract This paper provides background information and basic descriptive statistics for a representative survey of the German population conducted on our behalf by *GfK* in the first quarter of 2013. The survey addresses important topics in fiscal policy, including: 1) public preferences on the composition of fiscal expenditure; 2) public preferences on public debt; 3) the effect of tax changes on consumption and savings; and 4) the effect of tax changes on labour market activities.

JEL Classification: E21 · E62 · H30 · J22

Keywords: Survey evidence · Fiscal policy · Public debt · Public preferences · Consumption · Labour supply

1. Introduction

This paper provides background information and basic descriptive statistics for a representative survey of the German population conducted on our behalf by *GfK* in the first quarter of 2013. The survey addresses important topics in fiscal policy, including: 1) public preferences on the composition of fiscal expenditures; 2) public preferences on public debt and different consolidation measures; 3) the effect of tax changes on consumption and savings; and 4) the effect of tax changes on labour market activities. The survey data are analysed in a series of research papers by the Macroeconomics Group of Marburg University, with the purpose of the present paper being to give full documentation of the survey.

Section 2 introduces the survey instrument and Appendix A contains the full questionnaire, both in the original German version as well as an English translation. Appendix B gives basic descriptive statistics for all survey items.

2. The survey instrument

The survey was conducted as part of an omnibus survey between February 15th, 2013 and March 1st, 2013, and administered by *GfK*. *GfK* is one of the largest private research companies in Germany, focusing on the fields of market research and public opinion. The sample consists of 2,042 representatively selected persons from the German population aged 14 or above. Methodologically, the survey is based on quota sampling. Table 1 compares important characteristics of our survey sample with those of the general population. The correspondence level is high, indicating that our survey sample is representative of the general population. The survey questions were implemented in face-to-face interviews using Pen-Pads. The interviewers followed specific instructions as described in the survey instrument. Appendix A contains the full text of the questionnaire, including comments for the interviewers, both in the original German version as well as an English translation.

The first part of the survey sheds light on the interviewees' preferences on public spending priorities. At the beginning of the survey, six major policy areas are listed and briefly described; the current amount of public spending on these areas is then given both in euros per capita as well as in relation to total public spending. We believe these relative measures to be more comprehensible to the respondents than absolute figures. The policy areas listed in the survey are those on which the German government currently spends the most: social security, public safety, education, infrastructure, economic development, and defence. The interviewees were asked about the policy areas the government should spend more (Item 1) or less (Item 2) money on according to their opinion. Multiple answers are possible. Interviewees who prefer spending hikes in at least one policy area are then asked about how additional spending should be financed (Item 1a), and those who prefer spending cuts in any area are asked about how the additional funds should be used (Item 2a). In both cases, three options are given: spending hikes (spending cuts) possibly financed through

(used for) a tax hike (tax cut); public borrowing (public debt reduction); or a decrease (increase) in public spending in any other policy area. Again, we allow for multiple answers.

Table 1 Comparison of sample to population

Property	Population distribution in %	Sample distribution in %	Frequency in sample	Property	Population distribution in %	Sample distribution in %	Frequency in sample
Gender				**Occupation of head of household**			
Male	49	49	996	Blue-collar worker	24	24	494
Female	51	51	1046	White-collar worker	32	32	653
				Public servant	4	4	82
Age				Self-employed	8	8	159
14 – 15	2	2	39	Non-working	32	32	653
16 – 19	5	5	104				
20 – 29	14	14	278	**State**			
30 – 39	13	13	270	Schleswig-Holstein	4	4	74
40 – 49	19	19	389	Hamburg	2	2	41
50 – 59	17	17	341	N.sachsen/Bremen	11	11	216
60 – 69	13	13	265	Nordrhein-Westfalen	22	21	439
70 +	17	17	356	Hessen	7	7	151
				R.-Pfalz/Saarland	6	6	127
Household size				B.-Wuerttemberg	13	13	261
1	22	22	457	Bayern	15	15	312
2	39	38	784	M.-Vorpommern	2	2	43
3	18	18	366	Sachsen-Anhalt	3	3	59
More	21	21	436	Brandenburg	3	3	65
				Thueringen	3	3	59
City size				Sachsen	5	6	112
- 4999	15	15	314	Berlin	4	4	82
5000 – 19999	27	27	549				
20000 – 99999	28	28	564				
100000 +	30	30	615				

Notes: Table compares the distribution of specific characteristics in the general population with the survey sample. Sample distribution is based on a total of 2,042 observations.

By directly relating public spending to public revenues, we compel the interviewees to take the public budget constraint into account when giving their answers, so as to circumvent the occurrence of the 'more-for-less paradox' (Welch, 1985). Note that the questionnaire is

constructed in such a way that interviewees have to answer consistently, e.g. interviewees who prefer an increase in public spending in any policy area and believe that the increase should be financed through a reduction in public spending in another area are obliged to name at least one policy area in which public spending should be cut. Note, however, that this set-up does not necessarily result in a balanced budget when considering actual financial flows. For instance, cuts in defence spending are unlikely to be sufficient for a notable increase in social security spending.

Item 3 refers to a tax estimation according to which the German government is going to increase revenues by €23 billion more than previously expected within the next four years. The estimate is provided by the Working Party on Tax Revenue Forecasting ('Arbeitskreis Steuerschätzung') and was published in October 2012, i.e. roughly four months before the survey was conducted (cf. BMF, 2012). The interviewees are asked how the state should use these additional revenues. The choice was between nine alternatives: decreasing taxes, reducing public debt, or increasing public spending on social security, public safety, education, infrastructure, economic development, defence, or other areas. The interviewees can voice a maximum of three preferences, which must also be ranked. In this specific scenario, money comes 'out of the blue', so that respondents do not have to take public budget constraints into account.

Item 4 studies the interviewees' attitudes toward public indebtedness. First, we asked the interviewees whether they think that the state should reduce public debt, keep the level of public debt unchanged, or incur additional public debt. Those who opt for a reduction of public debt are then asked about their preferred consolidation measure (Item 4a); those who favour an incurrence of additional public debt are asked what the additional funds should be used for (Item 4c). In both cases, the respondents can choose between eight different options: increase (decrease) taxes or decrease (increase) public spending on social security, public safety, education, infrastructure, economic development, defence, or other areas. Yet again, each interviewee can voice at most three alternatives, which must also be ranked.

Interviewees who state that public debt should be reduced are asked to answer an additional question. In Item 4b, we introduce three alternative (hypothetical) debt-reduction paths, and ask respondents which path they think the government should adopt. According to path A, debt reduction will be distributed *evenly* over the following years. Path B implies that a *smaller* amount of public debt will be reduced *in the near future* and a *larger* amount *in the far future*; according to path C, a *larger* amount of debt will be reduced *in the near future* and a *smaller* amount *in the far future*. The different debt-reduction paths are graphically illustrated on the interviewer's laptop by means of different stacks of money coins. The aim of this item is to analyse the intensity of the respondents' public debt aversion. We believe that respondents who chose path C can be considered more debt averse than those who prefer path A or B; respondents who chose path A may be considered more debt averse than those who opted for path B.

Item 5 elicits the interviewees' attitudes toward the German 'debt brake'. In 2009, the German constitution was amended, introducing a balanced budget rule. According to this rule, the German federal government is not allowed to run an annual structural deficit of more than 0.35% of GDP from 2016 onwards. To simplify matters for the respondents, we refrain from using the term 'structural deficit' along with the measure of 0.35% of GDP in the wording of the item. Instead, we state that the government can take on 'almost no additional public debt' from 2016 onwards. Exemptions are allowed only in case of economic crises or natural disasters. Respondents are asked to indicate whether they are (i) against the debt brake; (ii) in favour of the debt brake; or (iii) believe that the debt brake does not go far enough, i.e. that the government should not be allowed to incur additional public debt at all.

Item 6 is designed to qualitatively evaluate individual consumption responses to the accumulation of public debt. All interviewees were asked to indicate whether they (i) spent a larger proportion of their income; (ii) a smaller proportion of their income (in reaction to the government's increasing reliance on debt financing); or (iii) their behaviour was not affected by the public debt situation at all.

Items 7 to 9 are included for assessing the interviewees' risk and time preferences, respectively. Within the context of these questions, non-incentivised 'experiments' were conducted involving financial decisions. All three items emulate incentivised experiments conducted within the 2006 wave of the German Socio-Economic Panel (SOEP). In particular, the wording of the instructions for both the interviewer and the interviewee, the structure of the payoff tables, and the sequence of actions is the same as in the SOEP experiments (cf. TNS-Infratest Sozialforschung, 2011a; 2011b). We modify the payoffs in column A of Item 7, respective column B of Item 8 and 9, to show that, as in the SOEP data, the distribution of answers is strongly convex, i.e. only a few people choose small payoffs, while many people choose large payoffs. Two experiments are conducted to assess the respondents' time preferences (Items 8 and 9) in order to account for the fact that many people are observed to have time-inconsistent preferences, meaning that they are more patient in the long run than in the short run. By varying the timing of the payoffs across Items 8 and 9, we allow individual discount rates between two equidistant periods to vary with the timing of the earliest possible payoff.

For the remaining items, the laptop is handed over to the interviewee. The interviewer is not able to monitor what the interviewee enters, and provides assistance only in the case of questions. That way, we want to make sure that each interviewee answers the following questions honestly.

Item 10 contains five couples of contradictory statements. For each couple of statements, the interviewee is asked to indicate with which statement he or she agrees. The first four statement couples assess different dimensions of (dis)trust in politicians. With the help of the last couple of statements, we are able to evaluate whether a respondent holds an egalitarian attitude. In Item 11, we ask which political party the respondent would vote for if

elections were held next Sunday. Altogether, we consider seven major German parties. In Item 12, respondents are asked to indicate whether they are union members. In Item 13, we ask whether the interviewee has children, and if so, how many. Item 14 evaluates the interviewees' satisfaction with their current economic situation. This item is based on a question from the German General Social Survey (GGSS/ALLBUS; cf. Terwey and Baltzer, 2013), the only exception being that we refer to the 'economic' situation, whereas respondents in the GGSS are asked about their 'personal' situation.

Item 15 is designed for studying the extent of the respondents' economic knowledge. We are particularly interested in their factual knowledge about debt-related economic indicators. Using multiple choice questions, we ask about (i) the German federal government's budget deficit in 2012 (correct answer: 1% of GDP); (ii) the current interest rate on government bonds with a maturity of 10 years (correct answer: 1.5%); and (iii) the inflation rate in 2012 (correct answer: 2%). All figures were released a couple of weeks before the survey was conducted and widely reported by the media.

Items 16 to 24 study consumption and labour supply responses to a recent payroll tax change in Germany. Specifically, at the beginning of 2013, contribution rates to the statuary pension insurance system in Germany were reduced from 19.6% to 18.9%, thereby lessening the overall tax burden for employees and employers. This payroll tax reduction is explicitly mentioned at the start of our survey on consumption and labour supply responses to tax changes.

The payroll tax change that forms the basis of our analysis affects only a subsample of the general German population. All employees contribute to the statutory pension insurance system. In addition, certain employers, freelancers, and the insignificantly employed pay into the government's pension insurance system, some doing so voluntary. The *Bundesagentur für Arbeit*, the German federal job centre, directly pays pension insurance contribution rates for the unemployed, whereas public servants and those not part of the labour force – including pensioners and inactive working-age population – are not subject to payroll taxation. Adequate filtering is in place to ensure that only respondents that are subject to payroll taxation are confronted with our questions. Thus, we ask all employees and those employers, freelancers, and insignificantly employed who state that they contribute to the statutory pension insurance system for their consumption responses. When observing labour supply effects, we also add unemployed persons. Items 16 and items 17 contain the corresponding filter questions.

Item 18 is designed for measuring consumption responses. The main references for this question are Sahm et al. (2012) and Shapiro and Slemrod (1995, 2003, 2009). We measure consumption responses using a qualitative approach, assuming that respondents are more likely to accurately answer a qualitative question rather than a quantitative one. Item 19 and item 20 are constructed for capturing whether the payroll tax change is perceived to be temporary or permanent. Item 21 builds on ideas proposed in Shapiro and Slemrod (2003), and is designed to measure the specific budgeting approach taken by the household. Item 22

is a statement battery intended to capture interviewees' perceptions of the macroeconomic environment. Specifically, it measures expectations about the future economic situation, inflation expectations, as well as assessments of savings' security and their profitability.

Items 23 and 24 measure interviewees' labour supply responses. In a pretest, many respondents were confused by being asked about their labour supply responses, as they seemed to think in terms of a fixed labour supply, with work organised in fixed-hour contracts. Accordingly, we opt for a two-stage approach, with the aim of reducing measurement error. First, we ask all respondents whether taxation matters for their labour supply decisions. We then ask the subset of respondents who have indicated that taxation is important for their labour supply decisions to state on a five-point scale whether they have increased or decreased labour supply following the 2013 payroll tax change.

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Appendix A: The survey instrument

A.1 The questionnaire (German original)

Die folgende Tabelle zeigt, wie viel Geld der Staat für verschiedene Aufgabenbereiche in der Vergangenheit pro Jahr ausgegeben hat und zwar sowohl in Euro pro Einwohner als auch als Anteil an den gesamten öffentlichen Ausgaben. Berücksichtigt wurden dabei die Aufgabenbereiche, für die der Staat am meisten ausgegeben hat.

Interviewer: Bitte geben Sie dem Befragten Zeit, die Tabelle aufmerksam zu betrachten!

Politikbereich	Ausgabenposten	Ausgaben pro Einwohner	Anteil an Gesamtausgaben
Soziale Sicherung	u.a. Arbeitslosenunterstützung, Sozialhilfe, Familien- und Jugendhilfe	7.660€	56,6%
Bildung	u.a. öffentliche Schulen und Hochschulen	1.125€	8,3%
Öffentliche Sicherheit und Ordnung	u.a. Polizei, Rechtsschutz	455€	3,3%
Infrastruktur	u.a. Straßen- und Städtebau	350€	2,6%
Wirtschaftsförderung	u.a. Mittelstandsförderung, Investitionszuschüsse an Unternehmen, Finanzhilfen an strukturschwache Regionen	335€	2,5%
Verteidigung	u.a. Militärausrüstung, Wehrsold, Bundeswehrverwaltung	335€	2,5%
Zusammen		10.260€	75,8%

Angenommen, Sie könnten die öffentlichen Ausgaben und Einnahmen nach Ihren Wünschen verändern. Beispielsweise könnten Sie die Ausgaben in einem Politikbereich erhöhen, müssten dafür aber entweder zusätzliche Kredite aufnehmen, die Steuern erhöhen, oder aber die Ausgaben in einem anderen Bereich senken. Oder aber Sie senken die Ausgaben in einem Politikbereich und nutzen die frei werdenden Mittel zum Abbau der öffentlichen

Schulden, zur Senkung der Steuern, oder zur Erhöhung der Ausgaben in einem anderen Politikbereich. Geben Sie im Folgenden bitte an, für welche der oben genannten Bereiche der Staat in Zukunft mehr und für welche er weniger ausgeben sollte. Geben Sie bitte auch an, auf welche Weise gewünschte Ausgabenerhöhungen finanziert werden sollten bzw. was mit frei werdenden Mitteln im Falle von Ausgabenkürzungen geschehen sollte.

Interviewer: Bitte klären Sie, ob der Befragte die Aufgabenstellung verstanden hat! Wenn nicht, bitte wiederholen und erläutern.

1 Für welche Politikbereiche sollte der Staat Ihrer Meinung nach in Zukunft **mehr** Geld ausgeben?

Der Staat sollte mehr Geld ausgeben für (Mehrfachnennungen möglich)…	
… Soziale Sicherung	□
… Bildung	□
… Öffentliche Sicherheit und Ordnung	□
... Infrastruktur	□
… Wirtschaftsförderung	□
… Verteidigung	□
… andere, hier nicht genannte Bereiche	□
Der Staat sollte in Zukunft nicht **mehr** Geld ausgeben	□

*Hinweis: Wird „Der Staat sollte in Zukunft nicht **mehr** Geld ausgeben" gewählt ist keine weitere Nennung zulässig!*

*[Automatische Filterung: Die folgende Frage war nur dann zu beantworten, wenn in irgendeinem Politikbereich **höhere Ausgaben** bevorzugt wurden]*

1A Die Ausgabenerhöhung(en) soll(en) finanziert werden durch (Mehrfachnennungen möglich)…

… Steuererhöhungen	□
… öffentliche Kreditaufnahme	□
… eine Kürzung der Ausgaben in anderen Bereichen (siehe unten)	□

2 Für welche Politikbereiche sollte der Staat Ihrer Meinung nach in Zukunft **weniger** Geld ausgeben?

Der Staat sollte weniger Geld ausgeben für (Mehrfachnennungen möglich)…	
… Soziale Sicherung	□
… Bildung	□
… Öffentliche Sicherheit und Ordnung	□
... Infrastruktur	□
… Wirtschaftsförderung	□
… Verteidigung	□
… andere, hier nicht genannte Bereiche	□
Der Staat sollte in Zukunft <u>nicht</u> **weniger** Geld ausgeben	□

*Hinweis: Wird „Der Staat sollte in Zukunft <u>nicht</u> **weniger** Geld ausgeben“ gewählt ist keine weitere Nennung zulässig!*

*[Automatische Filterung: Die folgende Frage war nur dann zu beantworten, wenn in irgendeinem Politikbereich **geringere Ausgaben** bevorzugt wurden]*

2A Die frei werdenden Mittel sollen genutzt werden (Mehrfachnennungen möglich)…

… für Steuersenkungen	□
… zum Abbau öffentlicher Schulden	□
… zur Erhöhung der Ausgaben in anderen Bereichen (siehe oben)	□

Interviewer: Bitte auf Konsistenz der Antworten achten! Wünscht ein Befragter beispielsweise in einem Bereich zusätzliche Ausgaben und gibt dabei in Frage 1A gleichzeitig an, dass diese durch Kürzungen der Ausgaben in anderen Bereichen finanziert werden sollte, impliziert das mindestens eine Nennung in den ersten sieben Kategorien bei Frage 2!

3 Die letzte Steuerschätzung hat ergeben, dass der Staat über die nächsten 4 Jahre hinweg insgesamt etwa 23 Milliarden Euro mehr einnehmen wird als zunächst erwartet worden war. Was sollte der Staat Ihrer Meinung nach mit diesen zusätzlichen 23 Milliarden Euro tun? Geben Sie bitte maximal drei Alternativen an, die Sie am stärksten befürworten.

	Befürworte ich am **stärksten**	Befürworte ich am **zweitstärksten**	Befürworte ich am **drittstärksten**
Die Steuern senken	□	□	□
Öffentliche Schulden abbauen	□	□	□
Die öffentlichen Ausgaben erhöhen für…			
… Soziale Sicherung	□	□	□
… Öffentliche Sicherheit und Ordnung	□	□	□
… Bildung	□	□	□
… Infrastruktur	□	□	□
… Wirtschaftsförderung	□	□	□
… Verteidigung	□	□	□
… andere, hier nicht genannte Bereiche	□	□	□
Keine Angabe	□	□	□

Hinweis: In jeder Spalte ist jeweils nur eine Nennung zulässig!

4 Ende 2012 lag die Staatsverschuldung in Deutschland bei über 2 Billionen Euro. Das sind etwa 26.000 Euro pro Einwohner bzw. 80% des Bruttoinlandsprodukts. Wenn es nach Ihnen ginge: Sollte der Staat seine Schulden abbauen, sie auf dem derzeitigen Niveau belassen, oder sogar noch zusätzliche Schulden aufnehmen?

Schulden abbauen	□
Schulden auf derzeitigem Niveau halten	□
Zusätzliche Schulden aufnehmen	□

*[Automatische Filterung: Die folgende Frage war nur dann zu beantworten, wenn angegeben wurde, dass der Staat **Schulden abbauen** sollte]*

4A Was sollte der Staat am ehesten tun, um die Schulden abzubauen? Geben Sie bitte maximal drei Alternativen an, die Sie am stärksten befürworten.

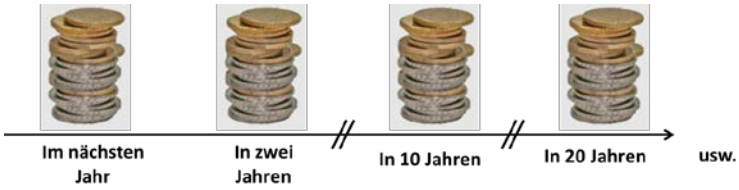
	Befürworte ich am **stärksten**	Befürworte ich am **zweitstärksten**	Befürworte ich am **drittstärksten**
Die Steuern erhöhen	□	□	□
Die öffentlichen Ausgaben kürzen für…			
… Soziale Sicherung	□	□	□
… Öffentliche Sicherheit und Ordnung	□	□	□
… Bildung	□	□	□
… Infrastruktur	□	□	□
… Wirtschaftsförderung	□	□	□
… Verteidigung	□	□	□
… andere, hier nicht genannte Bereiche	□	□	□
Keine Angabe	□	□	□

Hinweis: Bei dieser Frage ist in jeder Spalte jeweils nur eine Nennung zulässig!

*[Automatische Filterung: Die folgende Frage war nur dann zu beantworten, wenn angegeben wurde, dass der Staat **Schulden abbauen** sollte]*

4B Angenommen, Sie könnten zwischen drei Strategien zum Schuldenabbau wählen (Stellen Sie sich vor, die unten dargestellten Münzstapel verdeutlichen den Schuldenabbau. Ein kleiner Münzstapel bedeutet, dass wenige Schulden abgebaut werden, ein großer Stapel bedeutet, dass viele Schulden abgebaut werden.):

Option A: Der Schuldenabbau wird gleichmäßig über alle Jahre verteilt, d.h. **in jedem Jahr** wird ein in etwa **gleich großer Teil** des Schuldenbergs abgetragen.



Option B: Das Ausmaß des Schuldenabbaus wird über die Jahre hinweg Stück für Stück erhöht, d.h. **in naher Zukunft** wird **ein kleinerer Teil** des Schuldenbergs abgebaut und **in ferner Zukunft ein größerer Teil**.

Option C: Das Ausmaß des Schuldenabbaus wird über die Jahre Stück für Stück verringert, d.h. **in naher Zukunft** wird **ein größerer Teil** des Schuldenbergs abgebaut und **in ferner Zukunft ein kleinerer Teil**.

Für welche dieser Optionen würden Sie sich am ehesten entscheiden?

Option A: **In jedem Jahr** sollte **ein etwa gleich großer Teil** des Schuldenbergs abgebaut werden	□
Option B: **In naher Zukunft** sollte **ein kleinerer Teil** des Schuldenbergs abgebaut werden und **in ferner Zukunft ein größerer Teil**	□
Option C: **In naher Zukunft** sollte **ein größerer Teil** des Schuldenbergs abgebaut werden und **in ferner Zukunft ein kleinerer Teil**	□
Keine Angabe	□

*[Automatische Filterung: Die folgende Frage war nur dann zu beantworten, wenn angegeben wurde, dass der Staat **zusätzliche Schulden aufnehmen** sollte]*

4C Wofür sollte der Staat am ehesten zusätzliche Schulden aufnehmen? Geben Sie bitte maximal drei Alternativen an, die Sie am stärksten befürworten.

	Befürworte ich am **stärksten**	Befürworte ich am **zweitstärksten**	Befürworte ich am **drittstärksten**
Die Steuern senken	□	□	□
Die öffentlichen Ausgaben erhöhen für…			
… Soziale Sicherung	□	□	□
… Öffentliche Sicherheit und Ordnung	□	□	□
… Bildung	□	□	□
… Infrastruktur	□	□	□
… Wirtschaftsförderung	□	□	□
… Verteidigung	□	□	□
… andere, hier nicht genannte Bereiche	□	□	□
Keine Angabe	□	□	□

Hinweis: Bei dieser Frage ist in jeder Spalte jeweils nur eine Nennung zulässig!

5 Ab 2016 tritt auf Bundesebene die Schuldenbremse in Kraft. Diese sieht vor, dass der Bund so gut wie keine zusätzlichen Schulden mehr aufnehmen darf. Ausnahmen sind nur bei schlechter wirtschaftlicher Entwicklung oder bei Auftreten von Naturkatastrophen zulässig. Was ist Ihre Meinung zur Schuldenbremse?

Ich bin gegen die Schuldenbremse, die Kreditaufnahme des Bundes sollte nicht beschränkt werden	□
Ich befürworte die Schuldenbremse in der oben beschriebenen Form	□
Die Schuldenbremse geht nicht weit genug, der Bund sollte überhaupt keine Kredite aufnehmen dürfen	□
Keine Angabe	□

6 Der Schuldenstand des Staates ist zwischen 2008 und 2012 deutlich gewachsen. Hat die zunehmende Kreditfinanzierung der öffentlichen Ausgaben in den vergangenen Jahren etwas an Ihrem Ausgabe- und Sparverhalten geändert?

Ja, ich gebe **einen geringeren Teil** meines Einkommens aus und spare dafür **einen größeren Teil**	□
Ja, ich gebe **einen größeren Teil** meines Einkommens aus und spare dafür **einen geringeren Teil**	□
Nein, ich habe mein Verhalten infolge der wachsenden Staatsverschuldung nicht geändert	□

7 Als nächstes möchten wir gerne einige kurze Verhaltensexperimente durchführen, bei denen es um finanzielle Entscheidungen geht. Beim ersten Experiment treffen Sie Ihre Entscheidungen anhand dieser Tabelle (untenstehende Liste vorlegen). In jeder Zeile sehen Sie zwei Alternativen. Sie können wählen zwischen einem festen Geldbetrag, den Sie „sicher" ausbezahlt bekommen und einer Lotterie nach dem Prinzip „Alles oder nichts": hier können Sie mit 50% Wahrscheinlichkeit 1.000 Euro gewinnen und mit 50% Wahrscheinlichkeit nichts.

Sie beginnen bitte mit Zeile 1 und gehen dann von Zeile zu Zeile weiter. In jeder Zeile entscheiden Sie sich bitte zwischen der sicheren Auszahlung (Spalte A) und der Lotterie (Spalte B). Die Lotterie bleibt in allen Zeilen gleich. Nur der Betrag der sicheren Auszahlung (links) steigt von Zeile zu Zeile.

	Sie erhalten…		Sie erhalten…
	Sicher		**1.000€ oder nichts**
			Gewinnchance 50:50
	A	**oder**	**B**
1	0 € sicher		Gewinnchance 1.000€ / 0€
2	100 € sicher		Gewinnchance 1.000€ / 0€
3	200 € sicher		Gewinnchance 1.000€ / 0€
4	300 € sicher		Gewinnchance 1.000€ / 0€
5	400 € sicher		Gewinnchance 1.000€ / 0€
6	500 € sicher		Gewinnchance 1.000€ / 0€
7	600 € sicher		Gewinnchance 1.000€ / 0€
8	700 € sicher		Gewinnchance 1.000€ / 0€
9	800 € sicher		Gewinnchance 1.000€ / 0€
10	900 € sicher		Gewinnchance 1.000€ / 0€

Interviewer: Starten Sie bitte mit Zeile 1 und der Frage: „Wie entscheiden Sie sich? 0€ sicher oder Gewinnchance 1.000€ / 0€?". Entscheidet sich der Befragte für Option B, geht es weiter mit Zeile zwei und der Frage „Wie entscheiden Sie sich? 100€ sicher oder Gewinnchance 1.000€ / 0€?" usw. Das Experiment ist beendet, sobald der Befragte sich das erste Mal für Option A entscheidet. Bitte notieren Sie die Nummer der Zeile, in der sich der Befragte das erste Mal für Option A entschieden hat.

Option A wurde gewählt in Zeile Nummer: ☐

8 Im nächsten Experiment treffen Sie Ihre Entscheidungen anhand dieser Tabelle (untenstehende Liste vorlegen). In jeder Zeile sehen Sie zwei Alternativen. Sie können wählen zwischen einem festen Betrag von 1.000€, den Sie **sofort** ausgezahlt bekommen und einem etwas höheren Betrag, der Ihnen aber erst **in 6 Monaten** ausgezahlt wird.

Sie beginnen bitte mit Zeile 1 und gehen dann von Zeile zu Zeile weiter. In jeder Zeile entscheiden Sie sich bitte zwischen den 1.000€ **sofort** (Spalte A) und dem höheren Betrag **in 6 Monaten** (Spalte B). Der Betrag links bleibt in allen Zeilen gleich, nur der Betrag rechts steigt von Zeile zu Zeile.

	Sie erhalten…		Sie erhalten…
	Heute		**In 6 Monaten**
	A	**oder**	**B**
1	1.000 €		1.000 €
2	1.000 €		1.010 €
3	1.000 €		1.020 €
4	1.000 €		1.030 €
5	1.000 €		1.050 €
6	1.000 €		1.075 €
7	1.000 €		1.100 €
8	1.000 €		1.150 €
9	1.000 €		1.200 €
10	1.000 €		1.300 €
11	1.000 €		1.400 €
12	1.000 €		1.500 €
13	1.000 €		1.750 €
14	1.000 €		2.000 €

Interviewer: Starten Sie bitte mit Zeile 1 und der Frage: „Wie entscheiden Sie sich? 1.000€ heute oder 1.000€ in 6 Monaten?“. Entscheidet sich der Befragte für Option A, geht es weiter mit Zeile zwei und der Frage „Wie entscheiden Sie sich? 1.000€ heute oder 1.010€ in 6 Monaten?“ usw. Das Experiment ist beendet, sobald der Befragte sich das erste Mal für Option B entscheidet. Bitte notieren Sie die Nummer der Zeile, in der sich der Befragte das erste Mal für Option B entschieden hat.

Option B wurde gewählt in Zeile Nummer: ☐

9 Im letzten Experiment treffen Sie Ihre Entscheidungen anhand dieser Tabelle (untenstehende Liste vorlegen). In jeder Zeile sehen Sie wieder zwei Alternativen. Sie können wählen zwischen einem festen Betrag von 1.000€, den Sie **in 6 Monaten** ausgezahlt bekommen und einem etwas höheren Betrag, der Ihnen aber erst **in 12 Monaten** ausgezahlt wird.

Sie beginnen bitte mit Zeile 1 und gehen dann von Zeile zu Zeile weiter. In jeder Zeile entscheiden Sie sich bitte zwischen den 1.000€ **in 6 Monaten** (Spalte A) und dem höheren Betrag **in 12 Monaten** (Spalte B). Der Betrag links bleibt in allen Zeilen gleich, nur der Betrag rechts steigt von Zeile zu Zeile.

	Sie erhalten…		Sie erhalten…
	In 6 Monaten		**In 12 Monaten**
	A	**oder**	**B**
1	1.000 €		1.000 €
2	1.000 €		1.010 €
3	1.000 €		1.020 €
4	1.000 €		1.030 €
5	1.000 €		1.050 €
6	1.000 €		1.075 €
7	1.000 €		1.100 €
8	1.000 €		1.150 €
9	1.000 €		1.200 €
10	1.000 €		1.300 €
11	1.000 €		1.400 €
12	1.000 €		1.500 €
13	1.000 €		1.750 €
14	1.000 €		2.000 €

Interviewer: Starten Sie bitte mit Zeile 1 und der Frage: „Wie entscheiden Sie sich? 1.000€ in 6 Monaten oder 1.000€ in 12 Monaten?“. Entscheidet sich der Befragte für Option A, geht es weiter mit Zeile zwei und der Frage „Wie entscheiden Sie sich? 1.000€ in 6 Monaten oder 1.010€ in 12 Monaten?“ usw. Das Experiment ist beendet, sobald der Befragte sich das erste Mal für Option B entscheidet. Bitte notieren Sie die Nummer der Zeile, in der sich der Befragte das erste Mal für Option B entschieden hat.

Option B wurde gewählt in Zeile Nummer: ☐

Für die folgenden Fragen würde ich Ihnen jetzt gerne das Gerät übergeben und Sie bitten, die entsprechenden Antworten selbst auszufüllen. Bitte antworten Sie ganz ehrlich. Ich versichere Ihnen, dass Ihre Angaben absolut vertraulich und anonym behandelt werden. Die Auswertung der Daten wird nur auf Basis aller durchgeführten Interviews erfolgen, eine Zuordnung Ihrer Angaben zu Ihrer Person ist nicht möglich.

Bei Fragen stehe ich Ihnen gerne zur Verfügung.

Interviewer: Bitte für diesen Komplex das Gerät zum Selbstausfüllen an die Befragte übergeben!

10 Sie finden weiter unten eine Gegenüberstellung einiger gegensätzlicher Aussagen über Staat und Politik. Bitte geben Sie jeweils an, welcher der Aussagen sie am ehesten zustimmen.

Den Politikern in Deutschland kann man im Großen und Ganzen vertrauen	□	□	□	□	□	Ich habe überhaupt kein Vertrauen in die Politiker in Deutschland
Die meisten Politiker in Deutschland handeln im Sinne des Allgemeinwohls	□	□	□	□	□	Die meisten Politiker in Deutschland bedienen lediglich die Interessen einzelner Gruppen
Den meisten Politikern geht es bei Ihren Entscheidungen darum, was langfristig am besten für das Land ist	□	□	□	□	□	Die meisten Politiker denken bei ihren Entscheidungen nur bis zur nächsten Wahl
Der Staat geht gewissenhaft mit Steuergeldern um	□	□	□	□	□	Der Staat verschwendet Steuergelder
Der Staat sollte für gleichwertige Lebensverhältnisse sorgen	□	□	□	□	□	Der Staat sollte in die Lebensverhältnisse der Menschen nicht eingreifen

11 Wenn am kommenden Sonntag Bundestagswahl wäre, welche Partei würden Sie dann mit Ihrer Zweitstimme wählen?

CDU/CSU	□
SPD	□
Bündnis 90/Die Grünen	□
FDP	□
Piraten	□
Linkspartei/PDS	□
NPD	□
Andere Partei	□
Würde nicht wählen	□

12 Sind Sie Mitglied in einer Gewerkschaft?

Ja	□
Nein	□

13 Haben Sie Kinder? Wenn ja, wie viele?

Ja	□	Bitte Anzahl eingeben: ____
Nein	□	

14 Wie zufrieden sind Sie, alles in allem, mit Ihrer wirtschaftlichen Situation?

Ganz und gar zufrieden	□	□	□	□	□	Ganz und gar unzufrieden

15 Anschließend würden wir Ihnen gerne einige Wissensfragen stellen. Bitte kreuzen Sie diejenige Antwort an, die Sie für richtig halten.

Wie hoch war 2012 die Neuverschuldung des Bundes in Prozent des Bruttoinlandsprodukts ungefähr?	1% □	3% □	5% □	7% □
Wie hoch ist derzeit der Zins auf langfristige Staatsanleihen (Laufzeit: 10 Jahre) ungefähr?	1,5% □	3% □	5,5% □	10% □
Wie hoch war die Inflationsrate in 2012 ungefähr?	0% □	2% □	5% □	10% □

Anfang 2013 wurde der Beitragssatz zur gesetzlichen Rentenversicherung gesenkt. Im Ergebnis sinkt dadurch die Abgabenbelastung. Wir möchten Ihnen nun einige Fragen zu Ihrer Reaktion auf die Beitragssatzsenkung stellen.

16 Um Ihnen im Folgenden die passenden Fragen stellen zu können, benötigen wir eine Information zu Ihrer beruflichen Situation. Was trifft auf Sie am ehesten zu?

Arbeiter(in) oder Angestellte(r)	□
Auszubildende(r)	□
Arbeitssuchende(r)	□
Unternehmer(in), Selbstständige(r) oder Freiberufler(in)	□
Beamter/in	□
Schüler(in) oder Student(in)	□
Geringfügig oder unregelmäßig Beschäftigte(r)	□
Rentner(in) oder Pensionär(in)	□
Sonstiges	□

[Automatische Filterung: Die folgende Frage war nur dann zu beantworten, wenn bei Frage 16 „Unternehmer(in), Selbstständige(r) oder Freiberufler(in)“ oder „Geringfügig oder unregelmäßig Beschäftigte(r)“ gewählt wurde]

17 Zahlen Sie zurzeit in die gesetzliche Rentenversicherung ein, um für sich selber Rentenversicherungsansprüche zu erwerben?

Ja	□
Nein	□

[Automatische Filterung: Die Fragen 18 bis 22 waren nur dann zu beantworten, wenn bei Frage 16 „Arbeiter(in) oder Angestellte(r)“ oder „Auszubildende(r)“ oder bei Frage 17 mit „Ja“ angegeben wurde]

18 Wenn Sie an die Finanzsituation Ihres Haushaltes denken, wofür verwenden Sie das durch die Beitragssatzsenkung zusätzlich bereitgestellte Haushaltseinkommen am ehesten? Um zusätzliche Ausgaben zu tätigen, um Schulden abzubauen oder um zu sparen?

Um Ausgaben zu tätigen	□
Um Schulden abzubauen	□
Um zu sparen	□

19 Was denken Sie, wird die aktuelle Senkung der Rentenversicherungsbeiträge in Zukunft zu höheren Rentenversicherungsbeiträgen führen?

Ja	□
Nein	□

20 Und denken Sie, dass die aktuelle Senkung der Rentenversicherungsbeiträge in Zukunft zu niedrigeren Renten aus der gesetzlichen Rentenversicherung führen wird?

Ja	□
Nein	□

21 Haushalte haben verschiedene Arten, Ihr Haushaltsbudget zu planen. Was würde Ihre Vorgehensweise am ehesten beschreiben?

Ich versuche, monatlich einen festen Betrag zu sparen oder zum Rückzahlen von Schulden zu verwenden.	□
Ich versuche, monatlich einen festen Betrag für Ausgaben zu verwenden.	□
Nichts davon	□

22 Wir möchten Ihnen noch einige allgemeine Fragen stellen.

Was denken Sie, wie wird Ihre eigene wirtschaftliche Lage in einem Jahr sein?	Wesentlich schlechter als heute	□	□	□	□	□	Wesentlich besser als heute
Was denken Sie, wie wird die Inflation in Deutschland in den nächsten fünf Jahren sein?	Wesentlich niedriger als heute	□	□	□	□	□	Wesentlich höher als heute
Was denken Sie, wie sicher sind Sparanlagen heute in Deutschland im Vergleich zu vor zehn Jahren?	Wesentlich unsicherer als vor zehn Jahren	□	□	□	□	□	Wesentlich sicherer als vor zehn Jahren
Was denken Sie, wie sehr lohnen sich Sparanlagen heute in Deutschland im Vergleich zu vor zehn Jahren?	Wesentlich weniger als vor zehn Jahren	□	□	□	□	□	Wesentlich mehr als vor zehn Jahren

[Automatische Filterung: Die folgende Frage war nur dann zu beantworten, wenn bei Frage 16 „Arbeiter(in) oder Angestellte(r)“, „Auszubildende(r)“, „Arbeitssuchende(r)“, „Unternehmer(in), Selbstständige(r) oder Freiberufler(in)“ oder „Geringfügig oder unregelmäßig Beschäftigte(r)“ angegeben wurde]

23 Wenn Sie über Umfang und Intensität Ihres beruflichen Engagements entscheiden, spielt dabei im Allgemeinen die Steuer- und Abgabenbelastung eine Rolle?

Ja	□
Nein	□

[Automatische Filterung: Die folgende Frage war nur dann zu beantworten, wenn bei Frage 23 „Ja“ angegeben wurde]

24 Ganz allgemein gesprochen, welchen Einfluss hat die Senkung der Rentenversicherungsbeiträge auf Ihr berufliches Engagement?

Mein berufliches Engagement ist jetzt wesentlich kleiner	□	□	□	□	□	Mein berufliches Engagement ist jetzt wesentlich größer

Bitte übergeben Sie das Gerät wieder an die Interviewerin / den Interviewer!

A.2 The questionnaire (English translation)

The following table contains information on annual public expenditures by policy areas in euros per capita, and also as proportion of total state expenditures. The table focuses on important spending categories.

Interviewer: Please give the interviewee sufficient time to study the table attentively.

Policy area	Description	Spending per capita	Proportion on total
Social security	e.g. unemployment compensation, social welfare, family and youth welfare	7,660€	56.6%
Education	e.g. public schools and universities	1,125€	8.3%
Public safety	e.g. police, justice system	455€	3.3%
Infrastructure	e.g. road and town construction	350€	2.6%
Economic development	e.g. promotion of small- and medium-sized companies, investment allowances, financial support for disadvantaged regions	335€	2.5%
Defence	e.g. military equipment, service pay, defence administration	335€	2.5%
Total		10,260€	75.8%

Assume that you could modify public expenditures and revenues according to your wishes. For example, presume that you could increase public spending in any particular policy area. In this case, however, you would need either to incur additional public debts, increase taxes, or cut public spending in another policy area. Or in order to decrease public spending in a policy area, you must either reduce public debts, decrease taxes, or increase public spending in another policy area. In the following, please state for which of the aforementioned policy areas should public spending be increased or decreased. Also state how a potential increase in public spending should be financed or for what the excess funds should be used.

Interviewer: Please make sure that the interviewee has understood the task. Otherwise, please repeat and explain.

1 In which policy areas should the state spend **more**?

The state should spend more on (check as many as apply)…	
… social security	□
… education	□
… public safety	□
... infrastructure	□
… economic development	□
… defence	□
… other areas	□
The state should <u>not</u> spend **more**	□

*Note: If 'The state should <u>not</u> spend **more**' is checked then no other option can be mentioned.*

*[Automatic filtering: The following question is only applicable if the respondent would like to **increase** public spending in at least one policy area.]*

1A The increase in public spending should be financed via (check as many as apply)…

… a tax increase	□
… incurrence of public debt	□
… a decrease in public spending in another policy area (see below)	□

2 In which policy areas should the state spend **less**?

The state should spend less on (check as many as apply)…	
… social security	□
… education	□
… public safety	□
... infrastructure	□
… economic development	□
… defence	□
… other areas	□
The state should not spend **less**	□

*Note: If 'The state should not spend **less**' is checked than no other option can be mentioned.*

[Automatic filtering: The following question is only applicable if the respondent would like to ***decrease*** *public spending in at least one policy area.*]

2A The excess funds should be used for (check as many as apply)…

… a tax decrease	□
… a reduction of public debt	□
… an increase in public spending in another policy area (see above)	□

Interviewer: Please control for the consistency of replies. If a respondent opts for additional spending in one area and answers in question 1A that this increase in spending should be financed by cutting expenditures in another area, this implies that one of the first seven options in question 2 need to be chosen.

3 According to the latest tax estimation, the state is going to increase revenues by a further €23 billion within the next four years. In your opinion, how should the state use the additional revenues? Please name at maximum those three alternatives you prefer the most.

	1st choice	2nd choice	3rd choice
Decrease taxes	□	□	□
Reduce public debt	□	□	□
Increase public spending on …			
… social security	□	□	□
… public safety and order	□	□	□
… education	□	□	□
… infrastructure	□	□	□
… economic development	□	□	□
… defence	□	□	□
… other areas	□	□	□
No response	□	□	□

Note: Please check only one box per column

4 At the end of 2012 the outstanding amount of public debt in Germany was above €2 trillion. This equals €26,000 per inhabitant or 80% of gross domestic product (GDP), respectively. In your opinion, should the state reduce public debts, keep the amount of public debt at its current level, or incur additional public debts?

Reduce debt	□
Keep debt at current level	□
Incur additional debt	□

*[Automatic filtering: The following question is only applicable if the interviewed person would like to **reduce public debt**]*

4A What should the state do to reduce public debt? Please name a maximum of three alternatives you prefer the most.

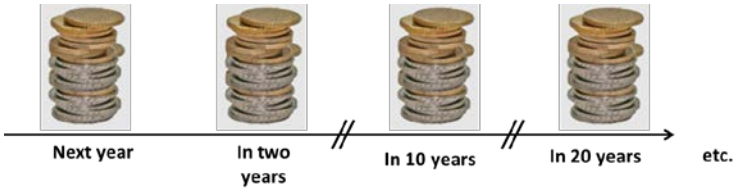
	1st choice	2nd choice	3rd choice
Increase taxes	□	□	□
Cut public spending on …			
… social security	□	□	□
… public safety	□	□	□
… education	□	□	□
… infrastructure	□	□	□
… economic development	□	□	□
… defense	□	□	□
… other areas	□	□	□
No response	□	□	□

Note: Please check only one box per column

*[Automatic filtering: The following question is only applicable if the interviewed person would like to **reduce public debt**]*

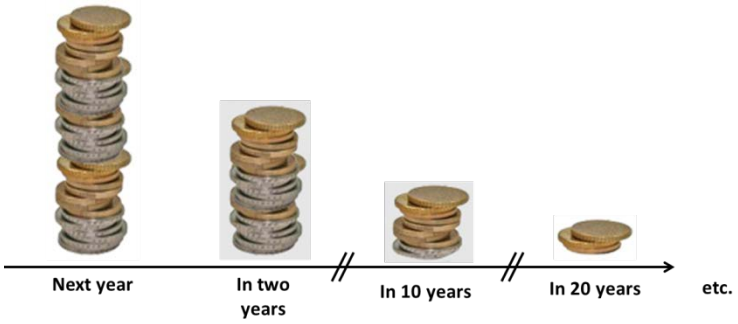
4B Assume you could choose between three alternatives for public debt reduction (suppose that the reduction of public debt is illustrated by means of the money piles shown below. A small money pile means that little debt is reduced, a big money pile means that much debt is reduced):

Option A: Debt reduction is distributed evenly over the next years, i.e., **in each year a similar amount of debt** is reduced.



Option B: The extent of debt reduction increases over the next years, i.e., **in the near future a smaller part of debt** is reduced and **in the far future a larger part of debt** is reduced.

Option C: The extent of debt reduction decreases over the next years, i.e., **in the near future a larger part of debt** is reduced and **in the far future a smaller part of debt** is reduced.



For which option would you decide?

Option A: **In each year a similar amount of debt** should be reduced	□
Option B: **In the near future a smaller part of debt** should be reduced and **in the far future a larger part of debt** should be reduced	□
Option C: **In the near future a larger part of debt** should be reduced and **in the far future a smaller part of debt** should be reduced	□
Don't know	□

*[Automatic filtering: The following question was only applicable if the interviewed expressed that the state should **take on additional public debt**]*

4C What should the state do with the additional funds? Please name a maximum of three alternatives you prefer the most.

	1st choice	2nd choice	3rd choice
Decrease taxes	□	□	□
Increase public spending on …			
… social security	□	□	□
… public safety	□	□	□
… education	□	□	□
… infrastructure	□	□	□
… economic development	□	□	□
… defence	□	□	□
… other areas	□	□	□
No response	□	□	□

Note: Please check only one box per column

5 In 2016 the federal debt brake comes into force. From this moment on, the federal government can take on almost no additional public debt. Exemptions are allowed only in times of economic crises or natural disasters. What is your opinion on the debt brake?

I am against the debt brake – the incurrence of public debt should not be restricted	□
I am in favour of the debt brake in the aforementioned form	□
The debt brake is still not enough – the government should not be allowed to incur public debt at all	□
No response	□

6 Between 2008 and 2012, we have seen a rapid acceleration of public debt. Did this increasing reliance on debt financing lead to changes in the way you spend or save?

Yes, I now spend **a smaller proportion** of my income and save **a larger proportion**	□
Yes, I spend **a larger proportion** of my income and save **a smaller proportion**	□
No, I did not change my behaviour in consequence to the rapid increase in public debt	□

7 Next, we would like to conduct some experiments concerned with financial decisions. In the first experiment, you make your decisions according to the following table *(Interviewer: please show the table below)*. In each row you see two alternatives. You can choose between a certain payoff and participation in a lottery, which follows the principle 'all or nothing': You have a 50% chance of winning €1,000 and a 50% chance of winning €0.

You start in row 1 and then proceed row by row. In each row, please choose between the certain payoff (column A) and participation in the lottery (column B). The lottery remains the same in all rows. Only the certain payoff increases from row to row.

	You get…		You get…
	Safe		**1,000€ or nothing** Chance of winning 50:50
	A	**or**	**B**
1	€0		Chance of winning €1,000/€0
2	€100		Chance of winning €1,000/€0
3	€200		Chance of winning €1,000/€0
4	€300		Chance of winning €1,000/€0
5	€400		Chance of winning €1,000/€0
6	€500		Chance of winning €1,000/€0
7	€600		Chance of winning €1,000/€0
8	€700		Chance of winning €1,000/€0
9	€800		Chance of winning €1,000/€0
10	€900		Chance of winning €1,000/€0

Interviewer: Please start with row 1 and the question 'What do you choose? €0 safe or chance of winning €1,000/€0?'. If the interviewee chooses option B, please proceed to row 2 and the question 'How do you choose? €100 safe or chance of winning €1,000/€0?'. The experiment ends when the interviewee chooses option A for the first time. Please write down the number of the row where the respondent chose option A for the first time.

Option A was first chosen in row number: ☐

8 In the next experiment you decide according to the following table (*Interviewer: please show the table below*). In each row, you see two alternatives. You can choose between a certain payoff of €1,000, which is paid to you **immediately** and a higher certain payoff, which will be paid to you **in 6 months**.

You start in row 1 and then proceed row by row. In each row, please choose between the payoff of €1,000 to be paid **immediately** (column A) and the higher payoff to be paid **in 6 months** (column B). The payoff on the left remains the same in all rows. Only the payoff on the right increases from row to row.

	You get…		You get…
	Immediately		**In 6 month**
	A	**or**	**B**
1	€1,000		€1,000
2	€1,000		€1,010
3	€1,000		€1,020
4	€1,000		€1,030
5	€1,000		€1,050
6	€1,000		€1,075
7	€1,000		€1,100
8	€1,000		€1,150
9	€1,000		€1,200
10	€1,000		€1,300
11	€1,000		€1,400
12	€1,000		€1,500
13	€1,000		€1,750
14	€1,000		€2,000

Interviewer: Please start with row 1 and the question 'What do you choose? €1,000 immediately or €1,000 in 6 months?'. If the interviewee chooses option A, please proceed to row 2 and the question 'What do you choose? €1,000 immediately or €1,010 in 6 months?'. The experiment ends when the interviewee chooses option B for the first time. Please write down the number of the row where the interviewee chose option B for the first time.

Option B was first chosen in row number: ☐

9 In the last experiment, you decide according to the following table (*Interviewer: please show the table below*). In each row, you see two alternatives. You can choose between a certain payoff of €1,000, which is paid to you **in 6 months** and a higher certain payoff, which will be paid to you **in 12 months**.

You start in row 1 and then proceed row by row. In each row, please choose between the payoff of €1,000 to be paid **in 6 months** (column A) and the higher payoff to be paid **in 12 months** (column B). The payoff on the left remains the same in all rows. Only the payoff on the right increases from row to row.

	You get…		You get…
	In 6 month		**In 12 month**
	A	**or**	**B**
1	€1,000		€1,000
2	€1,000		€1,010
3	€1,000		€1,020
4	€1,000		€1,030
5	€1,000		€1,050
6	€1,000		€1,075
7	€1,000		€1,100
8	€1,000		€1,150
9	€1,000		€1,200
10	€1,000		€1,300
11	€1,000		€1,400
12	€1,000		€1,500
13	€1,000		€1,750
14	€1,000		€2,000

Interviewer: Please start with row 1 and the question 'What do you choose? €1,000 in 6 months or €1,000 in 12 months?'. If the interviewee chooses option A, please proceed to row 2 and the question 'What do you choose? €1,000 in 6 months or €1,010 in 12 months?'. The experiment ends when the interviewee chooses option B for the first time. Please write down the number of the row in which the interviewee chose option B for the first time.

Option B was first chosen in row number: ☐

For the following questions I will hand you the console so that you can answer the questions on your own. Please answer honestly. I assure you that all your answers are treated confidentially and anonymously. Data evaluation will be based on all interviews so that nobody will be able to associate your answers with you.

If you have questions, I would be happy to offer my help.

Interviewer: Please hand over the console to the interviewee.

10 Below you find a battery of contradictory statements about the state and politics. Please indicate with which statement you agree the most.

All in all, I have confidence in politicians in Germany	□	□	□	□	□	I do not have any confidence in politicians in Germany
Most politicians in Germany act in line with the general public's interest	□	□	□	□	□	Most politicians in Germany only serve the interests of particular groups
Most politicians are concerned about the country's long-term well-being	□	□	□	□	□	Most politicians are only concerned about the next elections
The government manages tax revenues conscientiously	□	□	□	□	□	The government wastes tax revenues
The state should ensure equal living conditions	□	□	□	□	□	The state should not interfere with people's living conditions

11 Which party would you vote for if federal elections were held this Sunday?

CDU/CSU	□
SPD	□
Bündnis 90/Die Grünen	□
FDP	□
Piraten	□
Linkspartei/PDS	□
NPD	□
Other party	□
I would not vote	□

12 Are you a union member?

Yes	□
No	□

13 Do you have children? If yes, how many children do you have?

Yes	□	Please state how many: ____
No	□	

14 How satisfied are you with your overall economic situation?

Absolutely satisfied	□	□	□	□	□	Absolutely dissatisfied

15 We would now like to ask some questions related to knowledge. Please indicate the answer you deem correct.

How large was the budget deficit of the federal government in 2012?	1% □	3% □	5% □	7% □
What is the current interest rate on long-term government bonds (maturity 10 years), approximately?	1.5% □	3% □	5.5% □	10% □
How large was the inflation rate in 2012, approximately?	0% □	2% □	5% □	10% □

At the beginning of 2013, contribution rates to the statutory pension system have been reduced. In effect, this reduces the overall tax burden. We are interested in your responses to the rate cut.

16 To ask you the correct questions, we need information on your employment situation. Which answer best applies to you?

Employee	□
Apprentice	□
Unemployed	□
Employer	□
Public servant	□
Pupil	□
Insignificantly employed	□
Pensioner	□
Other	□

[Automatic filtering: the following question is only applicable if question 16 was answered by 'Employer' or 'Insignificantly employed']

17 Do you currently contribute to the public pension system in order to acquire your own pension entitlements?

Yes	□
No	□

[Automatic filtering: questions 18 to 22 are only applicable if question 16 was answered by 'Employee' or 'Apprentice' or question 17 was answered by 'Yes']

18 Thinking about your household's financial situation, will you use the additional budget mostly to increase spending, mostly to increase saving, or mostly to pay off debt?

Increase spending	□
Repay debt	□
Increase savings	□

19 Will the recent cut in pension insurance contribution rates lead to higher contribution rates in the future?

Yes	□
No	□

20 Will the recent cut in pension insurance contribution rates lead to lower pension payments?

Yes	□
No	□

21 Some households have different approaches to household budgeting. What best describes yours?

I try to use a fixed amount to save or to repay debt	□
I try to use a fixed amount for expenditures	□
Something else	□

22 We would now like to ask you some general questions.

How do you expect your economic situation to be in one year?	Much worse than today	□	□	□	□	□	Much better than today
In your opinion, how will inflation develop over the next five years?	Much lower than today	□	□	□	□	□	Much higher than today
How secure do you think savings are in Germany today in comparison to ten years ago?	Much more insecure than ten years ago	□	□	□	□	□	Much more secure than ten years ago
How profitable do you think savings are in Germany today compared with ten years ago?	Much less than ten years ago	□	□	□	□	□	Much more than ten years ago

[Automatic filtering: The following question is only applicable if question 16 was answered by 'Employee', 'Apprentice', 'Unemployed', 'Employer' or 'Insignificantly employed']

23 Does the tax burden usually matter for your job-related decisions?

Yes	□
No	□

[Automatic filtering: The following question is only applicable if question 23 was answered 'Yes']

24 What impact does the contribution rate cut have on your general job-related efforts?

I substantially decreased my job-related efforts	□	□	□	□	□	I substantially increased my job-related efforts

Please hand the console back to the interviewer.

Appendix B: Descriptive statistics[1]

Item 1: On which policy areas should the state spend more?

	Proportion	S.E.	C.I.	Count
Social security	0.427	0.011	[0.406, 0.449]	872
Education	0.606	0.011	[0.585, 0.627]	1,238
Public security and order	0.316	0.010	[0.296, 0.337]	646
Infrastructure	0.179	0.008	[0.162, 0.195]	365
Economic development	0.208	0.009	[0.190, 0.225]	424
Defense	0.016	0.003	[0.011, 0.022]	33
Other areas	0.101	0.007	[0.088, 0.114]	206
State should not spend more	0.155	0.008	[0.139, 0.170]	316
No response	0.000			0

Notes: Multiple answers were possible. Table is based on 2,042 responses.

Item 1A: How should the increase in public spending be financed?

	Proportion	S.E.	C.I.	Count
Tax increase	0.098	0.007	[0.084, 0.113]	170
Incurrence of public debt	0.122	0.008	[0.107, 0.138]	211
Decrease in public spending	0.858	0.008	[0.842, 0.875]	1,481
No response	0.000			0

Notes: Multiple answers were possible. Table is based on 1,726 responses.

[1] Tables report standard errors (S.E.) and confidence intervals (C.I.) for proportions. Confidence intervals are based on 95 percent level of confidence. Proportions may not sum to one due to rounding error, or because multiple answers were possible.

Item 2: On which policy areas should the state spend less?

	Proportion	S.E.	C.I.	Count
Social security	0.120	0.007	[0.106, 0.135]	246
Education	0.009	0.002	[0.005, 0.013]	19
Public security and order	0.026	0.004	[0.019, 0.033]	54
Infrastructure	0.069	0.006	[0.058, 0.080]	140
Economic development	0.159	0.008	[0.143, 0.175]	325
Defense	0.615	0.011	[0.594, 0.636]	1,256
Other areas	0.362	0.011	[0.341, 0.383]	739
State should not spend less	0.105	0.007	[0.092, 0.118]	214
No response	0.000			0

Notes: Multiple answers were possible. Table is based on 2,042 responses.

Item 2A: How should the excess funds be used?

	Proportion	S.E.	C.I.	Count
Tax decrease	0.354	0.011	[0.332, 0.376]	647
Reduction of public debt	0.483	0.012	[0.460, 0.506]	883
Increase in public spending	0.503	0.012	[0.480, 0.526]	919
No response	0.000			0

Notes: Multiple answers were possible. Table is based on 1,828 responses.

Item 3: How should the state use the additional 23 bn €? (Proportions)

	1st choice	2nd choice	3rd choice
Decrease taxes	0.302	0.137	0.118
Reduce public debt	0.200	0.203	0.138
Increase public spending on …			
… social security	0.121	0.136	0.108
… public safety and order	0.055	0.115	0.103
… education	0.218	0.211	0.143
… infrastructure	0.018	0.047	0.079
… economic development	0.027	0.064	0.080
… defense	0.006	0.011	0.021
… other areas	0.021	0.028	0.095
No response	0.032	0.049	0.115
Total	1.000	1.000	1.000

Item 3: How should the state use the additional 23 bn €? (S.E.)

	1st choice	2nd choice	3rd choice
Decrease taxes	0.010	0.008	0.007
Reduce public debt	0.009	0.009	0.008
Increase public spending on …			
… social security	0.007	0.008	0.007
… public safety and order	0.005	0.007	0.007
… education	0.009	0.009	0.008
… infrastructure	0.003	0.005	0.006
… economic development	0.004	0.005	0.006
… defense	0.002	0.002	0.003
… other areas	0.003	0.004	0.006
No response	0.004	0.005	0.007
Total			

Item 3: How should the state use the additional 23 bn €? (C.I.)

	1st choice	2nd choice	3rd choice
Decrease taxes	[0.282, 0.322]	[0.122, 0.152]	[0.104, 0.132]
Reduce public debt	[0.182, 0.217]	[0.185, 0.220]	[0.123, 0.153]
Expand public expenditures on …			
… social security	[0.107, 0.136]	[0.121, 0.151]	[0.095, 0.122]
… public safety and order	[0.045, 0.065]	[0.101, 0.128]	[0.090, 0.117]
… education	[0.200, 0.236]	[0.193, 0.228]	[0.128, 0.158]
… infrastructure	[0.012, 0.024]	[0.038, 0.056]	[0.068, 0.091]
… economic development	[0.020, 0.034]	[0.053, 0.074]	[0.069, 0.092]
… defense	[0.003, 0.009]	[0.006, 0.015]	[0.014, 0.027]
… other areas	[0.014, 0.027]	[0.021, 0.036]	[0.082, 0.108]
No response	[0.024, 0.039]	[0.040, 0.059]	[0.101, 0.128]
Total			

Item 3: How should the state use the additional 23 bn €? (Counts)

	1st choice	2nd choice	3rd choice
Decrease taxes	617	279	240
Reduce public debt	408	414	282
Increase public spending on …			
… social security	248	278	221
… public safety and order	113	234	211
… education	445	430	292
… infrastructure	37	96	162
… economic development	55	130	164
… defense	12	22	42
… other areas	42	58	194
No response	65	101	240
Total	2,042	2,042	2,042

Item 4: What should the state do with public debt?

	Proportion	S.E.	C.I.	Count
Reduce debt	0.747	0.010	[0.728, 0.766]	1,525
Keep debt at current level	0.237	0.009	[0.219, 0.255]	484
Take on additional debt	0.016	0.003	[0.011, 0.022]	33
No response	0.000			0
Total	1.000			2,042

Item 4A: How should the state reduce public debt? (Proportions)

	1st choice	2nd choice	3rd choice
Increase taxes	0.049	0.041	0.117
Cut public spending on …			
… social security	0.110	0.055	0.064
… public safety and order	0.018	0.040	0.030
… education	0.023	0.025	0.018
… infrastructure	0.018	0.066	0.052
… economic development	0.075	0.138	0.073
… defense	0.410	0.201	0.058
… other areas	0.165	0.210	0.161
No response	0.133	0.224	0.428
Total	1.000	1.000	1.000

Item 4A: How should the state reduce public debt? (Standard errors)

	1st choice	2nd choice	3rd choice
Increase taxes	0.006	0.005	0.008
Cut public spending on …			
… social security	0.008	0.006	0.006
… public safety and order	0.003	0.005	0.004
… education	0.004	0.004	0.003
… infrastructure	0.003	0.006	0.006
… economic development	0.007	0.009	0.007
… defense	0.013	0.010	0.006
… other areas	0.009	0.010	0.009
No response	0.009	0.011	0.013
Total			

Item 4A: How should the state reduce public debt? (Confidence intervals)

	1st choice	2nd choice	3rd choice
Increase taxes	[0.038, 0.059]	[0.031, 0.051]	[0.101, 0.133]
Cut public spending on …			
… social security	[0.094, 0.125]	[0.044, 0.067]	[0.051, 0.076]
… public safety and order	[0.012, 0.025]	[0.030, 0.050]	[0.021, 0.038]
… education	[0.015, 0.030]	[0.017, 0.033]	[0.012, 0.025]
… infrastructure	[0.011, 0.024]	[0.053, 0.078]	[0.041, 0.064]
… economic development	[0.062, 0.088]	[0.121, 0.156]	[0.060, 0.086]
… defense	[0.386, 0.435]	[0.181, 0.221]	[0.046, 0.069]
… other areas	[0.146, 0.183]	[0.189, 0.230]	[0.143, 0.180]
No response	[0.116, 0.150]	[0.203, 0.245]	[0.403, 0.452]
Total			

Item 4A: How should the state reduce public debt? (Count)

	1st choice	2nd choice	3rd choice
Increase taxes	74	62	178
Cut public spending on …			
… social security	167	84	97
… public safety and order	28	61	45
… education	35	38	28
… infrastructure	27	100	80
… economic development	114	211	111
… defense	626	307	88
… other areas	251	320	246
No response	203	342	652
Total	1,525	1,525	1,525

Item 4B: How should the burden of debt reduction be distributed over time?

	Proportion	S.E.	C.I.	Count
Evenly	0.622	0.012	[0.598, 0.647]	949
First less, then more	0.108	0.008	[0.092, 0.123]	164
First more, then less	0.205	0.010	[0.184, 0.225]	312
No response	0.066	0.006	[0.053, 0.078]	100
Total	1.000			1,525

Item 4C: For what purpose should the state incur additional debt? (Proportions)

	1st choice	2nd choice	3rd choice
Cut taxes	0.303	0.061	0.091
Increase public spending on …			
… social security	0.303	0.212	0.091
… public safety and order		0.182	0.091
… education	0.242	0.182	0.152
… infrastructure		0.091	0.030
… economic development	0.030	0.121	0.152
… defense			0.030
… other areas	0.030	0.061	0.212
No response	0.091	0.091	0.152
Total	1.000	1.000	1.000

Item 4C: For what purpose should the state incur additional debt? (Standard errors)

	1st choice	2nd choice	3rd choice
Cut taxes	0.081	0.042	0.051
Increase public spending on …			
… social security	0.081	0.072	0.051
… public safety and order		0.068	0.051
… education	0.076	0.068	0.063
… infrastructure		0.051	0.030
… economic development	0.030	0.058	0.063
… defense			0.030
… other areas	0.030	0.042	0.072
No response	0.051	0.051	0.063
Total			

Item 4C: For what purpose should the state incur additional debt? (Confidence intervals)

	1st choice	2nd choice	3rd choice
Cut taxes	[0.138, 0.469]	[-0.025, 0.147]	[-0.013, 0.194]
Increase public spending on …			
… social security	[0.138, 0.469]	[0.065, 0.359]	[-0.013, 0.194]
… public safety and order		[0.043, 0.321]	[-0.013, 0.194]
… education	[0.088, 0.397]	[0.043, 0.321]	[0.022, 0.281]
… infrastructure		[-0.013, 0.194]	[-0.031, 0.092]
… economic development	[-0.031, 0.092]	[0.004, 0.239]	[0.022, 0.281]
… defense			[-0.031, 0.092]
… other areas	[-0.031, 0.092]	[-0.025, 0.147]	[0.065, 0.359]
No response	[-0.013, 0.194]	[-0.013, 0.194]	[0.022, 0.281]
Total			

Item 4C: For what purpose should the state incur additional debt? (Counts)

	1st choice	2nd choice	3rd choice
Cut taxes	10	2	3
Increase public spending on …			
… social security	10	7	3
… public safety and order	0	6	3
… education	8	6	5
… infrastructure	0	3	1
… economic development	1	4	5
… defense	0	0	1
… other areas	1	2	7
No response	3	3	5
Total	33	33	33

Item 5: What is your opinion on the debt brake?

	Proportion	S.E.	C.I.	Count
I am against the debt brake	0.081	0.006	[0.069, 0.093]	165
I am in favor of the debt brake	0.606	0.011	[0.585, 0.627]	1,238
The debt brake is still not enough	0.170	0.008	[0.154, 0.187]	348
No response	0.143	0.008	[0.127, 0.158]	291
Total	1.000			2,042

Item 6: Did the recent increase in public induce changes in your spending behavior?

	Proportion	S.E.	C.I.	Count
Spend less/save more	0.070	0.006	[0.059, 0.081]	143
Spend more/save less	0.176	0.008	[0.160, 0.193]	360
No change	0.754	0.010	[0.735, 0.772]	1,539
No response	0.000			0
Total	1.000			2,042

Item 7: Which safe amount do you require to forego the 50/50 chance to win 1,000 €?

	Proportion	S.E.	C.I.	Count
0 € safe	0.088	0.006	[0.076, 0.100]	180
100 € safe	0.131	0.007	[0.117, 0.146]	268
200 € safe	0.067	0.006	[0.056, 0.078]	137
300 € safe	0.075	0.006	[0.063, 0.086]	153
400 € safe	0.071	0.006	[0.060, 0.082]	145
500 € safe	0.177	0.008	[0.161, 0.194]	362
600 € safe	0.036	0.004	[0.028, 0.044]	74
700 € safe	0.030	0.004	[0.023, 0.038]	62
800 € safe	0.019	0.003	[0.013, 0.024]	38
900 € safe	0.256	0.010	[0.237, 0.275]	523
Never accept	0.049	0.005	[0.040, 0.058]	100
No response	0.000			0
Total	1.000			2,042

Item 8: For which amount paid in six month are you willing to forego payment today?

	Proportion	S.E.	C.I.	Count
1,000 €	0.000			0
1,010 €	0.034	0.004	[0.026, 0.042]	69
1,020 €	0.016	0.003	[0.010, 0.021]	32
1,030 €	0.015	0.003	[0.010, 0.020]	31
1,050 €	0.025	0.003	[0.019, 0.032]	52
1,075 €	0.019	0.003	[0.013, 0.024]	38
1,100 €	0.047	0.005	[0.037, 0.056]	95
1,150 €	0.019	0.003	[0.013, 0.024]	38
1,200 €	0.046	0.005	[0.036, 0.055]	93
1,300 €	0.046	0.005	[0.036, 0.055]	93
1,400 €	0.030	0.004	[0.023, 0.038]	62
1,500 €	0.079	0.006	[0.068, 0.091]	162
1,750 €	0.013	0.003	[0.008, 0.018]	27
2,000 €	0.413	0.011	[0.392, 0.435]	844
Never accept	0.199	0.009	[0.181, 0.216]	406
No response	0.000			0
Total	1.000			2,042

Item 9: For which amount paid in twelve month would you forego payment in six month?

	Proportion	S.E.	C.I.	Count
1,000 €	0.000			0
1,010 €	0.025	0.003	[0.019, 0.032]	52
1,020 €	0.022	0.003	[0.015, 0.028]	44
1,030 €	0.018	0.003	[0.012, 0.023]	36
1,050 €	0.022	0.003	[0.016, 0.028]	45
1,075 €	0.019	0.003	[0.013, 0.025]	39
1,100 €	0.025	0.003	[0.019, 0.032]	52
1,150 €	0.020	0.003	[0.014, 0.026]	41
1,200 €	0.038	0.004	[0.029, 0.046]	77
1,300 €	0.042	0.004	[0.033, 0.051]	86
1,400 €	0.026	0.004	[0.019, 0.033]	53
1,500 €	0.105	0.007	[0.092, 0.119]	215
1,750 €	0.016	0.003	[0.011, 0.022]	33
2,000 €	0.449	0.011	[0.427, 0.470]	916
Never accept	0.173	0.008	[0.156, 0.189]	353
No response	0.000			0
Total	1.000			2,042

Item 10: Please rate the following (Proportions)

	-2	-1	0	1	2	
I have confidence in politicians	0.309	0.298	0.222	0.147	0.024	I do not have confidence in politicians
Most politicians serve general public interest	0.300	0.319	0.216	0.139	0.026	Most politicians only serve particular interest
Most politicians are concerned about the country's well-being	0.369	0.262	0.228	0.119	0.022	Most politicians are only concerned about the next elections
The state manages tax revenues conscientiously	0.450	0.302	0.179	0.060	0.008	The state is wasteful with tax revenues
The state should ensure equal living conditions	0.080	0.091	0.245	0.277	0.308	The state should not ensure equality

Notes: Table is based on 2,042 responses.

Item 10: Please rate the following (Standard errors)

	-2	-1	0	1	2	
I have confidence in politicians	0.010	0.010	0.009	0.008	0.003	I do not have confidence in politicians
Most politicians serve general public interest	0.010	0.010	0.009	0.008	0.004	Most politicians only serve particular interest
Most politicians are concerned about the country's well-being	0.011	0.010	0.009	0.007	0.003	Most politicians are only concerned about the next elections
The state manages tax revenues conscientiously	0.011	0.010	0.008	0.005	0.002	The state is wasteful with tax revenues
The state should ensure equal living conditions	0.006	0.006	0.010	0.010	0.010	The state should not ensure equality

Notes: Table is based on 2,042 responses.

Item 10: Please rate the following (Confidence intervalls)

	-2	-1	0	1	2	
I have confidence in politicians	[0.288, 0.329]	[0.278, 0.318]	[0.204, 0.240]	[0.132, 0.162]	[0.018, 0.031]	I do not have confidence in politicians
Most politicians serve general public interest	[0.280, 0.320]	[0.299, 0.340]	[0.199, 0.234]	[0.124, 0.154]	[0.019, 0.033]	Most politicians only serve particular interest
Most politicians are concerned about the country's well-being	[0.348, 0.390]	[0.243, 0.281]	[0.210, 0.246]	[0.105, 0.133]	[0.015, 0.028]	Most politicians are only concerned about the next elections
The state manages tax revenues conscientiously	[0.428, 0.472]	[0.282, 0.322]	[0.163, 0.196]	[0.050, 0.071]	[0.004, 0.012]	The state is wasteful with tax revenues
The state should ensure equal living conditions	[0.068, 0.092]	[0.078, 0.103]	[0.226, 0.264]	[0.257, 0.296]	[0.288, 0.328]	The state should not ensure equality

Notes: Table is based on 2,042 responses.

Item 10: Please rate the following (Counts)

	-2	-1	0	1	2	
I have confidence in politicians	630	609	453	300	50	I do not have confidence in politicians
Most politicians serve general public interest	612	652	442	283	53	Most politicians only serve particular interest
Most politicians are concerned about the country's well-being	754	535	466	243	44	Most politicians are only concerned about the next elections
The state manages tax revenues conscientiously	919	617	366	123	17	The state is wasteful with tax revenues
The state should ensure equal living conditions	163	185	500	565	629	The state should not ensure equality

Notes: Table is based on 2,042 responses.

Item 11: Opinion poll: Which party would you vote for?

	Proportion	S.E.	C.I.	Count
CDU/CSU	0.225	0.009	[0.207, 0.243]	459
SPD	0.243	0.009	[0.224, 0.262]	496
Bündnis 90/Die Grünen	0.137	0.008	[0.122, 0.152]	280
FDP	0.037	0.004	[0.029, 0.045]	76
Piraten	0.017	0.003	[0.012, 0.023]	35
Die Linke	0.059	0.005	[0.049, 0.069]	120
NPD	0.009	0.002	[0.005, 0.013]	19
Other party	0.048	0.005	[0.039, 0.057]	98
I would not vote	0.225	0.009	[0.207, 0.243]	459
No response	0.000			0
Total	1.000			2,042

Item 12: Are you a member of a labor union?

	Proportion	S.E.	C.I.	Count
Yes	0.091	0.006	[0.896, 0.921]	186
No	0.909	0.006	[0.079, 0.104]	1,856
No response	0.000			0
Total	1.000			2,042

Item 13: How many children do you have?

	Proportion	S.E.	C.I.	Count
0	0.363	0.011	[0.342, 0.384]	741
1	0.223	0.009	[0.205, 0.241]	455
2	0.300	0.010	[0.280, 0.320]	613
3	0.082	0.006	[0.070, 0.094]	167
4	0.025	0.003	[0.018, 0.032]	51
5	0.004	0.001	[0.001, 0.007]	8
6	0.003	0.001	[0.001, 0.005]	6
7	0.000	0.000	[0.000, 0.001]	1
No response	0.000			0
Total	1.000			2,042

Item 14: How satisfied are you with your overall economic situation?

	Proportion	S.E.	C.I.	Count
Very satisfied	0.071	0.006	[0.060, 0.074]	146
Satisfied	0.349	0.011	[0.328, 0.157]	712
Neutral	0.375	0.011	[0.354, 0.396]	765
Dissatisfied	0.142	0.008	[0.127, 0.157]	290
Very dissatisfied	0.063	0.005	[0.053, 0.074]	129
No response	0.000			0
Total	1.000			2,042

Item 15: Knowledge questions (Proportions)

How large was the budget deficit of the federal government in 2012?	**1%**	3%	5%	7%
	0.090	0.428	0.315	0.167
What is the current interest rate on long-term government bonds (maturity 10 years) approximately?	**1.5%**	3%	5.5%	10%
	0.371	0.375	0.209	0.045
How large was inflation in 2012 approximately?	0%	**2%**	5%	10%
	0.015	**0.636**	0.287	0.062

Notes: Correct answers in bold letters. Table is based on 2,042 responses.

Item 15: Knowledge questions (Standard errors)

How large was the budget deficit of the federal government in 2012?	**1%**	3%	5%	7%
	0.006	0.011	0.010	0.008
What is the current interest rate on long-term government bonds (maturity 10 years) approximately?	**1.5%**	3%	5.5%	10%
	0.011	0.011	0.009	0.005
How large was inflation in 2012 approximately?	0%	**2%**	5%	10%
	0.003	**0.011**	0.010	0.005

Notes: Correct answers in bold letters. Table is based on 2,042 responses.

Item 15: Knowledge questions (Confidence intervals)

How large was the budget deficit of the federal government in 2012?	**1%** **[0.078, 0.103]**	3% [0.407, 0.449]	5% [0.295, 0.335]	7% [0.151, 0.183]
What is the current interest rate on long-term government bonds (maturity 10 years) approximately?	**1.5%** **[0.350, 0.392]**	3% [0.354, 0.396]	5.5% [0.191, 0.226]	10% [0.036, 0.054]
How large was inflation in 2012 approximately?	0% [0.010, 0.020]	**2%** **[0.615, 0.657]**	5% [0.267, 0.307]	10% [0.052, 0.073]

Notes: Correct answers in bold letters. Table is based on 2,042 responses.

Item 15: Knowledge questions (Counts)

How large was the budget deficit of the federal government in 2012?	**1%** **184**	3% 874	5% 643	7% 341
What is the current interest rate on long-term government bonds (maturity 10 years) approximately?	**1.5%** **758**	3% 766	5.5% 426	10% 92
How large was inflation in 2012 approximately?	0% 31	**2%** **1,298**	5% 586	10% 127

Notes: Correct answers in bold letters. Table is based on 2,042 responses.

Item 16: What is your employment situation?

	Proportion	S.E.	C.I.	Count
Employee	0.432	0.011	[0.411, 0.454]	883
Apprentice	0.019	0.003	[0.013, 0.025]	39
Unemployed	0.041	0.004	[0.033, 0.050]	84
Employer	0.077	0.006	[0.065, 0.088]	157
Public servant	0.023	0.003	[0.016, 0.029]	46
Pupil	0.063	0.005	[0.053, 0.074]	129
Insignificantly employed	0.027	0.004	[0.020, 0.034]	55
Pensioner	0.283	0.010	[0.264, 0.303]	578
Other	0.035	0.004	[0.027, 0.043]	71
No response	0.000			0
Total	1.000			2,042

Item 17: Do you currently contribute to the public pension scheme?

	Proportion	S.E.	C.I.	Count
Yes	0.486	0.034	[0.418, 0.554]	103
No	0.514	0.034	[0.446, 0.582]	109
No response	0.000			0
Total	1.000			212

Item 18: How do you use the additional budget?

	Proportion	S.E.	C.I.	Count
Spend	0.551	0.016	[0.521, 0.582]	565
Repay debt	0.179	0.012	[0.155, 0.202]	183
Save	0.270	0.014	[0.243, 0.297]	277
No response	0.000			0
Total	1.000			1,025

Item 19: Do you think the current cut will lead to higher contribution rates in the future?

	Proportion	S.E.	C.I.	Count
Yes	0.581	0.015	[0.551, 0.612]	596
No	0.419	0.015	[0.388, 0.449]	429
No response	0.000			0
Total	1.000			1,025

Item 20: Do you think the current cut will lead to lower pensions in the future?

	Proportion	S.E.	C.I.	Count
Yes	0.703	0.014	[0.675, 0.731]	721
No	0.297	0.014	[0.269, 0.325]	304
No response	0.000			0
Total	1.000			1,025

Item 21: Approach to household budgeting

	Proportion	S.E.	C.I.	Count
Fixed saving	0.453	0.016	[0.422, 0.483]	464
Fixed spending	0.331	0.015	[0.302, 0.360]	339
Other	0.217	0.013	[0.191, 0.242]	222
No response	0.000			0
Total	1.000			1,025

Item 22: Statement battery (Proportions)

How do you expect your economic situation to be in one year?	Much worse				Much better
	0.033	0.134	0.607	0.194	0.032
What do you think, how is inflation going to be over the next five years?	Much lower				Much higher
	0.025	0.110	0.242	0.489	0.134
What do you think, how secure are savings in Germany today in comparison to ten years ago?	Much more insecure				Much more secure
	0.237	0.388	0.252	0.101	0.021
What do you think, how profitable are savings in Germany today compared with ten years ago?	Much less				Much more
	0.411	0.311	0.208	0.060	0.010

Notes: Table is based on 1,025 observations.

Item 22: Statement battery (Standard errors)

How do you expect your economic situation to be in one year?	Much worse				Much better
	0.006	0.011	0.015	0.012	0.006
What do you think, how is inflation going to be over the next five years?	Much lower				Much higher
	0.005	0.010	0.013	0.016	0.011
What do you think, how secure are savings in Germany today in comparison to ten years ago?	Much more insecure				Much more secure
	0.013	0.015	0.014	0.009	0.005
What do you think, how profitable are savings in Germany today compared with ten years ago?	Much less				Much more
	0.015	0.014	0.013	0.007	0.003

Notes: Table is based on 1,025 observations.

Item 22: Statement battery (Confidence intervals)

How do you expect your economic situation to be in one year?	Much worse				Much better
	[0.022, 0.044]	[0.113, 0.155]	[0.577, 0.637]	[0.170, 0.218]	[0.021, 0.043]
What do you think, how is inflation going to be over the next five years?	Much lower				Much higher
	[0.016, 0.035]	[0.091, 0.129]	[0.216, 0.268]	[0.458, 0.519]	[0.113, 0.155]
What do you think, how secure are savings in Germany today in comparison to ten years ago?	Much more insecure				Much more secure
	[0.211, 0.263]	[0.358, 0.418]	[0.225, 0.278]	[0.083, 0.120]	[0.013, 0.030]
What do you think, how profitable are savings in Germany today compared with ten years ago?	Much less				Much more
	[0.381, 0.441]	[0.283, 0.340]	[0.183, 0.233]	[0.046, 0.075]	[0.004, 0.016]

Notes: Table is based on 1,025 observations.

Item 22: Statement battery (Counts)

How do you expect your economic situation to be in one year?	Much worse				Much better
	34	137	622	199	33
What do you think, how is inflation going to be over the next five years?	Much lower				Much higher
	26	113	248	501	137
What do you think, how secure are savings in Germany today in comparison to ten years ago?	Much more insecure				Much more secure
	243	398	258	104	22
What do you think, how profitable are savings in Germany today compared with ten years ago?	Much less				Much more
	421	319	213	62	10

Notes: Table is based on 1,025 observations.

Item 23: Do taxes matter for your general job-related efforts?

	Proportion	S.E.	C.I.	Count
Yes	0.406	0.014	[0.567, 0.622]	494
No	0.594	0.014	[0.378, 0.433]	724
No response	0.000			0
Total	1.000			1,218

Item 24: Which influence did the recent payroll tax change have on your job-related efforts?

	Proportion	S.E.	C.I.	Count
I substantially decreased my job-related efforts	0.034	0.008	[0.018, 0.051]	17
I decreased my job-related efforts	0.089	0.013	[0.064, 0.114]	44
Neutral	0.709	0.020	[0.668, 0.749]	350
I increased my job-related efforts	0.136	0.015	[0.105, 0.166]	67
I substantially increased my job-related efforts	0.032	0.008	[0.017, 0.048]	16
No response	0.000			0
Total	1.000			494

Item 25: East/West

	Proportion	S.E.	C.I.	Count
East	0.222	0.009	[0.204, 0.240]	454
West	0.778	0.009	[0.760, 0.796]	1,588
No response	0.000			0
Total	1.000			2,042

Item 26: State

	Proportion	S.E.	C.I.	Count
Schleswig-Holstein	0.036	0.004	[0.028, 0.044]	74
Hamburg	0.021	0.003	[0.014, 0.027]	42
Bremen	0.009	0.002	[0.005, 0.013]	18
Lower Saxony	0.102	0.007	[0.089, 0.116]	209
North Rhine-Westphalia	0.186	0.009	[0.169, 0.202]	379
Hesse	0.083	0.006	[0.071, 0.095]	169
Rhineland-Palatinate	0.043	0.004	[0.034, 0.051]	87
Saarland	0.012	0.002	[0.007, 0.017]	25
Baden-Württemberg	0.121	0.007	[0.107, 0.135]	247
Bavaria	0.166	0.008	[0.149, 0.182]	338
Mecklenburg-West Pomerania	0.023	0.003	[0.017, 0.030]	47
Saxony-Anhalt	0.030	0.004	[0.023, 0.038]	62
Brandenburg	0.039	0.004	[0.030, 0.047]	79
Thuringia	0.031	0.004	[0.023, 0.038]	63
Saxony	0.057	0.005	[0.047, 0.067]	117
Berlin	0.042	0.004	[0.033, 0.051]	86
No response	0.000			0
Total	1.000			2,042

Item 27: Current occupation of interviewed person

	Proportion	S.E.	C.I.	Count
Unskilled labor	0.045	0.005	[0.036, 0.054]	91
Skilled tradesman	0.097	0.007	[0.084, 0.110]	198
Employee without managerial authority	0.181	0.009	[0.164, 0.198]	370
Employee with managerial authority	0.090	0.006	[0.078, 0.103]	184
Senior executive	0.026	0.004	[0.019, 0.033]	54
Public servant in the lower grade of the civil service	0.009	0.002	[0.005, 0.013]	19
Public servant in the middle grade of the civil service	0.006	0.002	[0.003, 0.010]	13
Public servant in the higher grade of the civil service	0.004	0.001	[0.001, 0.007]	8
Self-employed	0.052	0.005	[0.043, 0.062]	107
Self-employed farmer	0.001	0.001	[0.000, 0.003]	3
Freelancer	0.022	0.003	[0.016, 0.028]	45
No response	0.465	0.011	[0.444, 0.487]	950
Total	1.000			2,042

Item 28: Current occupation of head of household

	Proportion	S.E.	C.I.	Count
Blue-collar worker	0.163	0.008	[0.147, 0.179]	333
White-collar worker	0.345	0.011	[0.325, 0.366]	705
Public servant	0.031	0.004	[0.023, 0.038]	63
Self-employed	0.101	0.007	[0.088, 0.114]	207
Farmer	0.002	0.001	[0.000, 0.005]	5
No occupation/unemployed	0.357	0.011	[0.336, 0.378]	729
No response	0.000			0
Total	1.000			2,042

Item 29: Occupational situation of interviewed person

	Proportion	S.E.	C.I.	Count
Full time occupation	0.392	0.011	[0.371, 0.413]	801
Part time occupation	0.143	0.008	[0.127, 0.158]	291
Currently unemployed	0.057	0.005	[0.047, 0.067]	117
Non-working (E.g. pensioners)	0.279	0.010	[0.260, 0.299]	570
Housewife/househusband	0.044	0.005	[0.035, 0.053]	90
In apprenticeship/compulsory military service	0.017	0.003	[0.011, 0.022]	34
Visiting school/university	0.067	0.006	[0.056, 0.077]	136
No response	0.001	0.001	[0.000, 0.003]	3
Total	1.000			2,042

Item 30: Occupational situation of head of household

	Proportion	S.E.	C.I.	Count
Full time occupation	0.585	0.011	[0.563, 0.606]	1,194
Part time occupation	0.052	0.005	[0.043, 0.062]	107
Currently unemployed	0.050	0.005	[0.041, 0.060]	103
Non-working (E.g. pensioners)	0.287	0.010	[0.267, 0.307]	586
Housewife/househusband	0.008	0.002	[0.004, 0.012]	17
In apprenticeship/compulsory military service	0.005	0.002	[0.002, 0.008]	10
Visiting school/university	0.012	0.002	[0.007, 0.017]	25
No response	0.000			0
Total	1.000			2,042

Item 31: Family status

	Proportion	S.E.	C.I.	Count
Single	0.219	0.009	[0.201, 0.237]	448
Unmarried, but living together with partner	0.096	0.007	[0.083, 0.109]	196
Married	0.505	0.011	[0.484, 0.527]	1,032
Widowed/divorced/separated	0.179	0.008	[0.163, 0.196]	366
No response	0.000			0
Total	1.000			2,042

Item 32: Gender

	Proportion	S.E.	C.I.	Count
Male	0.469	0.011	[0.447, 0.491]	958
Female	0.531	0.011	[0.509, 0.553]	1,084
No response	0.000			0
Total	1.000			2,042

Item 33: Size of household

	Proportion	S.E.	C.I.	Count
1 person	0.244	0.010	[0.225, 0.263]	498
2 person	0.400	0.011	[0.378, 0.421]	816
3 person	0.165	0.008	[0.149, 0.181]	337
4 person	0.143	0.008	[0.128, 0.159]	293
5 or more persons	0.048	0.005	[0.039, 0.057]	98
No response	0.000			0
Total	1.000			2,042

Item 34: Is respondent mainly responsible for the household?

	Proportion	S.E.	C.I.	Count
Yes	0.610	0.011	[0.589, 0.631]	1,246
No	0.390	0.011	[0.369, 0.411]	796
No response	0.000			0
Total	1.000			2,042

Item 35: Is respondent head of household?

	Proportion	S.E.	C.I.	Count
Yes	0.608	0.011	[0.587, 0.629]	1,241
No	0.392	0.011	[0.371, 0.413]	801
No response	0.000			0
Total	1.000			2,042

Item 36: Internet access

	Proportion	S.E.	C.I.	Count
At home	0.745	0.010	[0.726, 0.764]	1,522
At work	0.224	0.009	[0.206, 0.242]	458
At school/university	0.047	0.005	[0.037, 0.056]	95
Mobile access	0.152	0.008	[0.137, 0.168]	311
Other	0.050	0.005	[0.041, 0.060]	103
No internet access	0.219	0.009	[0.201, 0.237]	447
No response	0.000			0

Notes: Multiple answers in row 1 to 5 were possible. Table is based on 2,042 responses.

Item 37: Internet use

	Proportion	S.E.	C.I.	Count
Daily	0.369	0.011	[0.348, 0.390]	754
More than once a week	0.278	0.010	[0.258, 0.297]	567
Once a week	0.057	0.005	[0.047, 0.067]	116
Two- or three times a month	0.028	0.004	[0.021, 0.036]	58
Once a month	0.006	0.002	[0.003, 0.010]	13
Less than once a month	0.026	0.004	[0.019, 0.033]	53
Never	0.236	0.009	[0.217, 0.254]	481
No response	0.000			0
Total	1.000			2,042

Item 38: Children below 15 living in the household

	Proportion	S.E.	C.I.	Count
1 children	0.136	0.008	[0.121, 0.151]	278
2 children	0.082	0.006	[0.070, 0.094]	167
3 or more children	0.019	0.003	[0.013, 0.024]	38
None	0.763	0.009	[0.745, 0.782]	1,559
No response	0.000			0
Total	1.000			2,042

Item 39: Net income of interviewed person

	Proportion	S.E.	C.I.	Count
0 to 499 €	0.115	0.007	[0.101, 0.128]	234
500 to 749 €	0.047	0.005	[0.038, 0.056]	96
750 to 999 €	0.131	0.007	[0.117, 0.146]	268
1,000 to 1,249 €	0.076	0.006	[0.064, 0.087]	155
1,250 to 1,499 €	0.159	0.008	[0.143, 0.175]	325
1,500 to 1,999 €	0.123	0.007	[0.109, 0.138]	252
2,000 to 2,499 €	0.082	0.006	[0.070, 0.094]	168
2,500 to 2,999 €	0.024	0.003	[0.017, 0.030]	48
3,000 to 3,499 €	0.017	0.003	[0.012, 0.023]	35
3,500 to 3,999 €	0.005	0.002	[0.002, 0.009]	11
More than 4,000 €	0.017	0.003	[0.011, 0.022]	34
No response	0.204	0.009	[0.186, 0.221]	416
Total	1.000			2,042

Item 40: Net household income

	Proportion	S.E.	C.I.	Count
0 to 499 €	0.015	0.003	[0.009, 0.020]	30
500 to 749 €	0.015	0.003	[0.010, 0.020]	31
750 to 999 €	0.050	0.005	[0.041, 0.060]	103
1,000 to 1,249 €	0.035	0.004	[0.027, 0.043]	71
1,250 to 1,499 €	0.095	0.006	[0.082, 0.107]	193
1,500 to 1,999 €	0.100	0.007	[0.087, 0.113]	205
2,000 to 2,499 €	0.143	0.008	[0.128, 0.159]	293
2,500 to 2,999 €	0.104	0.007	[0.091, 0.117]	212
3,000 to 3,499 €	0.099	0.007	[0.086, 0.112]	202
3,500 to 3,999 €	0.040	0.004	[0.031, 0.048]	81
More than 4,000 €	0.084	0.006	[0.072, 0.096]	172
No response	0.220	0.009	[0.202, 0.238]	449
Total	1.000			2,042

Item 41: Town size

	Proportion	S.E.	C.I.	Count
0 to 1,999	0.058	0.005	[0.048, 0.068]	118
2,000 to 2999	0.045	0.005	[0.036, 0.054]	91
3,000 to 4999	0.065	0.005	[0.054, 0.076]	133
5,000 to 9999	0.113	0.007	[0.099, 0.127]	231
10,000 to 19,999	0.148	0.008	[0.133, 0.164]	303
20,000 to 49,999	0.211	0.009	[0.193, 0.228]	430
50,000 to 99,999	0.069	0.006	[0.058, 0.080]	141
100,000 to 199,999	0.060	0.005	[0.050, 0.071]	123
200,000 to 499,999	0.060	0.005	[0.050, 0.071]	123
More than 500,000	0.171	0.008	[0.155, 0.187]	349
No response	0			0
Total	1.000			2,042

Item 42: Education of interviewed person

	Proportion	S.E.	C.I.	Count
No certified apprenticeship training	0.064	0.005	[0.054, 0.075]	131
Certified apprenticeship	0.296	0.010	[0.276, 0.316]	604
Secondary school	0.421	0.011	[0.400, 0.443]	860
University-entrance diploma	0.104	0.007	[0.091, 0.118]	213
University degree	0.091	0.006	[0.078, 0.103]	185
No response	0.024	0.003	[0.017, 0.031]	49
Total	1.000			2,042

Item 43: Education of head of household

	Proportion	S.E.	C.I.	Count
No certified apprenticeship training	0.042	0.004	[0.033, 0.051]	86
Certified apprenticeship training	0.330	0.010	[0.309, 0.350]	673
Secondary school	0.411	0.011	[0.390, 0.432]	839
University-entrance diploma	0.093	0.006	[0.080, 0.106]	190
University degree	0.121	0.007	[0.107, 0.136]	248
No response	0.003	0.001	[0.001, 0.005]	6
Total	1.000			2,042

Item 44: Social class

	Proportion	S.E.	C.I.	Count
Highest	0.142	0.008	[0.126, 0.157]	289
2nd highest	0.171	0.008	[0.155, 0.187]	349
Average	0.459	0.011	[0.437, 0.480]	937
2nd lowest	0.182	0.009	[0.165, 0.199]	372
Lowest	0.047	0.005	[0.037, 0.056]	95
No response	0.000			0
Total	1.000			2,042

Item 45: Interest on new trends

	Proportion	S.E.	C.I.	Count
I am highly interested in new trends	0.236	0.009	[0.217, 0.254]	481
New trends do not interest me particularly	0.488	0.011	[0.466, 0.509]	996
I do not care about new trends	0.277	0.010	[0.257, 0.296]	565
No response	0.000			0
Total	1.000			2,042

Item 46: Living conditions

	Proportion	S.E.	C.I.	Count
Owner-occupied house	0.457	0.011	[0.436, 0.479]	934
Owner-occupied flat	0.070	0.006	[0.058, 0.081]	142
On rent	0.473	0.011	[0.451, 0.495]	966
No response	0.000			0
Total	1.000			2,042

Item 47: Age

	Proportion	S.E.	C.I.	Count
14	0.011	0.002	[0.007, 0.016]	23
15	0.009	0.002	[0.005, 0.013]	19
16	0.007	0.002	[0.004, 0.011]	15
17	0.010	0.002	[0.006, 0.015]	21
18	0.008	0.002	[0.004, 0.012]	17
19	0.008	0.002	[0.004, 0.012]	17
20	0.006	0.002	[0.003, 0.010]	13
21	0.006	0.002	[0.003, 0.010]	13
22	0.013	0.003	[0.008, 0.018]	27
23	0.012	0.002	[0.007, 0.016]	24
24	0.011	0.002	[0.007, 0.016]	23
25	0.015	0.003	[0.009, 0.020]	30
26	0.011	0.002	[0.006, 0.015]	22
27	0.012	0.002	[0.007, 0.017]	25
28	0.010	0.002	[0.006, 0.014]	20
29	0.012	0.002	[0.007, 0.017]	25
30	0.015	0.003	[0.009, 0.020]	30
31	0.012	0.002	[0.007, 0.016]	24
32	0.010	0.002	[0.006, 0.015]	21
33	0.008	0.002	[0.004, 0.012]	17
34	0.011	0.002	[0.007, 0.016]	23
35	0.012	0.002	[0.007, 0.017]	25
36	0.015	0.003	[0.010, 0.020]	31

	Proportion	S.E.	C.I.	Count
37	0.010	0.002	[0.006, 0.014]	20
38	0.014	0.003	[0.009, 0.019]	29
39	0.014	0.003	[0.009, 0.019]	29
40	0.016	0.003	[0.011, 0.022]	33
41	0.016	0.003	[0.010, 0.021]	32
42	0.021	0.003	[0.015, 0.027]	43
43	0.015	0.003	[0.009, 0.020]	30
44	0.023	0.003	[0.016, 0.029]	46
45	0.024	0.003	[0.017, 0.030]	48
46	0.024	0.003	[0.017, 0.030]	48
47	0.025	0.003	[0.019, 0.032]	52
48	0.020	0.003	[0.014, 0.026]	40
49	0.024	0.003	[0.017, 0.030]	48
50	0.029	0.004	[0.022, 0.037]	60
51	0.024	0.003	[0.017, 0.031]	49
52	0.020	0.003	[0.014, 0.026]	41
53	0.022	0.003	[0.015, 0.028]	44
54	0.016	0.003	[0.010, 0.021]	32
55	0.019	0.003	[0.013, 0.025]	39
56	0.018	0.003	[0.012, 0.023]	36
57	0.016	0.003	[0.010, 0.021]	32
58	0.013	0.003	[0.008, 0.018]	27
59	0.016	0.003	[0.010, 0.021]	32
60	0.019	0.003	[0.013, 0.024]	38
61	0.012	0.002	[0.007, 0.017]	25
62	0.017	0.003	[0.011, 0.022]	34
63	0.017	0.003	[0.012, 0.023]	35
64	0.017	0.003	[0.011, 0.022]	34
65	0.012	0.002	[0.007, 0.017]	25
66	0.019	0.003	[0.013, 0.025]	39
67	0.009	0.002	[0.005, 0.013]	18
68	0.013	0.002	[0.008, 0.018]	26

	Proportion	S.E.	C.I.	Count
69	0.013	0.003	[0.008, 0.018]	27
70	0.018	0.003	[0.012, 0.023]	36
71	0.016	0.003	[0.010, 0.021]	32
72	0.018	0.003	[0.012, 0.023]	36
73	0.013	0.002	[0.008, 0.018]	26
74	0.015	0.003	[0.010, 0.020]	31
75	0.019	0.003	[0.013, 0.024]	38
76	0.011	0.002	[0.006, 0.015]	22
77	0.007	0.002	[0.003, 0.010]	14
78	0.009	0.002	[0.005, 0.013]	18
79	0.008	0.002	[0.004, 0.012]	17
80	0.006	0.002	[0.003, 0.009]	12
81	0.005	0.002	[0.002, 0.009]	11
82	0.009	0.002	[0.005, 0.013]	19
83	0.003	0.001	[0.001, 0.005]	6
84	0.003	0.001	[0.001, 0.006]	7
85	0.003	0.001	[0.001, 0.005]	6
86	0.002	0.001	[0.000, 0.004]	4
87	0.001	0.001	[0.000, 0.003]	3
88	0.000	0.000	[0.000, 0.001]	1
89	0.001	0.001	[0.000, 0.003]	3
90	0.000	0.000	[0.000, 0.001]	1
91	0.000	0.000	[0.000, 0.001]	1
92	0.001	0.001	[0.000, 0.002]	2
No response	0.000			0
Total	1.000			2,042

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Bernd Hayo and Florian Neumeier

Public Attitudes Toward Fiscal Consolidation: Evidence from a Representative German Population Survey

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Coordination: Bernd Hayo • Philipps-University Marburg
Faculty of Business Administration and Economics • Universitätsstraße 24, D-35032 Marburg
Tel: +49-6421-2823091, Fax: +49-6421-2823088, e-mail: hayo@wiwi.uni-marburg.de

Public Attitudes Toward Fiscal Consolidation: Evidence from a Representative German Population Survey

Bernd Hayo and Florian Neumeier

Philipps-University Marburg

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Corresponding author:

Bernd Hayo
School of Business and Economics
Philipps-University Marburg
D-35032 Marburg
Germany
Phone: +49–6421–2823091
Email: hayo@wiwi.uni-marburg.de

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Public Attitudes Toward Fiscal Consolidation: Evidence from a Representative German Household Survey

Abstract

The poor state of public finances in many countries has led to calls for fiscal consolidation. In practice, implementing concrete consolidation measures appears to meet with public resistance, suggesting that the success of consolidation efforts strongly depends on the popularity of the chosen measures. To identify public attitudes toward fiscal consolidation and alternative consolidation measures, we conducted a survey among 2,000 German citizens. Applying ordered and multinominal logit models, we test theory-based hypotheses about the determinants of individual attitudes toward public debt. We find that, *inter alia*, personal economic situation, time preferences, fiscal illusion, and trust in politicians exert a significant impact on attitudes toward fiscal consolidation and preferences for alternative consolidation measures.

JEL: D72; H31; H63

Keywords: Public debt; fiscal consolidation; sovereign debt crisis; public attitudes; Germany.

1. Introduction

Over the course of the financial and economic crisis, many countries' public finances have been stretched to the breaking point due to bailing out financial institutions and attempting to stabilise the business cycle. The poor state of public finances has raised concerns not only about the solvency of sovereigns, but also in regard to the very survival of the euro area itself, not to mention the process of European integration. As a consequence, many economists and policy-makers are calling for fiscal consolidation, which, in turn, has led to a resurgence of macroeconomic research on the effects on fiscal consolidation and determinants of the likelihood of its success (e.g., IMF, 2010; Perotti, 2011; Alesina et al., 2012).

However, in many countries, the implementation of consolidation measures has been less than a success, not necessarily due to poorly chosen policies, but because of public opposition to the measures. There is a substantial literature emphasising the importance of public support for economic reforms, suggesting that the success of fiscal consolidation efforts strongly depends on the popularity of the measures to be implemented (see, e.g., the surveys by Rodrik, 1996; Drazen, 2000). However, most empirical studies focus on support for the introduction of a new economic system or specific economic policies rather than the issue of budget consolidation (e.g., Shiller et al., 1991; Fidrmuc, 2000; Warner, 2001; Hayo, 2004; Valev, 2004). Hence, there is little research into public attitudes toward fiscal consolidation and different consolidation measures.

To address this issue, we use data from a unique survey of German households conducted on our behalf by Gesellschaft für Konsumforschung (GfK), one of the biggest private German institutes specialising in collecting public opinion data. Fieldwork was done in February 2013 and involved completing a structured questionnaire with the help of pen pads during face-to-face interviews. Our sample is comprised of 2,042 representatively selected German citizens aged 14 or older.

Interviewees were asked questions about the public debt situation in Germany, in particular about their attitudes toward fiscal consolidation, the desired pattern of public debt reduction, and their preferences for different consolidation measures. We collected additional information about the respondents, allowing us to test several theory-based hypotheses concerning determinants of individual attitudes toward fiscal consolidation. The determinants we find to be important include personal economic situation, time preferences, fiscal illusion, trust in politics, and party preferences.

We believe that there are two reasons making Germany an especially interesting country to study in regard to the topic of this paper. First, Germany is the largest economy

within the European Union, which is why its fiscal policy decisions might cause notable spillovers to other member countries. Second, of all member countries of the euro area, Germany makes the largest contribution to the European Stability Mechanism (roughly 27%). Thus, the state of Germany's public finances is of utmost importance for the whole euro area.

Survey data are frequently used to elicit public attitudes toward policy measures. Alesina and Giuliano (2009), Blekesaune and Quadagno (2003), and Corneo and Grüner (2002) evaluate individual attitudes toward political redistribution utilising cross-country data from the World Values Survey and the International Social Survey Programme. The authors test several hypotheses about preferences for redistribution, especially concerning the impact of current and future income as well as absolute and relative personal income. Alesina and La Ferrara (2005) study the same topic using data from the US General Social Survey. Huckley and Harbour (1983) employ a coupon-scale questionnaire to discover individuals' preferences between public expenditures and tax cuts. By forcing respondents to take both public expenditures and revenues into account, the authors circumvent the so-called more for less paradox (Welch, 1985). Surveys are also used to assess consumers' responses to tax policy changes (e.g., Shapiro and Slemrod, 2001).

Blinder and Krueger (2004), as well as Walstad (1997), use survey data from the United States to examine individual attitudes toward a variety of economic issues, including public deficits. Both studies primarily focus on the role of knowledge and political ideology. Their findings suggest that opinions on economic policy are significantly affected by a person's factual economic knowledge. Blinder and Holtz-Eakin (1984) use US opinion poll data to elicit individual attitudes toward a proposed balanced budget amendment to the constitution.

To the best of our knowledge, the only survey-based empirical analyses of individual preferences toward fiscal consolidation are provided by Stix (2013) and Heinemann and Henninghausen (2012). Stix (2013) uses data from a survey conducted in Austria in 2010 to evaluate public attitudes toward public debt reduction and different debt reduction paths. Heinemann and Henninghausen (2012) utilize data from a telephone survey conducted in Germany in 2011 to assess individual support toward the German federal government's intention not to incur any additional debt throughout the coming years. However, there are some important differences between these approaches and ours. For example, in the questionnaires of both studies, people were asked whether they would support fiscal consolidation, assuming that the *government* will choose the consolidation measures. Given this wording, it seems likely that consolidation preferences are influenced by the respondents'

expectations about which measures the government may implement. Thus, the survey questions used by Stix (2013) and Heinemann and Henninghausen (2012) mimic a single item referendum. In contrast, we designed our survey in such a way that the respondents themselves choose the consolidation measures to be implemented. This not only allows us to assess the *general feasibility* of public debt consolidation, but also to shed light on the specific course policy-makers should adopt to successfully reduce public debt. Moreover, the number of variables employed in our analysis is much larger than in the other two studies. This has two important advantages. First, it allows us to test several theoretical conjectures and hypotheses, which have not been analysed in the extant empirical literature. Second, it helps avoid omitted variable biases.

Our paper also relates to macro-level studies on the association between governments' fiscal performance and election outcomes. For example, Peltzman (1992) studies voting behaviour in US presidential, senatorial, and gubernatorial elections. His findings suggest that voters punish increases in overall public spending, but not an increasing reliance on deficit spending. On the contrary, Brender and Drazen (2008) find that in developed countries, incurring public deficits significantly reduces the incumbent government's chances of re-election.

The main findings of our paper are as follows. Descriptive statistics show that although the median respondent is in favour of fiscal consolidation in Germany, no specific consolidation measure is supported by a majority. We run (ordered) logit estimations and find that individual attitudes toward fiscal consolidation are affected by various factors. People who are well-off, forward-looking, informed about the costs associated with deficit spending, and who have little faith in the government's ability to appropriately manage tax revenues are significantly more likely to opt for a debt reduction. In contrast, people who regard their personal economic situation as poor, reveal high discount rates, and believe in the government's fiscal competence exhibit a larger likelihood of opposing consolidation efforts. Preferences for alternative consolidation measures are also systematically related to several explanatory variables. Respondents characterised by high income and social class tend to favour a tax hike, whereas people who have less or no confidence in the fiscal competence of politicians are generally opposed to such a policy measure. Finally, respondents who are particularly concerned about the present situation tend to oppose a reduction of public spending.

The remainder of the paper is organised as follows. Section 2 introduces the questionnaire and sets forth some descriptive statistics. In Section 3, we study the

determinants of individual attitudes toward fiscal consolidation. We discuss our main research hypotheses and present the results of our empirical analysis. In Section 4, we examine public preferences for alternative consolidation measures. Section 5 concludes.

2. Individual Attitudes Toward Fiscal Consolidation

In democracies, elected politicians are supposed to act in the voters' best interests and according to their preferences. This behaviour is facilitated by regularly scheduled, free elections. In principle, if politicians have been acting in accordance with the voters' interests, they are re-elected, otherwise they are voted out of office. Thus, the likelihood of successfully implementing a political programme is much higher if it matches voters' preferences (Rodrik, 1996; Drazen, 2000).

In light of economic and political developments in Europe within the past years, two questions are of particular interest: What is the electorate's attitude toward (i) fiscal consolidation in general and (ii) specific consolidation measures? The answers to these questions are important to academic economists, as they may help in formulating and testing relevant theories, and they are also crucial for political decision-makers, as the implementation of concrete consolidation measures has met with remarkably strong public resistance.

To provide answers to these questions, we designed a survey which was conducted on our behalf by Gesellschaft für Konsumforschung (GfK), one of the biggest private survey institutes in Germany. Between 15 February and 1 March 2013, 2,042 representatively selected German citizens aged 14 or older were interviewed face-to-face by professional interviewers with the help of pen pads. Quota sampling was used according to sex, age, household size, city size, occupation of head of household, and state of residence.

The questionnaire contains two questions designed to measure individual attitudes toward fiscal consolidation. First, we ask people whether they think the state should reduce public debt, keep the amount of public debt at the current level, or incur additional public debt. The wording of the question, translated from German into English, is as follows:

At the end of 2012 the outstanding amount of public debt in Germany was above €2 trillion. This equals €26,000 per inhabitant or 80% of gross domestic product (GDP), respectively. In your opinion, should the state reduce public debts, keep the amount of public debt at its current level, or incur additional public debts?

Reduce debt	□
Keep debt at current level	□
Incur additional debt	□

Second, respondents who state that public debt should be reduced are then asked to choose between three alternative debt-reduction paths:

Option A: Debt reduction is distributed evenly over the next years, i.e., *in each year a similar amount of debt* is reduced.	□
Option B: The extent of debt reduction increases over the next years, i.e., *in the near future a smaller part of debt* is reduced and *in the far future a larger part of debt* is reduced.	□
Option C: The extent of debt reduction decreases over the next years, i.e., *in the near future a larger part of debt* is reduced and *in the far future a smaller part of debt* is reduced.	□
Don't know	□

In addition to verbally explaining the possible answers, the alternative debt-reduction paths were illustrated graphically on the interviewer's laptop with pictures of stacks of money.

The design of suitable survey items for the purpose of our paper is a challenging task. As our respondents constitute a representative sample of the German population, the survey questions need to be comprehensible for economic laymen and people with less formal education. For that reason, we refrained from defining specific consolidation goals or referring to technical measures, such as debt-to-GDP ratios. The wording of our questions was chosen in close collaboration with survey experts from GfK and our experience from pre-testing the questions. We got the impression that our wording provides a good compromise between keeping the questions appropriately simple and obtaining informative answers, irrespective of whether interviewees have different debt reduction goals or time horizons in mind.

Based on the two aforementioned questions, we construct an ordinal debt-propensity score, which is used as a dependent variable in the empirical analysis. Respondents who prefer an additional increase in public debt are regarded as the most debt prone and those who

opt for an immediate notable debt reduction as most debt averse. Table 1 documents the construction and distribution of our dependent variable based on sorting answers according to the implied propensity toward fiscal consolidation.

Table 1: Constructing the dependent variable: Distribution of attitudes toward fiscal consolidation

Answer Options	**Count**	**Proportion**
1 Reducing a *larger* part of debt in the *near* future and a *smaller* part of debt in the *far* future	312	15.3%
2 Reducing debt evenly over the years	949	46.5%
3 Reducing a *smaller* part of debt in the *near* future and a *larger* part of debt in the *far* future	164	8.0%
4 Hold amount of debt constant	484	23.7%
5 Incur additional debt	33	1.6%
Don't know/no answer (coded as missing values)	100	4.9%
Total	2,042	100%

Note: Answer categories are sorted according to the implied debt propensity. Larger numbers indicate a higher propensity toward public indebtedness.

Roughly 70% of interviewees call for a reduction of public debt. One-quarter prefers to keep public debt at its current level and only 1.6% supports an increase in public debt. It thus appears that fiscal consolidation is supported by a vast majority of the German population. This raises the question of which consolidation measure should be implemented. The success of any fiscal consolidation effort depends not only on the public's attitude toward public debt reduction in general, but also on the popularity of the specific consolidation measures the government plans to adopt. Thus, all respondents who opted for debt reduction were asked which consolidation measure they prefer. The choice was between raising taxes or cutting public spending in one of seven areas: social security, education, public safety, infrastructure, economic development, defence, or miscellaneous. The first six are those on which the German government currently spends the most. Each interviewee could voice a maximum of three preferences, which were ranked. To ensure that differences in respondents' answers are not driven by differences in their information sets, we listed the current amount of public spending devoted to the respective category (in per-capita terms and as a share of total

public spending) as well as the most important items in each category measured by the amount of money spent.

Table 2 shows the percentage distribution of answers. Only about 21% of those who call for fiscal consolidation prefer tax hikes, whereas 66% favour expenditure-based fiscal adjustments.

Table 2: Supporters of fiscal consolidation: Preferences for different consolidation measures—distribution of answers

Consolidation Measure	**1st Choice**	**2nd Choice**	**3rd Choice**	**Sum**
Tax hike	4.9%	4.1%	11.7%	20.6%
Cut public spending on …				
… social security	11.0%	5.5%	6.4%	22.8%
… public safety and order	1.8%	4.0%	3.0%	8.8%
… education	2.3%	2.5%	1.8%	6.6%
… infrastructure	1.8%	6.6%	5.3%	13.6%
… economic development	7.5%	13.8%	7.3%	28.6%
… defence	41.1%	20.1%	5.8%	67.0%
… other areas	16.5%	21.0%	16.1%	53.6%
Don't know/no answer	13.3%	22.4%	42.8%	78.5%
Total	100%	100%	100%	300%

This is good news for fiscal stabilisation, since expenditure-based fiscal consolidation is associated with lower welfare costs and greater sustainability (Alesina et al., 2012; Alesina and Ardagna, 2010). Two-thirds of the consolidation-supporting respondents opt for reducing public spending on defence. Preferences for other consolidation measures are more heterogeneously distributed.

Note that the figures in Table 2 are derived only from supporters of fiscal consolidation. Policy-makers, however, might also be interested in whether any specific consolidation measure is supported by the majority of the population. Table 3 sheds light on this issue. The figures in Table 3 represent the share of respondents in favour of the implementation of consolidation measure j in relation to *all* respondents, plus the 95% confidence intervals as a measure of the sampling error. The figures reveal what may be the most serious obstacle to public debt reduction and why attempts to implement fiscal consolidation measures in the past have been so unsuccessful: there is no single consolidation measure that achieves majority support.

Table 3: All respondents: Preferences for different consolidation measures—distribution of answers

Consolidation Measure	Proportion	95% CI	
Tax hike	15.4%	13.8%	16.9%
Cut public spending on …			
… social security	17.0%	15.4%	18.7%
… public safety and order	6.6%	5.5%	7.6%
… education	4.9%	4.0%	5.9%
… infrastructure	10.1%	8.8%	11.4%
… economic development	21.4%	19.6%	23.1%
… defence	50.0%	47.8%	52.2%
… other areas	40.0%	37.9%	42.1%

Cutting defence expenditures comes close, though, and a simple majority lies within the 95% confidence bands. However, since only 2.5% of the public budget is devoted to this expense, the potential for reducing public debt by means of cutting defence spending is very limited.

3. Eliciting Individual Attitudes Toward Fiscal Consolidation

This section sheds light on whether differences between peoples' attitudes toward fiscal consolidation can be attributed to specific characteristics. As a starting point, the public choice and political economy literature puts forward several theories and conjectures about the determinants of individual attitudes toward public indebtedness. However, there is very little empirical evidence as to the usefulness of these approaches. In this section, we discuss some of these claims and describe how we test them empirically.[1]

3.1. Explanatory Variables and Research Hypotheses

The extant public choice and political economics literature contains hypotheses intended to explain why, or under which conditions, voters may tolerate or even support public debt accumulation. Some approaches are well-defined formal theories, others more or less *ad hoc*. In this section, we discuss several of these arguments and relate them to items included in our questionnaire.

[1] A description of all questionnaire items is provided in Appendix A.1.

Economic well-being: Cukierman and Meltzer (1989) argue that deficit spending can be used to reallocate resources over time and even generations. They provide a formal model in which people trade off their current living conditions against that of future generations. Their main conclusion is that individual attitudes toward public indebtedness depend on personal economic situation: People are less reluctant to live at the expense of future generations if they are relatively worse off. Even in a neo-Ricardian framework in which individuals care about the next generations' well-being, people facing poorer economic conditions are more likely to be in favour of public indebtedness.[2]

The questionnaire contains four variables measuring the interviewee's personal economic situation, three objective indicators and a subjective one: (i) net monthly household income (in €1,000), (ii) the household's real assets (i.e., whether the respondent lives in a self-owned house, self-owned flat, or a rented house/flat), (iii) a social class indicator, i.e., a variable combining information about respondents' relative income and occupational status and ranging from 1 (lower class) to 5 (upper class), and (iv) a subjective assessment of the interviewee's personal economic situation, ranging from 1 (absolutely dissatisfied) to 5 (absolutely satisfied). Our first hypothesis is:

H1: Relatively well-off people are more debt averse than those who are relatively worse off.

Time preference: In Barro's (1979) tax-smoothing hypothesis, deficit spending helps minimise the net present value of the excess burden of taxation. Hence, socially optimal fiscal policy is countercyclical, i.e., a benevolent social planner incurs fiscal deficits during recessions and consolidates the public budget once the economy recovers. However, whether such a course of fiscal policy is in the (representative) voter's interest strongly depends (*inter alia*) on her time preferences, represented by the shape and parameters of the discount function she applies to evaluate the welfare effect of future fiscal policies. The crucial assumption here is that the discount function applied by the (representative) individual corresponds to the yield curve of government bonds. However, two frequently observed anomalies in empirical intertemporal choice research challenge this view. First, people's subjective discount factors between two consecutive periods are typically larger than the corresponding interest rate, indicating that they are less forward-looking than they are assumed to be. Second, people are especially impatient in the short run, commonly referred to as 'myopia' (e.g., Thaler and Shefrin, 1981; Ainslie, 1975). These two anomalies are typically

[2] Personal economic situation is also found to be an important determinant of attitudes toward private indebtedness. See Lea et al. (1995) and Lunt and Livingston (1991) for a discussion of possible explanations.

illustrated by means of a quasi-hyperbolic discount function, with W indicating an individual's welfare and u her utility from consuming good x at time t and in different future periods t + i (i = 1,…,N):

$$W_t^j = u(x_t) + \delta \sum_{i=1}^{N} \beta^i u(x_{t+i})$$

β represents the subjective discount rate between two consecutive future periods, i.e., the individual degree of forward-lookingness, and δ measures the degree of short-run impatience. A quasi-hyperbolic discount function is frequently applied in theoretical and empirical setups and describes individual intertemporal decision-making quite well (e.g., Angeletos et al., 2001; Laibson, 1997). However, a lack of forward-lookingness and short-run impatience could also be an important determinant of public indebtedness. Huber and Runkel (2008) show that when hyperbolic discounting is applied in the context of the Barro (1979) model, a benevolent social planner will persistently accumulate public debt, and the size of the deficit is inversely related to the discount factor.

We conduct two 'experiments' to elicit the interviewees' time preferences. In the first experiment, respondents are asked to choose between a safe payoff of €1,000 paid immediately and a higher payoff of €$X_{i,6}$ paid in six months. In the second experiment, the choice is between a safe payoff of €1,000 paid in six months and a higher payoff of €$X_{i,12}$ paid in 12 months.[3] The respondents' choices of $X_{i,6}$ and $X_{i,12}$ can then be used to calculate β and δ (cf. Angeletos et al., 2001; Laibson, 1997):

$$\beta = \frac{1{,}000}{X_{i,12}}, \qquad \delta = \frac{1{,}000}{\beta \cdot X_{i,6}}$$

Accordingly, our second hypothesis is:

> *H2: The smaller an individual's subjective discount rate (β) and short-run patience (δ), the greater her propensity toward public indebtedness.*

Information set: Survey evidence documents that knowledge about economic facts shapes a person's opinion of economic policy (Blinder and Krueger, 2004; Walstad, 1997). Hence, factual knowledge may also affect individual attitudes toward fiscal consolidation. One of the earliest arguments made in the public choice literature to explain the electorate's apparent debt tolerance is that voters may suffer from 'fiscal illusion', i.e., they lack

[3] The setup of our experiment is shown in Appendix A.2. The setup and wording for this experiment are taken from the questionnaire of the German Socioeconomic Panel (SOEP), where the experiment was incentivised. However, since the distribution of answers in our data is very similar to the one in the SOEP data, we are confident that the lack of a material incentive in our version of the experiment has no notable effect on the respondents' choices.

information about the future costs associated with deficit spending (e.g., Buchanan and Wagner, 1977). Arguably, being able to accurately assess the costs of deficit financing presupposes that voters have sufficient knowledge about the economy. Factual knowledge about debt-related economic measures may be a good way of capturing the degree of fiscal illusion. We employ three multiple-choice questions in order to test the interviewees' knowledge. We ask about (i) the size of the federal government's budget deficit in 2012 (in relation to GDP), (ii) the current interest rate on government bonds with a maturity of 10 years, and (iii) 2012's inflation rate. In each case, respondents can choose between four answers. In the subsequent empirical analysis, we employ dummy variables for the number of correct answers to assess the influence of factual knowledge on attitudes toward fiscal consolidation. We expect that those who are better informed are more debt averse, as they have a better understanding of the costs of public debt.

H3: (Factual) knowledge about the costs associated with deficit spending increases public debt aversion.

Believed fiscal position: Subjective assessment of economic conditions by economic agents may play an important role as well, as people tend to act on the information set they have, at least as long as they perceive it to be reasonably accurate. Thus, on the one hand, if a person *believes* that debt-servicing costs or the previous year's deficit are low, she may be more tolerant of incurring additional public debt. On the other hand, if a person *thinks* that the government is spending beyond its limits, she may be more likely to support fiscal consolidation. We use the answers to the knowledge multiple-choice questions as an indicator for the respondents' *beliefs* about the realisation of debt-related economic measures, irrespective of whether they are actually correct.

H4: The larger a person believes the previous year's deficit as well as debt-servicing costs to be, the greater her public debt aversion.

Trust in politicians: Several political economy approaches assume that public debt is used as a strategic instrument by opportunistic policy-makers to pursue selfish interests. These approaches include political budget cycle theory and rent-seeking approaches, as well as work by Persson and Svensson (1989) and Alesina and Tabellini (1990) in which the government is supposed to have time-inconsistent preferences. Arguably, voters who share these critical views about politicians' motives may be more inclined to believe that public debt is a consequence of opportunistic political behaviour and, therefore, are more likely to support

fiscal consolidation. In contrast, citizens who have great confidence in the elected politicians may be less inclined to scrutinise their decisions and, thus, voice stronger support for whatever policy is actually implemented. Hence, a person's view of politicians may influence his or her evaluation of public policy. Specifically, voters can either question the motives of political actors—e.g., suspect that their decisions reflect self-interest—or their competence. To capture different dimensions of trust, we ask the interviewees whether they believe that politicians (i) act according to the general public interest vs. only in the interest of particular groups, (ii) are concerned about the country's long-term well-being vs. are concerned only about the next election, and (iii) manage tax revenues conscientiously vs. are wasteful with tax revenues. In each case, the interviewees are asked with which statement, on a five-point scale, they most agree.

H5: People who lack confidence in politicians' motives or competence are more likely to opt for fiscal consolidation.

Party preference: A widespread conjecture is that public debt incurrence is associated with the government's political ideology—i.e., leftist governments are supposed to be more inclined to rely on deficit spending than are their right-wing counterparts (e.g., Buchanan and Wagner, 1977). Accordingly, supporters of leftist parties may be more tolerant of public indebtedness than supporters of conservative parties. We account for party preferences by asking interviewees for which party they would vote if elections were held next Sunday. The interviewees choose between the seven most popular parties in Germany. Alternatively, they can state that they 'would vote for a different party' or 'would not vote at all'.

H6: Supporters of leftist parties are more likely to oppose fiscal consolidation than are supporters of conservative parties.

3.2. Empirical Approach

We now conduct an empirical investigation into the determinants of individual attitudes toward fiscal consolidation by considering the following model:

(1) $P(Y = y^k)$

$= F(economic\ situation, time\ preference, information\ set, trust, party\ preference, X)$

The dependent variable is the debt-propensity measure introduced in Section 2.1. To estimate Equation (1), we assume that F(.) corresponds to the distribution function of the logistic distribution, which yields an ordered logit model. We apply maximum likelihood estimation.

The main explanatory variables of interest are the ones described in Section 2.3, namely, the indicators capturing the respondent's economic situation, the time preference parameters β and δ,[4] indicators reflecting the respondent's information about public indebtedness, i.e., the measures of factual knowledge about the costs of public indebtedness as well as the respondent's subjective assessments of debt-related economic measures (i.e., the previous year's deficit, interest rate, and inflation rate; measured in percentage points), the indicators of confidence in government, and party preferences.[5] We further consider various control variables describing respondents' characteristics: education (dummies for those who completed the lower (Hauptschule; reference category), middle (Realschule), and upper secondary school (Abitur)), employment status of the household head (regularly employed (reference category), unemployed, students, retirees, and those who are jobless for other reasons), marital status (singles (reference category), people living together with a partner, married people, and those who are widowed or divorced), age, sex, and children (dummy), head of the household (dummy), union member (dummy), and living in East Germany (dummy). Additionally, we ask all interviewees about their attitudes toward political redistribution on a five-point scale, thereby measuring their proximity to an egalitarian ideology. Finally, we gauge the respondents' risk preferences by conducting a simple experiment. Respondents are confronted with the choice of either receiving a safe payoff of €X or taking part in a lottery in which they could win either €1,000 or nothing (odds are 50:50). The choice of X is then used to compute an individual's risk preference parameter, which varies between −1 (maximum risk aversion) and +1 (maximum risk propensity).[6]

3.3. Results

The estimation results from the ordered logit model explaining individual attitudes toward fiscal consolidation are presented in Table 4. The second column contains the estimated parameters of the latent variable model; columns 3–7 show the average marginal effects for each realisation of the debt-propensity indicator. Our findings are as follows.

[4] In our sample, we observe an unexpectedly high number of respondents who choose the immediate payment irrespective of what future payoff they are offered. Interestingly, a similar distribution of answers is found in the SOEP. A possible explanation for this finding is that respondents who are particularly risk averse chose this option. To control for possible spill-over effects and measurement errors, we include additional dummy variables for these categories.

[5] All explanatory variables are described in greater detail in Appendix A.1.

[6] The risk preference parameter is computed as $\frac{X-500}{500}$. The setup of the experiment is described in detail in Appendix A.2.

Table 4: Determinants of individual attitudes toward fiscal consolidation—ordered logit estimation

Variables	**Coefficient**	**Average Marginal Effects**				
		Y = 1	**Y = 2**	**Y = 3**	**Y = 4**	**Y = 5**
Economic situation						
HH income	0.004	−0.001	−0.0003	0.0001	0.001	0.0001
Subjective well-being	−0.194***	0.025***	0.017***	−0.006***	−0.033***	−0.003***
Social class	−0.027	0.003	0.002	−0.001	−0.004	−0.0004
Property	−0.234**	0.030**	0.021**	−0.007**	−0.040**	−0.004**
Time preferences						
β	−0.755***	0.036***	0.024***	−0.008**	−0.047***	−0.005**
δ	−0.450**	0.029**	0.019**	−0.007**	−0.038**	−0.004**
Knowledge						
One correct answer	−0.329**	0.039**	0.034**	−0.009**	−0.058**	−0.006*
Two correct answers	−0.439**	0.054**	0.042**	−0.012**	−0.076**	−0.008**
Three correct answers	−0.714**	0.095**	0.054***	−0.021**	−0.117***	−0.011***
Believed deficit	−0.098***	0.013***	0.008***	−0.003***	−0.017***	−0.002***
Believed interest rate	0.022	−0.003	−0.002	0.001	0.004	0.0004
Believed inflation rate	−0.033	0.004	0.003	−0.001	−0.006	−0.001
Political trust						
Public interest	−0.005	0.001	0.001	−0.0002	−0.001	−0.0001
Long-term orientation	−0.019	0.002	0.002	−0.001	−0.003	−0.0003
Fiscal competence	0.106*	−0.014*	−0.009*	0.003*	0.018*	0.002*
Party preference						
Leftist party	−0.227	0.029	0.019	−0.007	−0.038	−0.004
Pirates	−0.185	0.024	0.016	−0.005	−0.031	−0.003
SPD	−0.063	0.008	0.006	−0.002	−0.011	−0.001
Green party	−0.072	0.009	0.007	−0.002	−0.012	−0.001
CDU	−0.104	0.013	0.010	−0.003	−0.018	−0.002
FDP	0.096	−0.011	−0.010	0.002	0.017	0.002
NPD	−0.624	0.091	0.034***	−0.020	−0.096*	−0.009*
Other	−0.739***	0.111***	0.034***	−0.024***	−0.111***	−0.010***

Table 4 (continued)

Variables	Coefficient	Average Marginal Effects				
		Y = 1	Y = 2	Y = 3	Y = 4	Y = 5
Education						
Middle second. school	−0.059	0.007	0.005	−0.002	−0.010	−0.001
Higher second. school	−0.214	0.028	0.017	−0.006	−0.036	−0.003
Employment HH head						
Unemployed	−0.208	0.027	0.017	−0.006	−0.035	−0.003
Retired	−0.234	0.031	0.019	−0.007	−0.039	−0.004
Student	−0.398	0.055	0.027*	−0.012	−0.064	−0.006
Jobless other	0.239	−0.027	−0.027	0.006	0.043	0.005
Further controls						
Age	−0.009**	0.001*	0.001*	−0.0003*	−0.001**	−0.0002*
Children	−0.125	0.016	0.011	−0.004	−0.021	−0.002
Female	0.144	−0.019	−0.012	0.004	0.024	0.002
East German	0.300**	−0.036***	−0.029**	0.008***	0.052***	0.005**
Egalitarian attitude	−0.086**	0.011**	0.007**	−0.002**	−0.014**	−0.001**
Risk preference	0.115	−0.015	−0.010	0.003	0.019	0.002
Living in partnership	0.304	−0.039	−0.026	0.009	0.051	0.005
Married	0.116	−0.016	−0.009	0.004	0.019	0.002
Divorced/widowed	0.309	−0.039	−0.027	0.009	0.052	0.005
Union member	−0.129	0.016	0.012	−0.004	−0.022	−0.002
Household head	−0.148	0.019	0.012	−0.004	−0.025	−0.002
Dummy β	−0.369***	0.048***	0.030***	−0.011***	−0.062***	−0.006**
Dummy δ	−0.190	0.024	0.016	−0.006	−0.032	−0.003
Observations	1942					
Pseudo-R^2	0.033					
Wald χ^2 (43)	165.27***					

Note: Results are based on an ordered logit maximum likelihood estimation. The dependent variable is the debt-propensity measure introduced in Section 2. White (1980) robust standard errors are used. Average marginal effects for β and δ are calculated based on change of the respective variable from the lower to the upper bound of the 66% confidence interval. *, **, and *** indicate significance at the 10%, 5%, and 1% level, respectively.

H1: Economic situation: We find that subjective economic well-being and property ownership, our wealth indicator, reveal a statistically significant and theory-consistent association with attitudes toward fiscal consolidation. The marginal effects appear to be of notable size. A one-unit increase in the subjective assessment of personal economic situation increases the likelihood of opting for a large immediate debt reduction by about 2.5 percentage points (pp) and for an even reduction of debt over time by about 1.7 pp; in contrast, the likelihood of opposing a reduction in public debt decreases by more than 3 pp. This result supports previous findings by Stix (2013), who reports that well-to-do respondents strongly support consolidation efforts. Likewise, homeowners are 3 pp more likely to favour immediate consolidation and 4 pp less likely to prefer an unchanged public debt level. Household income and the social class indicator have no significant impact on the debt-propensity indicator. We check the robustness of our finding by considering the monthly net personal income of the respondent instead of household income. Moreover, we replace the income measures with income quartiles and quintiles to investigate the importance of relative income effects. Our results do not change notably.

H2: Time preference: An increase in β and δ, i.e., lower discount rate and greater patience, is associated with a significantly higher likelihood of supporting immediate fiscal consolidation as well as an even reduction of debt over time. Respondents with lower subjective discount rates and greater short-run impatience are more likely to either oppose consolidation efforts or to put off debt reduction to the future. Note that since both β and δ can vary only between 0 and 1, common marginal effects are of limited interpretative value since they refer to a one-unit increase in the respective right-hand side variable. For this reason, we compute marginal effects based on a change from the lower to the upper bound of the 66% confidence interval of β and δ (corresponding to a two-standard-deviation increase). A two-standard-deviation increase in β (δ) increases the likelihood of favouring an immediate debt reduction by about 3.5 pp (3 pp); in contrast, the likelihood of opposing such a reduction decreases by almost 5 pp (4 pp). Thus, our findings fully confirm hypothesis H2, in which a lack of future orientation or myopia is expected to be an important source of voters' debt tolerance. The findings are consistent with findings by Stix (2013), who reports that a higher preference for the present is associated with weaker consolidation preferences.[7]

H3: Information set: We find that respondents who are informed about the (future) costs of deficit spending are more debt averse, supporting the fiscal illusion argument. The

[7] Note that Stix (2013) does not account for the possibility that interviewees may be 'myopic' and apply quasi-hyperbolic discounting. Thus, he does not differentiate between the effects of general forward-lookingness and short-run impatience.

larger the number of correct answers to the three multiple-choice questions, i.e., the better the factual knowledge about debt-related economic measures, the greater the respondent's public debt aversion. The effects are of a notable size: respondents giving one/two/three correct answers are 3.9 pp/5.4 pp/9.5 pp more likely to support prompt consolidation and 5.8 pp/7.6 pp/11.7 pp less likely to prefer public debt at its current level.

H4: Believed fiscal position: Subjective assessment of debt-related economic measures appears to be important as well. The larger a person believes the previous year's deficit to be, the more likely she is to support fiscal consolidation. An increase in the assessment of the previous year's deficit by 1 pp involves a 1.3 pp higher likelihood of favouring an immediate debt reduction. In contrast, the likelihood of opting for an unchanged public debt level decreases by 1.7 pp. Beliefs about the realisations of the interest rate and inflation rate exert no statistically significant influence on attitudes toward fiscal consolidation.

H5: Trust in politicians: Concerning the importance of trust in politicians, only the evaluation of their fiscal competence matters. People who believe that politicians manage tax revenues conscientiously are less likely to favour fiscal consolidation than those who believe that taxes are wasted. A one-unit increase in the respective indicator decreases the likelihood of supporting immediate debt reduction by 1.4 pp. Opinions about politicians' motives, however, appear to be irrelevant.

H6: Party preference: The attitudes toward fiscal consolidation held by supporters of political parties are not significantly different from those of non-voters, the only exception being voters for parties other than those listed. Voters of 'other' parties are not only significantly more debt averse than non-voters, they are also more likely to support fiscal consolidation than are voters for all the parties listed (except NPD voters).[8] This suggests that those who most desire public debt reduction tend to be disappointed by the policy programmes of the established parties, which may also help explain the recent success of a new party, Alternative für Deutschland, which focuses on this type of macroeconomic policy. Linear parameter tests do not indicate any significant differences between supporters of the parties listed.

A few control variables have significant effects: an egalitarian ideology is associated with stronger support for fiscal consolidation and East Germans are significantly more likely to oppose public debt reduction than are West Germans.

[8] This conclusion is based on linear parameter tests. Results are available on request.

To check the robustness of our results and to glean further insights, we apply some modifications to our original specification. First, we replace our ordinal dependent variable, i.e. the debt propensity measure, by a dummy variable taking on the value 1 if a respondent favours public debt reduction and 0 otherwise. The results are presented in Table A1 of the Appendix. Most of our findings remain remarkably robust. Interestingly, the effects of the time preference indicators β and δ become less significant (δ) or even insignificant (β), indicating that time preferences may affect the preferred timing or pace of fiscal consolidation, but not the general sentiment toward public debt.[9]

Finally, we reduce our sample and exclude all respondents who are less than 18 years old. At the federal government level in Germany, citizens younger than 18 years of age are not entitled to vote, which is why they might lack political interest.[10] However, excluding this age group does not affect our findings[11]

4. Individual Attitudes Toward Alternative Consolidation Policies

As shown in Section 2, preferences for alternative consolidation policies show remarkable variation. In this section, we use two approaches to investigate whether the observed differences are associated with specific individual characteristics. First, we consider only the respondents' first choices and estimate a multinominal logit model with 'tax hike' as a base category. Second, we investigate whether a specific consolidation measure is mentioned at all by estimating eight binary choice logit models, one for each consolidation measure. The binary dependent variables take the value 1 if the respective measure was mentioned; 0 otherwise. As regressors, we employ the same variables as in the previous analysis (cf. Section 2.3). Our analysis is explorative, as there is no well-defined theory from which testable hypotheses can be derived.

The estimation results are presented in Tables A2 and A3 in Appendix 4. To economise on space, we concentrate on the most interesting findings. The respondent's economic situation especially affects the general choice between tax-based and expenditure-based consolidation. The higher net household income and social class, the greater the likelihood of favouring a tax hike over almost any other alternative, irrespective of whether we consider only the respondents' most preferred consolidation policy or all three choices. People who are particularly concerned about the present situation oppose a reduction in public spending on economic development and defence. The former effect is intuitive as, e.g.,

[9] Notethat the coefficient of β is almost significant at the 10% level (p-value: 0.107).
[10] At the state level, citizens are entitled to vote once they are 16 years old.
[11] Only 81 respondents in our sample are aged 16 or 17 years. Results are available on request.

spending on business cycle stabilisation falls into this category. In other words, this finding suggests that people with low discount rates are especially concerned about the present state of the economy.

Trust in politicians has a significant influence on the preferences for different consolidation measures. As one might expect, people who do not have confidence in the fiscal competence of politicians are less likely to opt for a tax hike than those who believe that the government manages tax revenues conscientiously. The distrustful prefer spending cuts, especially in the areas of economic development and defence, which can be interpreted as the belief that tax revenues are wasted in these categories. The distrustful are significantly less likely to favour cutting public spending on social security, which suggests that they do not seem to think that tax revenues are wasted in this area.

The respondents' political orientation also appears to be important, at least with respect to the most preferred consolidation measure. Voters of parties other than those listed prefer cutting spending on any policy area over tax hikes in first place.

5. Concluding Remarks

The poor state of public finances in many countries has led to calls for fiscal consolidation. However, debt-reduction plans have often met with stiff public resistance, which is why many governments seem to avoid adopting concrete consolidation measures. This paper identifies the determinants of individual attitudes toward fiscal consolidation and alternative consolidation measures. More precisely, we examine the role of various factors derived from theory-informed hypotheses, namely, personal economic well-being, time preference, fiscal illusion, trust in politicians, and party preference.

Our results support many of the conjectures found in the public choice and political economy literature. People are more likely to support fiscal consolidation the better their economic situation, the more forward-looking and patient they are, the better their knowledge about the costs of deficit spending, and the lower their trust in the government's fiscal competence. However, opinions about the 'appropriate' fiscal adjustment path diverge widely, which is bad news for policy-makers trying to obtain public support for their policies. There is no sign, though, that preferences for alternative consolidation measures are significantly affected by selfish interests, i.e., well-off people prefer tax hikes over almost any alternative consolidation measure, even over spending cuts in social security.

At least two issues are not addressed in our analysis. First, it is debatable whether all respondents who claim to be in favour of public debt reduction can be regarded as 'serious'

consolidation supporters. Although 70% of the German population supports fiscal consolidation, 8% state that the main part of public debt should be reduced at some (unspecified) time in the future, and 13% refuse to specify concrete consolidation measures. This suggests that about 20% of respondents do not take the public budget constraint into account when voicing their opinion, i.e., they support a policy measure only if it involves no costs.

Second, less than 10% of the respondents know the previous year's budget deficit. This suggests that citizens either (i) find it difficult to acquire this information, (ii) are not overly concerned about acquiring information about public deficits, or (iii) do not believe this specific information to be particularly important for their well-being. Further research is needed to differentiate between these alternative interpretations.

Appendix

A.1. Explanatory Variables

HH income	Monthly net household income in €1,000. In the raw dataset, households are sorted into one of 11 income classes. In the empirical analysis, we consider the centre of each class.
Subjective well-being	Subjective assessment of personal economic well-being, ranging from 1 (absolutely dissatisfied) to 5 (absolutely satisfied).
Social class	Indicator combining information about respondents' relative income and occupational status and ranging from 1 (lower class) to 5 (upper class).
Property	Dummy variable taking the value 1 if the respondent lives in her own house or flat and 0 if the house/flat is rented.
Believed deficit	Measure of the respondent's assessment of 2012's federal budget deficit (four potential realisations; measured in percentage points). This variable is computed based on the following question: How large was the budget deficit of the federal government in 2012? 1% □ 3% □ 5% □ 7% □
Believed interest rate	Measure of the respondent's assessment of the interest rate on government bonds with a maturity of 10 years (four potential realisations; measured in percentage points). This variable is computed based on the following question: What is the current interest rate on long-term government bonds (maturity 10 years), approximately? 1.5% □ 3% □ 5.5% □ 10% □
Believed inflation rate	Measure of the respondent's assessment of 2012's inflation rate (four potential realisations; measured in percentage points). This variable is computed based on the following question: How large was the inflation rate in 2012, approximately? 0% □ 2% □ 5% □ 10% □
Knowledge/number of correct answers	Variable measuring the number of correct answers to the three multiple-choice questions about 2012's deficit, the interest rate on government bonds, and 2012's inflation rate.
Public interest	Most politicians in Germany act in line with the general public's interest vs. Most politicians in Germany only serve the interests of particular groups +2: □ +1: □ 0: □ −1: □ −2: □
Long-term orientation	Most politicians are concerned about the country's long-term well-being vs. Most politicians are only concerned about the next elections +2: □ +1: □ 0: □ −1: □ −2: □

Fiscal competence	The government manages tax revenues conscientiously		vs.	The government wastes tax revenues	
	+2: □	+1: □	0: □	−1: □	−2: □
Education	Education level of the respondent, differentiating between lower secondary education (reference category), middle secondary education, and upper secondary education.				
Employment HH head	Employment status of the household head, differentiating between regularly employed (reference category), unemployed, retired, student, and jobless for other reasons.				
Age	Respondent's age in years.				
Children	Dummy variable taking the value 1 if the respondent has children (0 otherwise).				
Female	Dummy variable taking the value 1 if the respondent is female (0 otherwise).				
East German	Dummy variable taking the value 1 if the respondent lives in East Germany (0 otherwise).				
Egalitarian attitude	The state should ensure equal living conditions		vs.	The state should not interfere with people's living conditions	
	+2: □	+1: □	0: □	−1: □	−2: □
Risk preference	See Section 3.2.				
Family status	Family status of respondent, differentiating between single (reference category), living together with a partner, married, and divorced/widowed.				
Union member	Dummy variable taking the value 1 if the respondent is a union member (0 otherwise).				
Household head	Dummy variable taking the value 1 if the respondent is the head of the household she lives in (0 otherwise).				

A.2. Measurement of Risk and Time Preferences

Questionnaire wording: Next, we would like to conduct some experiments concerned with financial decisions. In the first experiment, you make your decisions according to the following table *(Interviewer: Please show the table below)*. In each row you see two alternatives. You can choose between a certain payoff and participation in a lottery, which follows the principle 'all or nothing': You have a 50% chance of winning €1,000 and a 50% chance of winning €0.

You start in row 1 and then proceed row by row. In each row, please choose between the certain payoff (column A) and participation in the lottery (column B). The lottery remains the same in all rows. Only the certain payoff increases from row to row.

	You get… **Safe**		You get… **€1,000 or nothing** Chance of winning 50:50
	A	**or**	**B**
1	€0		Chance of winning €1,000/€0
2	€100		Chance of winning €1,000/€0
3	€200		Chance of winning €1,000/€0
4	€300		Chance of winning €1,000/€0
5	€400		Chance of winning €1,000/€0
6	€500		Chance of winning €1,000/€0
7	€600		Chance of winning €1,000/€0
8	€700		Chance of winning €1,000/€0
9	€800		Chance of winning €1,000/€0
10	€900		Chance of winning €1,000/€0

Interviewer: Please start with row 1 and the question 'What do you choose? €0 safe or chance of winning €1,000/€0?'. If the interviewee chooses option B, please proceed to row 2 and the question 'What do you choose? 100€ or a chance of winning 1,000€/0€?'. The experiment ends when the interviewee chooses option A for the first time. Please write down the number of the row where the respondent chose option A for the first time.

Option A was first chosen in row number: ☐

Questionnaire wording: In the next experiment you decide according to the following table (*Interviewer: Please show the table below*). In each row, you see two alternatives. You can choose between a certain payoff of €1,000, which is paid to you **immediately** and a higher certain payoff, which will be paid to you **in 6 months**.

You start in row 1 and then proceed row by row. In each row, please choose between the payoff of €1,000 to be paid **immediately** (column A) and the higher payoff to be paid **in 6 months** (column B). The payoff on the left remains the same in all rows. Only the payoff on the right increases from row to row.

	You get… **Immediately** **A**	**or**	You get… **In 6 month** **B**
1	€1,000		€1,000
2	€1,000		€1,010
3	€1,000		€1,020
4	€1,000		€1,030
5	€1,000		€1,050
6	€1,000		€1,075
7	€1,000		€1,100
8	€1,000		€1,150
9	€1,000		€1,200
10	€1,000		€1,300
11	€1,000		€1,400
12	€1,000		€1,500
13	€1,000		€1,750
14	€1,000		€2,000

Interviewer: Please start with row 1 and the question 'What do you choose? €1,000 immediately or €1,000 in 6 months?'. If the interviewee chooses option A, please proceed to row 2 and the question 'What do you choose? €1,000 immediately or €1,010 in 6 months?'. The experiment ends when the interviewee chooses option B for the first time. Please write down the number of the row where the interviewee chose option B for the first time.

Option B was first chosen in row number: ☐

Questionnaire wording: In the last experiment, you decide according to the following table (*Interviewer: Please show the table below*). In each row, you see two alternatives. You can choose between a certain payoff of €1,000, which is paid to you **in 6 months** and a higher certain payoff, which will be paid to you **in 12 months**.

You start in row 1 and then proceed row by row. In each row, please choose between the payoff of €1,000 to be paid **in 6 months** (column A) and the higher payoff to be paid **in 12 months** (column B). The payoff on the left remains the same in all rows. Only the payoff on the right increases from row to row.

	You get… **In 6 months** **A**	**or**	You get… **In 12 months** **B**
1	€1,000		€1,000
2	€1,000		€1,010
3	€1,000		€1,020
4	€1,000		€1,030
5	€1,000		€1,050
6	€1,000		€1,075
7	€1,000		€1,100
8	€1,000		€1,150
9	€1,000		€1,200
10	€1,000		€1,300
11	€1,000		€1,400
12	€1,000		€1,500
13	€1,000		€1,750
14	€1,000		€2,000

Interviewer: Please start with row 1 and the question 'What do you choose? €1,000 in 6 months or €1,000 in 12 months?'. If the interviewee chooses option A, please proceed to row 2 and the question 'What do you choose? €1,000 in 6 months or €1,010 in 12 months?'. The experiment ends when the interviewee chooses option B for the first time. Please write down the number of the row where the interviewee chose option B for the first time.

Option B was first chosen in row number: ☐

A.3. Checks for Robustness

Table A1: Determinants of individual attitudes toward fiscal consolidation—binary choice logit estimation

Variables	**Coefficient**	**Standard Error**	**Average marginal effect**
Economic situation			
HH income	0.054	0.086	0.009
Subjective well-being	0.214***	0.061	0.038
Social class	0.108	0.092	0.019
Property	0.260**	0.116	0.046
Time preferences			
β	0.556	0.345	0.036
δ	0.398*	0.232	0.035
Knowledge			
One correct answer	0.038	0.176	0.007
Two correct answers	0.196	0.228	0.035
Three correct answers	0.747**	0.354	0.115
Believed deficit	0.102***	0.037	0.018
Believed interest rate	−0.010	0.032	−0.002
Believed inflation rate	0.004	0.033	0.001
Political trust			
Public interest	0.022	0.069	0.004
Long-term orientation	0.056	0.070	0.010
Fiscal competence	−0.165**	0.071	−0.029
Party preference			
Leftist party	0.120	0.239	0.021
Pirates	−0.166	0.384	−0.032
SPD	0.002	0.158	0.000
Green party	−0.058	0.183	−0.011
CDU	0.152	0.171	0.027
FDP	0.035	0.319	0.006
NPD	1.063	0.730	0.150
Other	1.078***	0.340	0.151
Education			
Middle second. school	0.302**	0.134	0.054
Higher second. school	0.291	0.199	0.053
Employment HH head			
Unemployed	0.492**	0.231	0.082
Retired	0.300*	0.179	0.052
Student	1.018**	0.441	0.155
Jobless other	−0.189	0.334	−0.036
Observations	2042		
Pseudo-R2	0.061		
Wald $\chi 2$ (42)	133.64***		

Note: Results are based on a logit maximum likelihood estimation. Coefficients of control variables are omitted to save space. The dependent variable is a dummy with value 1 if the respondents favours public debt reduction (0 otherwise). White (1980) robust standard errors are used. Average marginal effects for β and δ are calculated based on change of the respective variable from the lower to the upper bound of the 66% confidence interval. *, **, and *** indicate significance at the 10%, 5%, and 1% level, respectively.

A.4. Individual Attitudes Toward Alternative Consolidation Policies

Table A2: Determinants of individual attitudes toward different fiscal consolidation measures—multinominal logit estimation

Variables	**Social Security**	**Public Safety**	**Education**	**Infrastructure**	**Econ. Develop.**	**Defence**	**Other Areas**
Economic situation							
HH income	−0.503**	−0.816**	−0.384	−0.726**	−0.583**	−0.601***	−0.561**
Subjective well-being	−0.114	−0.237	−0.221	−0.015	−0.199	−0.160	−0.290
Social class	−0.619**	−0.485	−0.532	−0.407	−0.661**	−0.569**	−0.667**
Property	0.642*	1.046*	0.479	1.348**	1.275***	0.689**	0.661**
Time preferences							
β	−0.435	2.496	−2.638*	0.926	1.151	0.191	−0.492
δ	1.634**	2.189*	0.646	1.477	2.582***	1.686**	1.410*
Knowledge							
One correct answer	−1.253**	−0.745	−1.382*	−0.946	−0.706	−0.530	−0.513
Two correct answers	−1.376**	−2.098**	−0.389	−2.235**	−1.543**	−0.854	−0.999
Three correct answers	−2.170**	−1.259	−0.900	−1.088	−1.060	−1.264	−1.654*
Believed deficit	−0.151	−0.421***	−0.099	−0.203	−0.045	−0.145*	−0.166*
Believed interest rate	−0.052	0.082	0.043	0.151	0.046	−0.007	0.044
Believed inflation	0.160	0.173	0.199	0.235	0.141	0.126	0.190*
Political trust							
Public interest	0.079	−0.232	0.246	−0.005	0.274	−0.077	0.049
Long-term orientation	−0.272	0.010	0.185	0.069	−0.244	−0.137	−0.062
Fiscal competence	0.012	−0.029	−0.096	−0.233	−0.351*	−0.230	−0.267
Party preference							
Leftist party	−2.744***	−0.785	−1.911	−16.231***	−1.019	−1.059**	−1.038*
Pirates	−15.470***	−15.143***	0.886	1.787	0.748	0.289	0.707
SPD	−0.376	0.362	0.664	0.780	−0.163	−0.127	−0.156
Green party	−0.730	−0.319	−1.645	0.092	−0.148	−0.121	−0.449
CDU	−0.061	0.023	−0.324	0.249	−0.277	−0.248	−0.329
FDP	1.867*	1.130	−14.545***	1.508	0.946	0.764	0.342
NPD	14.377***	−1.661*	15.609***	−1.243	14.881***	13.787***	14.957***
Other	14.951***	14.585***	14.651***	15.689***	14.458***	14.766***	15.289***

Table A2 (continued)

Variables	Social Security	Public Safety	Education	Infrastructure	Econ. Develop.	Defence	Other Areas
Education							
Middle second. school	−0.220	−0.036	−1.168**	−0.037	−0.531	−0.076	−0.618*
Higher second. school	−0.191	0.089	−0.884	0.324	−1.201**	−0.017	−0.440
Employment HH head							
Unemployed	−0.266	0.703	−0.384	−1.198	−0.289	0.220	−1.253
Retired	−0.926*	−1.285*	0.875	−0.261	−1.034**	−0.765*	−0.726
Student	−0.707	0.684	−1.683	1.162	0.474	−0.021	0.252
Jobless other	0.602	−0.066	0.577	−15.200***	1.026	−0.239	0.389
Further controls							
Age	0.002	−0.008	−0.057**	−0.029	0.017	0.012	−0.002
Children	0.460	0.468	0.319	0.458	0.562	0.457	0.835**
Female	−0.195	−0.094	0.007	−0.284	−0.196	−0.251	−0.560*
East German	−0.242	−0.362	0.616	0.509	−0.565	−0.217	−0.314
Egalitarian attitude	−0.361***	−0.265	−0.311	0.089	−0.228	0.028	−0.082
Risk preference	−0.530**	0.155	−0.606*	−0.464	−0.089	−0.307	−0.254
Living in partnership	0.807	0.735	−0.140	0.691	−0.709	0.245	0.350
Married	−0.414	−0.506	0.398	0.522	−0.546	−0.159	−0.224
Divorced/widowed	−0.471	0.492	0.361	0.220	−0.467	−0.010	−0.172
Union member	−0.016	0.823	0.533	0.429	−0.383	0.410	−0.018
Household head	0.160	0.797	0.178	0.718	0.375	0.622	0.427
Dummy β	0.300	0.100	0.089	1.043	0.539	0.759**	0.511
Dummy δ	−0.578	−0.768	−1.419**	−1.700**	−0.995**	−0.817**	−0.723*
Constant	4.080	−1.119	5.139	−0.466	0.116	2.375	3.552
Observations	1525						
Pseudo-R^2	0.106						

Note: Results are based on a maximum likelihood, multinominal logit estimation. The reference category is ‘tax hike’. White (1980) robust standard errors are used. *, **, and *** indicate significance at the 10%, 5%, and 1% level, respectively.

Table A3: Determinants of individual attitudes toward different fiscal consolidation measures—binary choice logit estimation

Variables	Tax Hike	Social Security	Public Safety	Education	Infrastructure	Econ. Develop.	Defence	Other Areas
Economic situation								
HH income	0.030*	−0.005	−0.006	0.008	−0.024	0.005	0.023	−0.016
Subjective well-being	0.008	0.016	−0.017**	−0.005	0.005	−0.021	0.011	−0.012
Social class	0.031*	−0.012	−0.007	0.002	−0.018	0.003	−0.003	−0.035
Property	−0.025	−0.033	−0.000	0.010	−0.015	0.063**	−0.035	−0.006
Time preferences								
β	0.030	0.079	0.006	−0.012	0.021	0.080***	0.123***	0.043
δ	−0.052*	−0.008	0.003	0.008	0.023	0.029	0.030	−0.008
Knowledge								
One correct answer	−0.013	−0.055	−0.009	−0.050***	−0.039	−0.001	0.114***	0.043
Two correct answers	−0.023	−0.073	−0.025	−0.011	−0.054	−0.016	0.091*	0.031
Three correct answers	−0.064	−0.082	0.003	0.013	−0.061	0.057	0.146**	0.071
Believed deficit	−0.009	0.001	−0.006	0.002	−0.002	0.015*	0.012	0.012
Believed interest rate	−0.007	−0.013**	0.002	0.002	0.008	−0.007	−0.016**	−0.008
Believed inflation	−0.023***	0.005	−0.001	0.001	−0.008	0.010	−0.001	−0.002
Political trust								
Public interest	0.010	−0.023*	0.014	0.007	0.000	0.039***	0.001	0.009
Long-term orientation	−0.005	−0.011	−0.005	0.010	0.015	−0.013	−0.037***	−0.025
Fiscal competence	0.024*	0.030**	0.012	0.003	−0.007	−0.035**	−0.027*	−0.032**
Party preference								
Leftist party	0.070	−0.037	−0.032	−0.010	−0.039	0.073	0.043	0.145**
Pirates	0.012	−0.001	0.033	0.049	−0.089**	0.028	−0.062	0.207**
SPD	−0.001	0.001	0.011	0.006	0.036	0.057	0.006	0.086**
Green party	−0.037	−0.031	−0.022	−0.054***	0.044	0.040	0.014	0.042
CDU	0.014	0.057	0.004	−0.017	−0.019	−0.005	−0.002	0.094**
FDP	0.011	0.288***	−0.007	−0.017	−0.010	−0.006	0.035	−0.021
NPD	0.122	0.016	0.047	0.030	−0.005	−0.045	−0.003	0.101
Other	−0.050	0.025	−0.039	−0.011	0.016	−0.009	−0.165***	0.043

Table A3 (continued)

Variables	Tax Hike	Social Security	Public Safety	Education	Infrastructure	Econ. Develop.	Defence	Other Areas
Education								
Middle second. school	0.015	0.021	0.006	−0.019	0.003	0.033	0.058*	0.029
Higher second. school	0.093**	0.039	−0.002	−0.036	0.004	0.044	0.091**	−0.033
Employment HH head								
Unemployed	0.082	−0.034	0.066*	−0.014	0.021	−0.035	0.107***	−0.048
Retired	0.056	−0.015	0.034	0.050*	0.017	0.001	−0.026	−0.065
Student	0.023	−0.077	−0.043	−0.063***	0.055	0.120	−0.054	−0.124
Jobless other	−0.002	−0.017	0.011	−0.037	0.073	0.030	−0.045	0.034
Further controls								
Age	−0.001	0.0003	−0.001*	−0.003***	−0.001	0.002	0.002**	−0.0002
Children	0.016	−0.0001	−0.055**	−0.010	0.0002	−0.052	−0.017	0.083**
Female	0.000	−0.028	0.003	0.021	−0.020	−0.055*	−0.023	−0.044
East German	0.033	0.028	0.005	0.044*	0.038	−0.080***	0.018	0.026
Egalitarian attitude	0.005	−0.031***	−0.006	−0.005	0.019**	−0.004	0.032***	0.010
Risk preference	−0.006	−0.011	0.001	−0.002	−0.030**	−0.003	−0.020	0.019
Living in partnership	−0.013	−0.014	0.017	−0.024	0.002	0.065	−0.003	−0.137**
Married	0.004	−0.053	0.038	0.031	0.011	0.042	−0.002	−0.021
Divorced/widowed	−0.038	−0.060	0.005	0.017	0.027	0.121**	0.044	−0.015
Union member	0.039	−0.006	0.019	0.019	0.030	−0.003	0.052	−0.027
Household head	−0.020	0.005	−0.020	−0.043***	0.044*	0.074**	0.020	0.028
Dummy β	−0.019	−0.013	0.008	0.005	0.030	0.021	0.039	0.030
Dummy δ	0.087**	0.044	−0.038*	−0.036**	−0.011	0.047	0.092***	0.043
Observations	1525	1525	1525	1525	1525	1525	1525	1525
Pseudo-R^2	0.052	0.048	0.063	0.103	0.046	0.038	0.078	0.037
Wald χ^2 (42)	68.59***	73.62***	69.23***	80.96***	54.60*	66.53***	132.76***	72.37***

Note: Results are based on a binary choice, logit maximum likelihood estimation. The table contains average marginal effects. The dependent variable equals 1 if the respective consolidation measure was mentioned; 0 otherwise. White (1980) robust standard errors are used. Average marginal effects for β and δ are calculated based on change of the respective variable from the lower to the upper bound of the 66% confidence interval. *, **, and *** indicate significance at the 10%, 5%, and 1% level, respectively.

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Bernd Hayo and Florian Neumeier

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Coordination: Bernd Hayo • Philipps-University Marburg
Faculty of Business Administration and Economics • Universitätsstraße 24, D-35032 Marburg
Tel: +49-6421-2823091, Fax: +49-6421-2823088, e-mail: hayo@wiwi.uni-marburg.de

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Bernd Hayo and Florian Neumeier

Philipps-University Marburg

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Corresponding author:

Bernd Hayo
School of Business and Economics
Philipps-University Marburg
D-35032 Marburg
Germany
Phone: +49–6421–2823091
Email: hayo@wiwi.uni-marburg.de

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The Debt Brake in the Eyes of the German Population

Abstract

In response to the recent sovereign debt crisis, the member states of the European Union agreed to enact balanced budget rules in their national legislation. However, little is known about the public's opinion of balanced budget rules. To fill this gap, we conducted a survey among 2,000 representatively chosen German citizens. Our findings suggest that 61% of the German population supports the debt brake, whereas only 8% oppose it. However, approval rates differ notably among various subgroups of the population. The debt brake enjoys greater support among high-income earners and among those well-informed about the future costs of deficit spending. People who do not trust politicians would like to see the government's hands tied even more tightly. Opinions about the debt brake also differ markedly across the supporters of different political parties.

JEL: E02; E62; H62; H63

Keywords: Debt brake; balanced budget rule; European Fiscal Compact; survey; Germany.

1. Introduction

The recent financial crisis and associated economic downturn have imposed a huge burden on the public finances of most developed countries. Between 2007 and 2012, the average debt-to-GDP ratio increased from 59% to 85% in EU countries and from 74% to 111% in OECD countries.[1] This development has driven quite a number of European countries to the brink of insolvency and raised serious concerns about the stability of the euro area. A popular proposal aimed at restoring investor confidence and ensuring sustainable public finances is to limit governments' discretionary leeway by committing to rule-based fiscal policy. Debt brakes are believed to be an especially effective and credible commitment device (e.g., Poterba and Rueben, 2001; Alesina and Bayoumi, 1996). As a response to the sovereign debt crisis, most member states of the European Union signed the European Fiscal Compact, which mandates the enactment of a balanced budget law in their national legislation.[2]

Debt brakes are not without controversy, however. On the one hand, debt brakes appear to be frequently undermined by creative accounting practices. For example, von Hagen and Wolff (2006) report that EU countries frequently use stock-flow adjustments to hide budget deficits in order to comply with the criteria of the Stability and Growth Pact. Keynesian economists are generally critical of debt brakes, given that this school of thought emphasises the benefits of expansionary fiscal policies, especially during economic downturns (e.g., Hein and Truger, 2013). Warnings about the perils of balanced budget rules are particularly vehement in the context of the European Monetary Union, as fiscal policy remains the only national macroeconomic instrument for offsetting asymmetric shocks across countries. Moreover, balanced budget rules may have an adverse effect on economic growth, as they could trigger huge fluctuations in aggregate economic activity (Schmitt-Grohé and Uribe, 1997).

Germany recently adopted a balanced budget law via constitutional amendment (Art. 109(3) Grundgesetz). From 2016 onward, the public budget deficit at the federal government level must not exceed 0.35% of GDP. Exceptions can be made only in times of economic crises or in the event of a natural disaster. The German state governments (*Bundesländer*) are required to balance their budgets beginning in 2020; the same exceptions applicable at the federal level also apply to at this level of government.

[1] OECD Economic Outlook No. 95.
[2] Exceptions are the United Kingdom and the Czech Republic, which did not sign the European Fiscal Compact.

There is a large literature evaluating the effectiveness of fiscal rules.[3] However, despite the far-reaching consequences debt brakes have for fiscal policy and the potential perils they pose, there is a lack of evidence on how the electorate evaluates debt brakes. A balanced budget rule ties the hands of elected politicians who are supposed to represent their voters' interests and hence also constrains the electorate's scope for decision-making. Thus, people should not be indifferent about the implementation of such a rule. To elicit the German public's attitude toward the debt brake, we designed a survey that was carried out by the GfK, a private survey institute. In the first quarter of 2013, roughly 2,000 German citizens aged at least 14 were interviewed face-to-face with the help of pen pads.

Our findings suggest that a vast majority of the German population supports the balanced budget rule in its current form; the share of proponents is roughly 61%. Only 8% of the respondents oppose a debt brake; 17% do not think that the current debt brake is a strong enough constraint, believing that government should not incur any additional debt at all. Our dataset contains additional information about the respondents, allowing us to examine the correlates of people's attitudes toward the debt brake. Results based on cross-tabulations and multinominal regression analysis indicate that support for the balanced budget rule is stronger among high-income respondents and those well-informed about the costs of deficit spending. People who do not trust politicians would like to see the government's hands tied even more tightly. Opinions about the debt brake also differ notably across the supporters of different political parties. People who vote for the CDU and FDP, for example, are more likely to approve the debt brake in its current form than are non-voters or people who vote for 'fringe' parties. However, hardly any subgroup of the German population opposes introduction of a balanced budget rule in general.

Our paper relates to several studies that use survey data to elicit public attitudes toward fiscal deficits and fiscal consolidation. Hayo and Neumeier (2013), as well as Heinemann and Henninghausen (2012), investigate determinants of individual attitudes toward fiscal consolidation in Germany, Stix (2013) focuses on Austria, and Blinder and Krueger (2004) employ survey data from the United States. However, this strand of the literature evaluates public attitudes toward the *ad hoc* implementation of fiscal consolidation measures. In contrast, debt brakes do not grant much flexibility, as compliance with the rule is mandatory. Thus, supporting consolidation efforts *occasionally* is not the same as opting for a

[3] For example, Poterba (1994), Bohn and Inman (1996), and Alesina and Bayoumi (1996) provide evidence for US states, Imbeau and Tellier (2004) for Canada, Perotti and Kontopoulos (2002) and Guichard et al. (2007) for OECD countries, and Hallerberg and von Hagen (1999) as well as de Haan et al. (1999) for EU countries.

rule committing politicians to engage in fiscal policy at all times. To the best of our knowledge, only Blinder and Holtz-Eakin (1984) study people's attitudes toward a balanced budget rule. The authors use data from two public opinion polls conducted in the United States to elicit the population's opinion on a proposed balanced budget amendment to the constitution. However, their dataset contains only a few socio-demographic variables, thus providing only limited insight into the correlates of people's attitudes toward balanced budget rules.

The remainder of this paper is organised as follows. The next section introduces the survey instrument and presents some descriptive statistics; it also contains an examination of the correlates of individual attitudes toward the German debt brake by means of cross-tabulations. Section 3 presents the results of a multinominal logit estimation, which allows us to take potential collinearity between our covariates into account. Section 4 concludes.

2. The German Public's Opinion on the Debt Brake and its Correlates

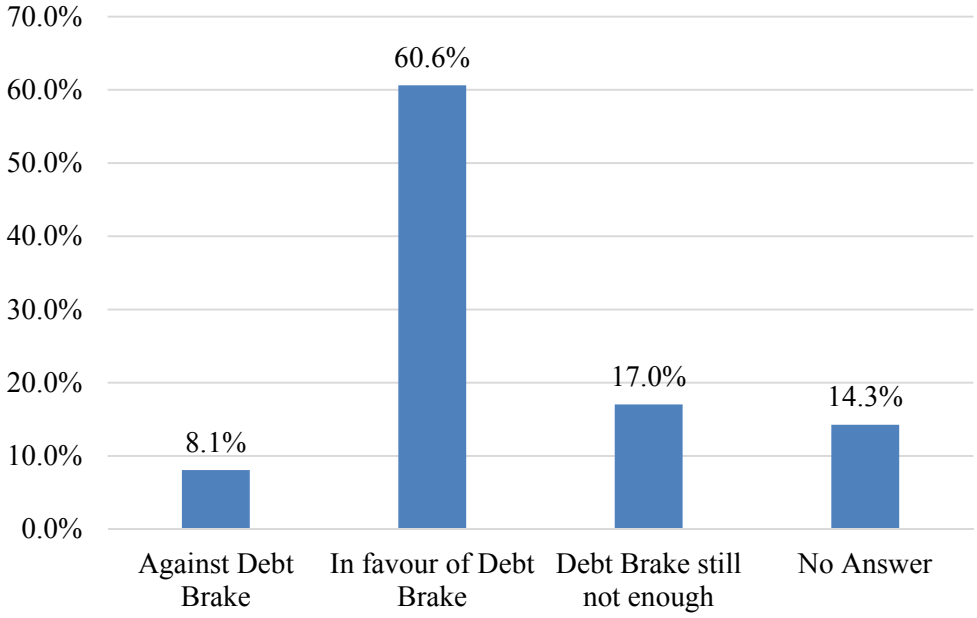
Our survey data are based on a novel questionnaire of our own design that was conducted by the GfK, one of the biggest private survey institutes in Germany. Fieldwork was done in February 2013, at which time a total of 2,042 representatively chosen German citizens aged at least 14 were interviewed face-to-face with the help of pen pads.

As part of the survey, interviewees were asked about their opinion on the German debt brake, which was introduced in 2009 in the form of a constitutional amendment. According to this amendment, the German federal government is not allowed to run an annual structural deficit of more than 0.35% of GDP from 2016 onward. To simplify matters for the respondents, we refrained from using the term 'structural deficit' and from mentioning '0.35% of GDP' when designing the wording of the item. Instead, we stated that the government can take on 'almost no additional public debt'. The English translation of the exact wording of the question is as follows:

> *In 2016 the federal debt brake comes into force. From this moment on, the federal government can take on almost no additional public debt. Exemptions are allowed only in times of economic crises or natural disasters. What is your opinion on the debt brake?*

The respondents could choose between four answers: (1) 'I am against the debt brake—the incurrence of public debt should not be restricted', (2) 'I am in favour of the debt brake in the aforementioned form', (3) 'The debt brake is still not enough—the government should not be allowed to incur public debt at all', or (4) 'Don't know'. Figure 1 illustrates the distribution of answers.

Figure 1: Public attitudes toward the German debt brake—distribution of answers



We find that the German debt brake enjoys wide public support: 61% of our respondents approve the balanced budget rule in its current form and only 8% oppose a balanced budget rule in general; 17% even think that the debt brake does not go far enough, believing that the government should not incur any additional debt. Only 14% have no opinion, indicating high public interest in what is a potentially complicated topic. Thus, the idea of tying the government's hands in order to prevent it from accumulating public debt has many proponents.

However, the aggregate data paint an incomplete picture, as various subgroups of the population may differ with respect to their view on the debt brake. Public debt incurrence can serve very different purposes; it can provide a means to redistribute resources over time and groups of people, it can work to stabilise the business cycle, it can be employed strategically by opportunistic policymakers, and so forth. The public choice and political economy literature makes several conjectures about correlates of people's attitudes toward public debt incurrence. Similarly, attitudes toward a rule compelling the government to balance the budget could vary along similar dimensions, as people may have different opinions about the advantages of discretionary fiscal policy or benefit to different degrees from public debt incurrence. Our dataset allows us to empirically test several of these conjectures, as we also collected socio-demographic information about the respondents. To elicit attitudes toward the debt brake within various subgroups of the German population, we report cross-tabulations

containing conditional distributions of answers. In each case, we also report Pearson's χ^2 to evaluate the statistical significance of the correlations.

2.1. Economic Well-Being

According to Cukierman and Meltzer (1989), public debt incurrence is an instrument for reallocating resources over time or even generations. An interesting conclusion of their analysis is that people who are relatively worse-off may be less reluctant to live at the expense of future generations and more likely to favour deficit spending. Hayford (1989) emphasises the importance of capital market restrictions. In a neo-Ricardian world, public debt is a way for the current generation of consumers to circumvent a binding credit constraint. Arguably, people with low income and low asset endowment are more likely credit constrained and thus more in favour of public debt incurrence. To evaluate the importance of the interviewees' economic situation to their attitudes toward the debt brake, we collected information on (i) the respondent's net monthly household income (in €1,000), (ii) a household's real assets (i.e., a dummy indicating whether the respondent lives in a self-owned flat/house or a rented house/flat), and (iii) the respondent's subjective assessment of his or her economic situation, ranging from 1 (absolutely dissatisfied) to 5 (absolutely satisfied).

Table A1 in the Appendix illustrates the association between attitude toward the debt brake and the respondent's economic situation. To measure the influence of household income, we group our respondents into three categories: low-income households with a net monthly income of less than €1,500; medium-income households with incomes between €1,500 and €3,500; and high-income households with income above €3,500. Our results show that economic well-being increases approval of the debt brake: 55% of low-income respondents support the balanced budget rule; for high-income respondents, the share is 68%. The association with the respondents' subjective assessment of their personal well-being is even stronger. Only 41% of those who state that they are absolutely dissatisfied with their economic situation support the debt brake, whereas those who are satisfied or absolutely satisfied have an approval rate of above 60%. Comparing house owners and renters, we find a similar result: the approval rate for the debt brake is 62% for the former group and 59% for the latter. However, we must emphasise that people reporting low income, no house ownership, or low economic well-being do not generally oppose a balanced budget rule—quite the reverse: they are more likely to opt for an even stricter balanced budget rule that would prevent the government from incurring any additional public debt at all. This is strong

empirical evidence against the hypothesis put forward in the literature that poor people are more prone toward deficit spending.

2.2. Economic Literacy

There is a great deal of evidence in the public choice literature supporting the idea that attitudes toward deficit spending are related to economic literacy. People who suffer from 'fiscal illusion', that is, who lack information about the costs associated with public debt incurrence, are believed to be more tolerant of fiscal deficits (e.g., Buchanan and Wagner, 1977). Based on this reasoning, we expect that economically 'literate' people are more likely to support a balanced budget rule so as to prevent the government from incurring public debt. To elicit the respondents' economic literacy, we employed three indicators assessing the interviewees' knowledge about public-debt-related economic measures. We asked about (i) the size of the federal government's budget deficit in 2012 (in relation to GDP), (ii) the current interest rate on government bonds with a maturity of 10 years, and (iii) 2012's inflation rate. In each case, respondents could choose between four answers. As an indicator of the respondents' degree of economic literacy, we count the number of correct answers. We expect that better-informed respondents are more likely to favour a balanced budget rule, as they have a better understanding of the costs related to public debt incurrence.

In line with our prior, our findings suggest that higher economic literacy is associated with a greater likelihood of supporting the debt brake (see Table A2 in the Appendix). The approval rate among the interviewees who gave one, two, or three correct answers is, respectively, 10 percentage points (pp), 13 pp, and 7 pp larger compared to that of those who gave no correct answer. Thus, the relationship between knowledge and support appears to be nonlinear. About 20% of those who are poorly informed did not express an opinion about the debt brake, indicating that this relationship may be mediated by a lack of political interest. Only one-third of our respondents gave at least two correct answers; given that the expected number of correct answers is one if interviewees simply guess randomly, this result suggests that the public's knowledge about debt-related economic measures is somewhat weak.

2.3. Believed Fiscal Position

Subjective assessment of economic conditions may play a crucial role in people's attitude toward the debt brake as people tend to act on the information set they have, at least as long as they believe it to be accurate. Thus, if a person *thinks* that the government is spending beyond its limits and debt-servicing costs are high, she may be more likely to support a debt brake.

We use the answers to the multiple-choice knowledge questions as an indicator for the respondents' *beliefs* about the realisation of debt-related economic measures, irrespective of whether they are actually correct.

The results are outlined in Table A3. The answers to all three multiple-choice questions are significantly related to attitudes toward the debt brake. Respondents who believe the past year's deficit and current interest rate to be particularly large are less likely to oppose the debt brake and more likely to opt for an even stricter balanced budget rule. Only 184 (9%) of our respondents knew that the federal government's budget deficit in 2012 was about 1%, indicating again that German citizens are not well-informed about fiscal policy. The association between attitudes toward the debt brake and the believed inflation rate is less clear. People who falsely believe that 2012's inflation rate was particularly low are less likely to support the debt brake than are those who falsely believe it to equal 5%, but more likely to approve it than those who think it was extraordinarily large (i.e., 10%).

2.4. Time Preferences

According to Barro's (1979) tax-smoothing hypothesis, benevolent governments ought to incur fiscal deficits during recessions and consolidate the public budget in times of economic recovery. However, whether such a course of fiscal policy is in the (representative) voter's interest, strongly depends (inter alia) on her time preferences. The crucial assumption here is that the discount function applied by the (representative) individual to evaluate the welfare effect of future fiscal policies corresponds to the yield curve of government bonds. There are two frequently observed anomalies in intertemporal decision-making that challenge this view. First, people's subjective discount factors between two consecutive periods are typically larger than the corresponding interest rate, indicating that they are less forward-looking than they are assumed to be. Second, people are especially impatient in the short run, commonly referred to as 'myopia' (e.g., Thaler and Shefrin, 1981; Ainslie, 1975). We expect that people who are less forward-looking (i.e., who apply lower discount rates) and particularly impatient in the short run show will be less supportive of a balanced budget rule (cf. Huber and Runkel, 2008).

The survey contained two experiments that allow us to assess the interviewees' time preferences.[4] In the first experiment, respondents were asked to choose between a safe payoff

[4] A detailed description of these experiments is provided in Hayo et al. (2014). The setup and wording of the experiments are taken from the questionnaire of the German Socioeconomic Panel (SOEP), where the experiment was incentivised. Since the distribution of answers in our data is very similar to the one in the SOEP

of €1,000 paid immediately and a higher payoff of €$X_{i,6}$ paid in six months. In the second experiment, the choice is between a safe payoff of €1,000 paid in six months and a higher payoff of €$X_{i,12}$ paid in 12 months. The respondents' choices of $X_{i,6}$ and $X_{i,12}$ are then used to compute (i) the marginal rate of intertemporal substitution between two consecutive future periods, i.e., $\beta = 1{,}000/X_{i,12}$, and (ii) the respondents' degree of short-run impatience, defined as $\delta = X_{i,12}/X_{i,6}$ (cf. Angeletos et al., 2001; Laibson, 1997).

In Table A4 of the Appendix, we sort respondents based on their degree of forward-lookingness, differentiating between low ($\beta \leq 0.5$), medium ($0.5 < \beta \leq 0.9$), and high ($\beta > 0.9$) future orientation. We further discriminate between myopic ($\delta < 1$) and non-myopic ($\delta \geq 1$) respondents, depending on the realisation of δ. A comparison of the distribution of answers by these groups reveals no clear association between time preference and attitude toward the debt brake. Respondents with a medium degree of future orientation are more likely to support the debt brake than those with low or high future orientation and less likely to state that the debt brake is not sufficient. The relationship between our indicator for myopia and attitudes toward the debt brake is statistically insignificant.

2.5. Risk Attitudes

Critics of debt brakes often emphasise that lack of sufficient fiscal leeway may limit the government's scope for fiscal stimuli during economic downturns. The disadvantages of balanced budget rules are believed to be particularly severe in the context of the European Monetary Union, as fiscal policy is the only national macroeconomic instrument for offsetting asymmetric shocks (e.g., Hein and Truger, 2013). Arguably, perception of the perils of a debt brake may be related to people's risk attitudes. People who are highly risk averse, and thus likely to be more concerned about adverse economic shocks, might regard sufficient fiscal leeway as relatively more important. We thus expect that risk-averse people are more likely to oppose a debt brake or favour a less strict balanced budget rule, whereas those who are relatively risk prone ought to be more supportive of the notion that the German debt brake is insufficient.

We assessed the interviewees' risk attitudes by conducting a simple experiment. Respondents were confronted with the choice of either receiving a safe payoff of €X or taking part in a lottery in which they could win either €1,000 or nothing. The odds are 50:50. The

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data, we are confident that the lack of a material incentive in our version of the experiment had no notable effect on the respondents' choices.

choice of X is then used to compute a measure of the respondent's risk attitude λ, ranging from −1 (maximum risk aversion) to +1 (maximum risk propensity).[5]

In Table A5 in the Appendix, we sort the respondents into three categories: respondents with a risk attitude parameter λ of less than −0.2 are considered to be risk averse, those with a parameter value between −0.2 and 0.2 are risk neutral, and those with a value of λ of larger than 0.2 are risk prone. Our findings indeed suggest that people who can be considered as particularly risk prone are more likely to agree with the notion that the government should not incur any additional debt at all. The share of respondents who agree with this view is 26% among the risk prone and 15% among the risk averse. In contrast, 65% of risk-averse interviewees support the debt brake in its actual form, whereas the share of proponents among the risk-prone interviewees is only 56%.

2.6. Trust in Politicians

Trust in politicians could be a particularly important determinant of individual attitudes toward fiscal rules. Several political economy approaches assume that public debt is used as a strategic instrument by opportunistic policymakers to pursue selfish interests.[6] Arguably, voters suspicious of politicians' motives are more likely to prefer fiscal rules over discretionary leeway and thus be in favour of a balanced budget rule. We sought to capture different dimensions of trust in politicians by confronting the interviewees with three sets of contradictory statements. Specifically, we asked the respondents whether they believe that politicians (i) act according to the general public interest vs. only in the interest of particular groups, (ii) are concerned about the country's long-term well-being vs. only care about winning the next election, and (iii) manage tax revenues conscientiously vs. are wasteful with tax revenues. In each case, the interviewees were asked to use a five-point scale to indicate with which statement they most agree. The scale ranges from +2 (indicating strong agreement with the positive statement) to −2 (indicating strong agreement with the negative statement).

To evaluate the association between *trust in politicians* and approval of the debt brake, we compute an average trust score for each respondent. We consider an average trust score of equal or less than −1 as low, a score between −1 and +1 as medium, and a score equal or larger than +1 as high. Table A6 shows the relationship between trust in politicians and attitudes toward the debt brake. In line with our expectations, the distribution of answers

[5] The risk attitude parameter λ is computed as $(X-500)/500$.

[6] Such approaches include political budget cycle theory and rent-seeking approaches, as well as work by Persson and Svensson (1989) and Alesina and Tabellini (1990), in which the government is expected to have time-inconsistent preferences.

suggests that people characterised by low trust in politicians tend to regard the current balanced budget rule as insufficient; 20% of these respondents opt for a rule that prevents the government from incurring any debt at all. In comparison, the share interviewees with medium (high) trust who agree with this notion is 12% (16%).

When looking at each trust measure separately, we find a particularly strong association between attitudes toward the debt brake and the first trust measure, that is, the notion that politicians are concerned about the general public interest vs. the interest of particular groups.[7] Twenty per cent of the interviewees who (rather) believe in interest-group politicians would like an even stricter balanced budget rule, whereas the share among those who believe that politicians are benevolent is only 13%.

2.7. Party Preferences

Political ideology appears to be an important determinant of individual attitudes toward various policy measures. In Germany, the introduction of the debt brake was a source of avid public debate, with supporters and opponents typically belonging to different political camps. In fact, the political parties in Germany have very different opinions about the perils and benefits of a balanced budget rule. The conservative Christian Democratic Party and the Liberal Democratic Party favour the debt brake; the Leftist party strictly opposes it. Although the Social Democratic Party and the Green Party officially support the debt brake, there are opponents among the members of both parties. To glean some insight into the association between party preferences and attitudes toward the German balanced budget rule, all respondents were asked which party they would vote for if elections were held next Sunday. The respondents could choose between seven major German parties: the Social Democratic Party (SPD), the Christian Democratic Party (CDU), the Leftist Party, the Green Party, the Pirates, the Liberal Democratic Party (FDP), and the National Democratic Party of Germany (NPD). Alternatively, the respondents could state that they would vote for a different party or not vote at all.

Table A7 in the Appendix sets out the correlations between *party preferences* and attitudes toward the debt brake. People who vote for the parties regularly represented in the federal parliament reveal greater support for the current balanced budget rule. The support is the greatest among those who vote for the rather conservative CDU (70%), followed by the Green Party (65%), the SPD (63%), and the liberal FDP (63%). In contrast, people who vote

[7] Results are not reported here but available on request.

for parties other than those listed are more likely to want to tie the hands of politicians even more tightly by forbidding any additional debt incurrence. Interestingly, less than 8% of Leftist Party supporters are explicitly against the debt brake even though the Leftist Party officially rejects a balanced budget rule. This share is smaller than for most of the parties that officially support the debt brake, for example, the CDU (9%), the SPD (9%), and the Green Party (9%). Moreover, 23% of leftist voters call for an even stricter debt brake. There are two possible explanations for this. First, the Leftist Party's positions are far from the political 'mainstream' and the party is strongly critical of both past and present government. Thus, people who vote for the Leftist Party may desire to see the government's hands tied by a balanced budget rule. Second, the Leftist Party constantly calls for expansion of the welfare state and also tends to make political demands that far outpace budget limits. Thus, it could be that its supporters fear that the Leftist Party is incapable of engaging in sound fiscal policy, which is why they are in favour of a binding public credit constraint.

To sum up, despite the fact that support for the debt brake differs notably across different subgroups of the population, there is hardly any group that generally opposes a balanced budget rule. Within each subgroup, approval of the debt brake in its current form is typically the modal value. Nonetheless, approval rates can vary as much as 20 pp across subsamples. There is more disagreement about whether the German debt brake is sufficiently strong or whether the hands of the government should be tied even more tightly by prohibiting any additional debt incurrence at all.

3. Regression Analysis

Although cross-tabulations are very useful because they do not require assumptions about the functional relationship between variables, they do not have a *ceteris paribus* interpretation, as we do not take the joint variation of the covariates into consideration. In this section, we account for potential collinear relationships between our covariates by means of regression analysis. For this purpose, we estimate a multinominal logit model:

$$(1)\ \Pr(y_i = k) = \frac{\exp\{x_i'\beta_k\}}{\exp\{x_i'\beta_1\} + \cdots + \exp\{x_i'\beta_K\}}, k = 1, \ldots, K.$$

k refers to the potential realisations of the discrete variable y_i, which can take on three values: 1 if the respondent is against the debt brake, 2 if she favours it, and 3 if she thinks that the debt brake is insufficient. Subscript i refers to the interviewee. We estimate the coefficients β_k using maximum likelihood.

The vector x contains all variables introduced in Section 3: economic situation,[8] economic literacy, believed fiscal position, time preferences,[9] risk preferences, trust in politicians,[10] and party preferences. Moreover, we control for several additional factors, namely, level of education (dummies for those who completed lower (Hauptschule; reference category), middle (Realschule), and upper secondary school (Abitur)), dummies for employment status (regularly employed (reference category), unemployed, student, retiree, trainee/military service, and jobless for other reasons), marital status (singles (reference category), people living together with a partner, married people, and those who are widowed or divorced), age, sex, propensity toward an egalitarian attitude, and a dummy indicating whether the respondent has children.[11] Additionally, we include a dummy for the state (Bundesland) in which the respondent resides. The results are outlined in Table 1. Since the coefficients of a multinominal logit model are of limited interpretative value, we report average marginal effects for each realisation of our dependent variable. Generally, it appears that a number of conclusions based on the bivariate analyses in Section 3 are affected by common variation in our explanatory variables and no longer hold in a multivariate context.

Among the group of *economic controls*, only household income reveals a statistically significant influence on individual attitudes toward the debt brake when holding other factors fixed. In line with our findings from the bivariate analysis, the larger the respondent's income, the lower the likelihood that she opts for an even stricter balanced budget rule. A €1,000 increase in household income is associated with an almost 3 pp lower likelihood of answering that the government should not incur any additional debt at all.

[8] Unlike in the cross-tabulations, we do not group the respondents into three different income brackets in the regression approach; instead, household income enters as a metric variable.

[9] In our sample, a large number of interviewees choose the immediate payment irrespective of the magnitude of the offered future payoff. Interestingly, a similar distribution of answers is found in the SOEP. A possible explanation for this finding is that respondents who are particularly risk averse choose this option. To control for possible spill-over effects and measurement errors, we include additional dummy variables for these categories.

[10] Note that we include each trust measure separately instead of computing the average as done in Section 2.

[11] A detailed description of all variables is provided in Section A.2 of the Appendix.

Table 1: Determinants of individual attitudes toward the German debt brake.

Variables	Against Debt Brake	Pro Debt Brake	Debt Brake Not Enough
Economic situation			
HH income	0.007	0.019	−0.027**
Subjective well-being	0.004	0.005	−0.009
Property	−0.017	−0.005	0.022
Time preferences			
β	−0.058	0.012	0.046
δ	−0.034	−0.016	0.051
Risk attitudes			
λ	0.016	−0.059***	0.043***
Economic literacy			
One correct answer	−0.073**	0.062	0.011
Two correct answers	−0.081**	0.075	0.006
Three correct answers	−0.049	0.080	−0.032
Believed deficit	−0.006	0.005	0.001
Believed interest rate	−0.005	0.007	−0.003
Believed inflation rate	−0.008*	0.003	0.004
Political trust/attitudes			
Public interest	−0.001	0.029**	−0.028**
Long-term orientation	0.000	−0.004	0.004
Fiscal competence	0.000	0.013	−0.013
Party preference			
Leftist Party	−0.044	−0.043	0.087*
Pirates	−0.043	0.012	0.030
SPD	−0.034	0.012	0.022
Green Party	−0.035	0.009	0.026
CDU	−0.043*	0.062*	−0.019
FDP	−0.054	0.029	0.025
NPD	0.030	−0.139	0.109
Other	−0.042	−0.101*	0.143***
Education			
Middle second. school	−0.003	−0.027	0.030
Higher second. school	0.011	−0.046	0.035
Employment			
Unemployed	0.052	−0.018	−0.035
Retired	0.006	0.026	−0.032
Student	−0.054	0.006	0.049
Voc. training/military service	−0.041*	−0.041	0.082
Housewife/househusband	−0.031	−0.006	0.037
Other controls			
Age	−0.002	−0.001	0.002**
Children	−0.001	−0.019	0.020
Female	0.001	0.025	−0.026
Egalitarian attitude	0.010	0.023**	−0.033***
Living in partnership	−0.007	−0.012	0.019
Married	0.027	−0.021	−0.006
Divorced/widowed	0.057*	−0.091*	0.034
Dummy β	−0.036**	−0.008	0.044
Dummy δ	−0.010	0.041	−0.030
Laender dummies	yes	yes	yes
Observations	1751		
Pseudo-R^2	0.070		
Wald χ^2 (108)	2053.5***		

Notes: Results are based on a multinominal logit maximum likelihood estimation. Marginal effects based on sample averages are reported. White (1980) robust standard errors are used. *, **, and *** indicate significance at the 10%, 5%, and 1% level, respectively.

Economic literacy appears to matter a great deal, even after controlling for the influence of several other potentially relevant factors. Respondents who have at least some knowledge about debt-related economic indicators are less likely to be opposed to a balanced budget rule. The effects are of notable size. Giving one (two) correct answers to the three multiple-choice questions reduces the likelihood of expressing disagreement with the debt brake by 7 pp (8 pp). In contrast, the *subjective assessment* of debt-related economic measures hardly matters. Only the believed inflation rate is significantly related to attitudes toward the debt brake: a 1 pp increase in the subjective assessment of the inflation rate lowers the likelihood of opposing the debt brake by almost 1 pp.

In line with the findings from cross-tabulations, people who are particularly *risk prone* are less likely to agree to the current balanced budget rule and more likely to opt for an even stricter one than people who are risk averse. The size of the effects is remarkable. A one point hike in the risk attitude parameter λ is associated with a 6 pp lower likelihood of supporting the balanced budget rule and a 4 pp higher likelihood of wanting an even stricter rule.

Among the indicators of *trust in politicians*, beliefs about politicians' benevolence appear to be important. Supporting our prior, a one point hike in this trust measure decreases the probability of choosing an even stricter balanced budget rule by almost 3 pp. Put differently, interviewees who think that politicians primarily serve the interests of particular groups are more likely to express the opinion that the government should not be allowed to incur any debt at all. The reverse is discovered for respondents who have high trust in politicians: they are significantly more likely to support the debt brake in its current form.

With respect to *party preferences*, particularly strong effects are found for supporters of the Leftist Party, the CDU, and other parties not explicitly listed. Supporters of the Christian Democratic Party are 4 pp less likely to oppose the debt brake, which is in line with our expectations. As already indicated by the cross-tabulations, supporters of the Leftist Party are 9 pp more likely to state that the government should not be allowed to run a deficit at all. Finally, supporters of parties other than those listed prefer an even stricter balanced budget rule with a 14 pp higher likelihood. This finding could indicate that those who desire a balanced budget rule the most tend to be disappointed by the fiscal policy programmes of the established parties.

4. Conclusion

The recent financial crisis and associated economic downturn have imposed a huge burden on the public finances of many countries, as public debt levels have increased excessively. This

development has raised concerns about the solvency of many sovereigns and the stability of the Euro area.

To tackle these problems, the member states of the European Union signed the European Fiscal Compact, under which all ratifiers must enact a balanced budget law in their national legislation. Debt brakes are often regarded as an effective and credible device for ensuring sustainable fiscal policy and regaining credibility. However, debt brakes are not without their critics, who point out that because debt brakes tie the hands of fiscal policymakers, they can hinder, if not block, appropriate and timely response to economic downturns. Moreover, the rules can be circumvented by 'creative accounting' within the government sector.

To shed light on the public's view of balanced budget rules, we designed a survey that was carried out in Germany at the beginning of 2013. A representative sample of the German population was asked their opinions on the debt brake. Germany is a particularly interesting case, as a balanced budget rule was enacted by constitutional amendment even before the surge of the European debt crisis. According to this rule, the public budget deficit at the federal government level must not exceed 0.35% of GDP from 2016 onward. Exceptions can be made only in times of national economic crisis or in the event of a natural disaster.

Our findings suggest that a vast majority of the German population supports the balanced budget rule in its current form; the share of proponents is roughly 61%. Only 8% of the respondents oppose a debt brake; 17% think that the debt brake does not go far enough, as they believe that the government should not incur any additional debt at all. Studying approval rates within different subgroups of the German population, we find that attitudes toward the debt brake are associated with several factors. Support for the balanced budget rule is greater among high-income earners, those who are well-informed about the costs associated with deficit spending, and respondents who consider politicians to be trustworthy. Opinions about the debt brake also differ notably across the supporters of different political camps. People who vote for the CDU and FDP, for example, are more likely to approve the debt brake in its current form than are non-voters or those who vote for 'fringe' parties. However, no identifiable subgroup of the German population opposes introduction of a balanced budget rule in general.

To conclude, our results imply that the German population strongly supports a rule that constrains the government's fiscal leeway and, thus, the discretionary power of the voters' representatives. What remains unclear, however, is the extent to which the financial

and economic crisis and the associated increase in public debt has strengthened the popularity of a debt brake in Germany.

Appendix

A.1. Additional Tables

Table A1: Attitudes toward debt brake and economic well-being—joint distribution of answers

	Against debt brake	In favour of debt brake	Debt brake not sufficient	No answer	Total
Low income (< €1,500)	8.5	54.6	19.3	17.7	100 N = 493
Medium income (bet. €1,500 and €3,000)	7.7	61.4	17.2	13.8	100 N = 1264
High income (> €3,500)	9.1	67.7	12.6	10.5	100 N = 285
Pearson's χ^2 (8)	17.9***				
Absolutely dissatisfied	9.3	41.2	28.7	20.2	100 N = 129
Rather dissatisfied	9.0	58.3	19.0	13.8	100 N = 290
Neither/nor	7.3	62.1	13.7	16.9	100 N = 765
Rather satisfied	8.6	63.3	17.6	10.5	100 N = 712
Absolutely satisfied	6.9	61.0	17.8	14.4	100 N = 146
Pearson's χ^2 (12)	40.2***				
No self-owned house/flat	9.1	59.1	16.1	15.7	100 N = 966
Self-owned house/flat	7.2	62.0	17.9	12.9	100 N = 1076
Pearson's χ^2 (3)	7.0*				

Table A2: Attitudes toward debt brake and economic literacy—joint distribution of answers

	Against debt brake	In favour of debt brake	Debt brake not sufficient	No answer	Total
No correct answer	9.5	52.8	17.5	20.2	100 N = 515
One correct answer	7.0	62.3	17.2	13.6	100 N = 906
Two correct answers	7.8	65.6	17.2	9.5	100 N = 529
Three correct answers	13.0	59.8	12.0	15.2	100 N = 92
Pearson's χ^2 (9)	36.5***				

Table A3: Attitudes toward debt brake and believed fiscal position—joint distribution of answers

	Against debt brake	In favour of debt brake	Debt brake not sufficient	No answer	Total
Deficit = 1%	9.2	62.5	12.5	15.8	100 N = 184
Deficit = 3%	8.8	61.9	17.7	11.6	100 N = 874
Deficit = 5%	7.9	59.6	16.3	16.2	100 N = 643
Deficit = 7%	5.9	58.4	19.1	16.7	100 N = 341
Pearson's χ^2 (9)	15.1*				
Interest rate = 1.5%	8.1	63.6	17.6	10.8	100 N = 758
Interest rate = 3%	8.6	59.8	17.5	14.1	100 N = 766
Interest rate = 5.5%	7.5	59.6	15.0	17.8	100 N = 426
Interest rate = 10%	6.5	47.8	18.5	27.2	100 N = 92
Pearson's χ^2 (9)	26.7***				
Inflation = 0%	6.5	48.4	19.4	25.8	100 N = 31
Inflation = 2%	7.9	63.6	16.6	11.9	100 N = 1298
Inflation = 5%	9.2	58.0	16.7	16.0	100 N = 586
Inflation = 10%	4.7	44.9	22.8	27.6	100 N = 127
Pearson's χ^2 (9)	39.4***				

Table A4: Attitudes toward debt brake and time preferences—joint distribution of answers

	Against debt brake	In favour of debt brake	Debt brake not sufficient	No answer	Total
Low future orientation ($\beta \leq .5$)	7.8	59.8	18.0	14.4	100 N = 1269
Medium future orientation ($.5 < \beta \leq .9$)	9.5	65.4	12.7	12.5	100 N = 505
High future orientation ($\beta > .9$)	6.7	55.6	20.9	16.8	100 N = 268
Pearson's χ^2 (6)	16.1**				
Myopic ($\delta < 1$)	7.8	56.5	20.1	15.7	100 N = 294
Non-myopic ($\delta \geq 1$)	8.1	61.3	16.5	14.0	100 N = 1748
Pearson's χ^2 (3)	3.3				

Table A5: Attitudes toward debt brake and public indebtedness—joint distribution of answers

	Against debt brake	In favour of debt brake	Debt brake not sufficient	No answer	Total
Risk averse ($\lambda < -.2$)	7.5	65.0	15.2	12.3	100 N = 738
Risk neutral ($-.2 \leq \lambda \leq .2$)	8.6	60.6	15.0	15.8	100 N = 581
Risk prone ($\lambda > .2$)	8.3	56.2	20.6	14.9	100 N = 723
Pearson's χ^2 (6)	16.9**				

Table A6: Attitudes toward debt brake and trust in politicians—joint distribution of answers

	Against debt brake	In favour of debt brake	Debt brake not sufficient	No answer	Total
Low trust	8.6	58.5	20.8	12.2	100 N = 1119
Medium trust	7.8	63.4	12.2	16.7	100 N = 839
High trust	4.8	61.9	15.5	17.9	100 N = 84
Pearson's χ^2 (6)	32.5***				

Table A7: Attitudes toward debt brake and party preferences—joint distribution of answers

	Against debt brake	In favour of debt brake	Debt brake not sufficient	No answer	Total
Would not vote	9.6	51.9	14.6	24.0	100 N = 459
Leftist Party	7.5	53.3	23.3	15.8	100 N = 120
Pirates	8.6	51.4	17.1	22.9	100 N = 35
SPD	8.5	63.3	17.3	10.9	100 N = 496
Green Party	8.5	65.0	15.7	10.4	100 N = 280
CDU	8.9	69.5	14.2	9.8	100 N = 459
FDP	6.5	63.2	18.4	13.2	100 N = 76
NPD	5.3	47.4	36.8	5.3	100 N = 19
Other	6.1	46.9	31.6	15.3	100 N = 98
Pearson's χ^2 (24)	93.4***				

A.2. Explanatory Variables

HH income	Monthly net household income in €1,000. In the raw dataset, households are sorted into one of 11 income classes. In the empirical analysis, we consider the centre of each class.
Subjective well-being	Subjective assessment of personal economic well-being, ranging from 1 (absolutely dissatisfied) to 5 (absolutely satisfied).
Property	Dummy variable taking the value 1 if the respondent lives in her own house/flat and 0 if the house/flat is rented.
β	Respondent's marginal rate of substitution between two future consecutive periods (see Section 2.4. and Hayo et al. (2014)).
δ	Measure of the degree of the respondent's short-run impatience (see Section 2.4 and Hayo et al. (2014)).
Believed deficit	Measure of the respondent's assessment of 2012's federal budget deficit (four potential realisations; measured in percentage points). This variable is computed based on the following question: How large was the budget deficit of the federal government in 2012? 1% □ 3% □ 5% □ 7% □
Believed interest rate	Measure of the respondent's assessment of the interest rate on government bonds with a maturity of 10 years (four potential realisations; measured in percentage points). This variable is computed based on the following question: What is the current interest rate on long-term government bonds (maturity 10 years), approximately? 1.5% □ 3% □ 5.5% □ 10% □
Believed inflation rate	Measure of the respondent's assessment of 2012's inflation rate (four potential realisations; measured in percentage points). This variable is computed based on the following question: How large was the inflation rate in 2012, approximately? 0% □ 2% □ 5% □ 10% □
Knowledge/number of correct answers	Variable measuring the number of correct answers to the three multiple-choice questions about 2012's deficit, the interest rate on government bonds, and 2012's inflation rate.
Public interest	Most politicians in Germany act in line with the general public's interest vs. Most politicians in Germany only serve the interests of particular groups +2: □ +1: □ 0: □ −1: □ −2: □
Long-term orientation	Most politicians are concerned about the country's long-term well-being vs. Most politicians are only concerned about the next elections +2: □ +1: □ 0: □ −1: □ −2: □
Fiscal competence	The government manages tax revenues conscientiously vs. The government wastes tax revenues +2: □ +1: □ 0: □ −1: □ −2: □

Egalitarian attitude	The state should ensure equal living conditions		vs.	The state should not interfere with people's living conditions	
	+2: □	+1: □	0: □	−1: □	−2: □
Education	Education level of the respondent, differentiating between lower secondary education (reference category), middle secondary education, and upper secondary education.				
Employment	Employment status of the respondent, differentiating between regularly employed (reference category), unemployed, retired, student, housewife/househusband, and jobless for other reasons.				
Age	Respondent's age in years.				
Children	Dummy variable taking the value 1 if the respondent has children (0 otherwise).				
Female	Dummy variable taking the value 1 if the respondent is female (0 otherwise).				
East German	Dummy variable taking the value 1 if the respondent lives in East Germany (0 otherwise).				
Risk preference	Respondents are confronted with the choice of either receiving a safe payoff of €X or taking part in a lottery in which they could win either €1,000 or nothing (odds are 50:50). The choice of X is then used to compute an individual's risk preference parameter, which varies between −1 (maximum risk aversion) and +1 (maximum risk propensity), i.e., $\lambda = (X–500)/500$.				
Family status	Family status of respondent, differentiating between single (reference category), living together with a partner, married, and divorced/widowed.				

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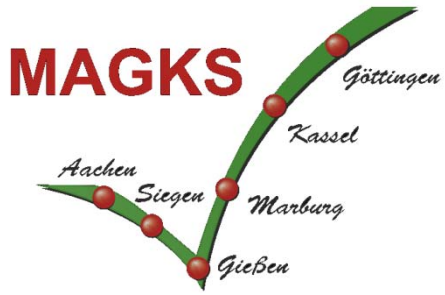

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Coordination: Bernd Hayo • Philipps-University Marburg
Faculty of Business Administration and Economics • Universitätsstraße 24, D-35032 Marburg
Tel: +49-6421-2823091, Fax: +49-6421-2823088, e-mail: hayo@wiwi.uni-marburg.de

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Bernd Hayo and Florian Neumeier

Philipps-University Marburg

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Corresponding author:

Bernd Hayo
School of Business and Economics
Philipps-University Marburg
D-35032 Marburg
Germany
Phone: +49–6421–2823091
Email: hayo@wiwi.uni-marburg.de

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Public Preferences for Government Spending Priorities: Survey Evidence from Germany

Abstract

Employing data from a representative survey conducted in Germany, this paper examines public preferences for the size and composition of government expenditure. We focus on public attitudes toward taxes, public debt incurrence, and public spending in six different policy areas. Our findings suggest, first, that the current scope of government is supported by a majority of the German population. Second, we find that individual preferences for the composition of government spending differ along various dimensions. Specifically, personal economic well-being, economic literacy, confidence in politicians, political ideology, and time preference are significantly related to individual attitudes toward public spending, taxes, and debt. The magnitude of the effects is particularly large for time preference, economic knowledge, and party preference. Third, public preferences for public spending priorities are only marginally affected when considering a public budget constraint.

JEL: E62, H11, H50, H63

Keywords: Public spending, public preferences, public debt, taxes, survey, Germany.

1. Introduction

The past decade has witnessed an expansion of the public sector in most OECD countries, reflected by notably higher public expenditure and tax revenue-to-GDP ratios.[1] This trend reached a peak after the recent financial and economic crises, when governments around the world implemented fiscal stimuli in order to stabilise the business cycle. In the aftermath of this expansion, governments are finding it hard to cut back the budget again. Moreover, there has been an intensive debate over what some observers call 'austerity', the reluctance of some countries (e.g., the United Kingdom and Germany) to prolong the period of extensive deficit spending. Economists supporting 'austerity' often believe that large governments might have a detrimental impact on economic growth and social welfare (e.g., Afonso and Furceri, 2010; Fölster and Henrekson, 2001; Barro, 1990). Moreover, in the public choice literature, policymakers and bureaucrats are typically assumed to be primarily concerned with their personal utility rather than public benefit (e.g., Niskanen, 1971; Alesina et al., 1997; Drazen, 2002). In their view, markets would supply many currently publicly-provided goods and services more efficiently than do governments.[2]

From a political perspective, the scope of government in a democracy arguably should reflect the electorate's preferences. However, it seems unlikely that a person's demand for publicly-provided goods and services is primarily driven by concerns about economic welfare *per se*. It is hard to imagine that 'common' people (i.e., economic laymen) evaluate fiscal policies from a theoretical economics perspective and employ, for instance, Musgrave's (1959) distinction between the main fiscal functions of allocation, distribution, and stabilisation.

But if not fiscal functions, what does determine the demand for publicly-provided goods? We provide an answer to this question based on an empirical analysis of data from Germany. Thus, in this paper, we study the correlates of peoples' attitudes toward public spending in six different policy areas, as well as of their views on taxes and public debt. In consideration of the various government functions and the implications of different public spending priorities, we formulate and test several hypotheses. In our analysis, we pay particular attention to the influence of redistribution concerns, confidence in politicians' competence and motives, economic literacy, political leaning, and time preferences.

For this purpose, we designed a representative survey of the German population. The survey was conducted on our behalf by GfK, one of the biggest private survey institutes in

[1] According to IMF International Financial Statistics, the expenditure-to-GDP quota in the euro area increased between 1991 and 2013 from 43.4% to 50% (on average). In the same period, the revenue-to-GDP ratio rose from 42.0% to 46.7%.

[2] Throughout this paper, we use the term 'public good' for goods characterised by non-rivalry and non-excludability and the term 'publicly-provided good' for goods that are actually provided by the government, irrespective of whether they are characterised by non-rivalry and/or non-excludability.

Germany, specialised in market and public opinion research. In the first quarter of 2013, roughly 2,000 representatively selected German citizens aged 14 or older were interviewed face to face using pen-pads. Respondents were asked for which policy areas public expenditure should be increased, decreased, or held constant relative to the current level. We consider two different scenarios: in the first scenario, respondents are required to take the public budget constraint into account; that is, respondents who opt for spending hikes (spending cuts) need to state how this hike should be financed or, alternatively, if they opt for spending cuts, to what purpose the additional funds should be used. The choice is between changing the level of public spending in any other policy area, increasing or decreasing taxes, or incurring or not incurring public debt. In this way, we circumvent the so-called 'more for less' paradox (Welch, 1985), according to which people want more spending but less taxation, and thus overcome a shortcoming found in many other surveys, for example, the International Social Survey Programme. In the second scenario, there is no binding budget constraint, that is, respondents are asked how additional unexpected revenues should be used. These two scenarios allow studying the importance of a budget constraint when measuring public support for government activities.

Surveys are frequently used to elicit public attitudes on fiscal policy measures. Based on cross-country data from the World Values Survey and the International Social Survey Programme, Alesina and Giuliano (2009), Blekesaune and Quadagno (2003), and Corneo and Grüner (2002) analyse individual attitudes toward political redistribution. Stix (2013), Blinder and Holtz-Eakin (1984), Blinder and Krueger (2004), and Walstad (1997) employ survey data to evaluate individual opinions on fiscal consolidation and public deficits. Hayo and Neumeier (2013) shed light on public attitudes toward different fiscal consolidation measures. However, to date, only a few studies focus on individual attitudes toward public spending priorities. Based on survey data from the United States, Mueller (1963), Welch (1985), Jacoby (1994), and Hansen (1998) evaluate public attitudes toward various fiscal programmes, such as public spending on certain welfare measures, education, health care, and defence. However, their analyses are primarily descriptive and they do not investigate the relationship between individual characteristics and fiscal policies. Hockley and Harbour (1983) employ a coupon scale questionnaire to elicit attitudes toward different public spending priorities in the United Kingdom. Compared to our study, though, their number of covariates is limited, as the authors examine only the effects of age, sex, education, and wage.

Our findings suggest that a large part of the German citizenry supports the current scope of government. Put differently, majority voting would yield few changes with regard to the level of public spending on diverse policy areas or the composition of public expenditure. The only policy area in which a spending cut is preferred by a majority of respondents is defence. In the case of

public spending on education, roughly 61% opt for increasing expenditure. We also find that preferences for different public spending priorities are relatively stable, irrespective of whether or not respondents consider the budget constraint. This means that the share of interviewees who opt for a spending hike in any particular policy area if unexpected additional funds become available is approximately the same as in the scenario where spending hikes involve costs. With regard to the determinants of attitudes toward public spending on the individual level, we find that—inter alia—economic well-being, confidence in politicians, economic knowledge, and time and party preferences exert a significant and sizable influence on preferences for public spending, tax policy, and public debt.

The remainder of the paper is organised as follows. The next section introduces the survey instrument and sets out some important descriptive statistics. Section 3 formulates and tests several hypotheses with respect to individual attitudes toward public spending priorities as well as toward taxes and public debt. This section also presents our empirical model, along with the results from ordered logit estimations. Section 4 concludes.

2. Survey Instrument and Descriptive Statistics

The survey started by listing and briefly describing six major policy areas. The current amount of public spending devoted to these areas was given both in terms of euros per capita as well as in relation to total public spending.[3] The six policy areas covered in our survey are those on which the German government spends the most: social security, public safety and order, education, infrastructure, economic development, and defence.

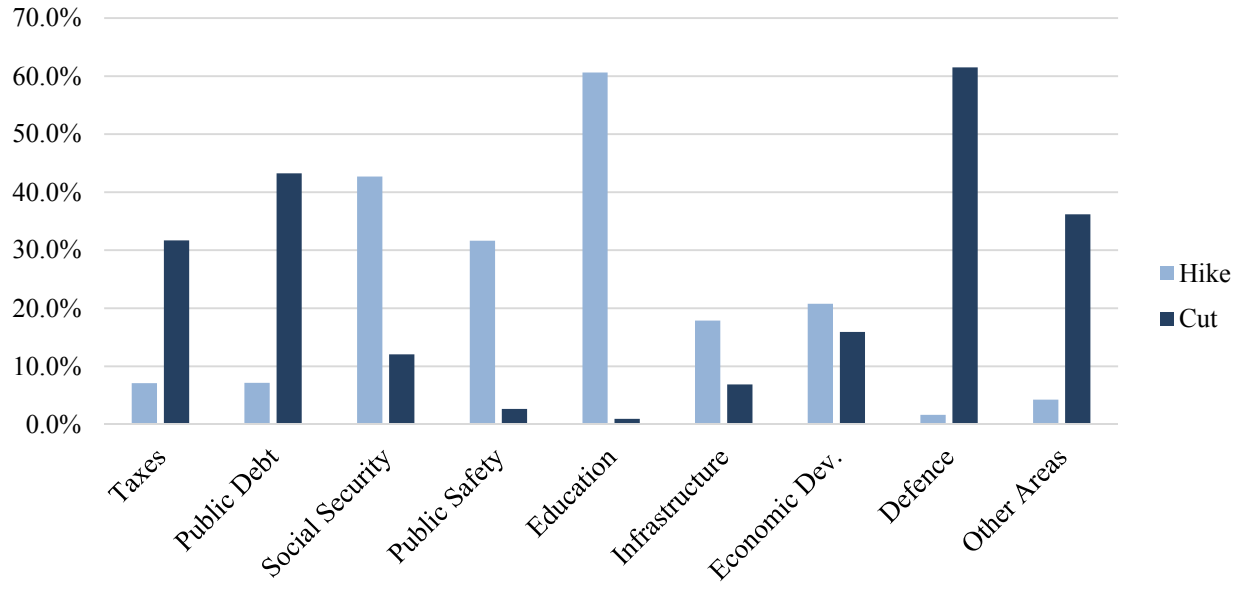
We adopted two strategies for eliciting respondents' preferences for different public spending priorities. First, we asked the interviewees in which of the six aforementioned policy areas the German government should spend more and in which areas it should spend less. Those interviewees who preferred spending hikes or cuts in at least one policy area were then asked how the additional public spending should be financed or what the additional funds should be used for, respectively. In both cases, three options were available: spending hikes (spending cuts) can be financed via (used for) a tax hike (tax cut), public borrowing (public debt reduction), or by a decrease (increase) in public spending in another other policy area. We allowed multiple answers, that is, the respondents could choose several policy areas in which they would prefer a change in spending. Note that the survey instrument is designed in such a way that the interviewees have to answer consistently; that is, interviewees who prefer an increase in public spending in any policy area and at the same time state that the increase should be financed via a reduction of public

[3] The descriptions and figures used in the survey are given in Appendix A.1.

spending in another area were obliged to name at least one policy area in which public spending should be cut. Before the interview commenced, the scope and sequence of questions was introduced by an interviewer and the interviewee was permitted to ask questions at any time during the interview. By directly relating public spending to public revenues, we compelled interviewees to think about the public budget constraint when making their choices and, thereby, circumvented the 'more for less paradox' (Welch, 1985).

Figure 1 illustrates the share of people opting for spending hikes (light columns) and cuts (dark columns) in different policy areas, as well as for increases or decreases in taxes and public debt, respectively.

Figure 1: Preferences for public spending priorities when accounting for the public budget constraint—distribution of answers

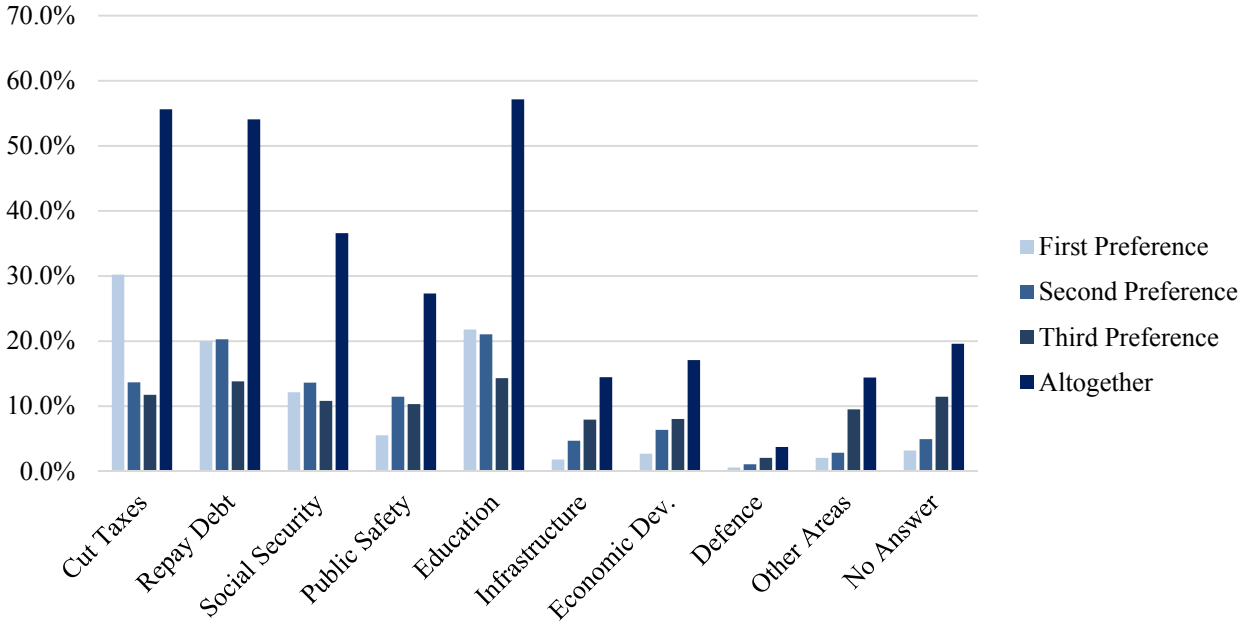


Only 18% of the respondents opt for a tax hike or the incurrence of additional public debt in order to increase public spending. Generally, expenditure cuts are also unpopular, except for defence spending, which more than 60% of the German population would like to see reduced. Note, though, that only 2.5% of total public expenditure is devoted to defence. With regard to increasing public spending, roughly 60% opt for additional expenditure on education. With respect to other policy areas, majority voting would not result in any changes in expenditure.

Next, we introduce a scenario in which money comes out of the blue and, thus, fiscal adjustments are associated with no additional costs. Some people may regard public spending in one area as more important than spending in another, but, at the same time, be reluctant to call for a spending hike when costs are involved. To obtain some insight into whether and how consideration of the public budget constraint affects peoples' attitudes toward public spending priorities, we confronted the interviewees with the latest release of the official tax estimate,

according to which the German government is going to collect €23 billion more tax revenues between 2013 and 2016 than previously expected. We then asked the respondents how the government should use these additional revenues. The choice was between increasing public spending in one of the six policy areas listed above, cutting taxes, or repaying public debt. Respondents were allowed to mention a maximum of three ordered preferences. Ordering allows evaluating the relative importance respondents attach to different fiscal policy measures. The distribution of answers is illustrated in Figure 2.

Figure 2: Preferences for public spending priorities when unexpected funds can be used—distribution of answers



The share of people opting for a spending hike in any particular policy area is roughly equal to the scenario in which respondents were required to take the public budget constraint into account. Thus, preferences over different public spending priorities appear relatively stable, irrespective of whether or not spending hikes involve a budget constraint. However, we see a different picture when looking at preferences as to taxes and public debt. In the first scenario, about 32% of the interviewees opt for a tax cut. But when unexpected funds are available, more than half the respondents prefer to use them to decrease the tax burden. With regard to public debt, only 42% prefer consolidation efforts when this implies that spending needs to be cut, as compared to 54% when unexpected tax revenues can be used for this purpose. Hence, respondents are more willing to cut taxes and repay debt if no costs are involved, indicating that they prefer not to reduce the scope of government.

3. Determinants of Individual Attitudes Toward Public Spending Priorities

3.1 Empirical Approach and Research Hypotheses

We now turn to the individual-level analysis of preferences for different public spending priorities. Our investigation consists of two parts. First, we study the determinants of individual attitudes toward public spending priorities in the scenario where interviewees' had to take the public budget constraint into account. We set up the following empirical model:

$$(1)\ y^*_{i,j} = x'_i\beta + \varepsilon_i$$

$$y_{i,j} = k\ if\ \rho_{k-1} < y^*_{i,j} \leq \rho_k$$

where $y^*_{i,j}$ represents a latent continuous variable. The subscript *i* refers to the interviewee and *j* to the policy area. We estimate eight specifications of Equation (1), one for social security, public safety, education, infrastructure, economic development, defence, taxes, and public debt.[4] *k* is a placeholder for the potential realisations of the discrete variable $y_{i,j}$ and can take one of three values: –1 if the respondent opts for a spending cut in area *j* (a tax cut/public debt reduction), 1 if the respondent chooses an increase (a tax hike/additional public debt incurrence), or 0 if the respondent prefers to maintain the current level of spending (tax amount/level of public debt).

Second, we study variables related to respondents' *relative* preferences. In the following equation, we focus on the scenario where additional public funds become available unexpectedly.

$$(2)\ z^*_{i,j} = x'_i\delta + \vartheta_i$$

$$z_{i,j} = l\ if\ \sigma_{k-1} < z^*_{i,j} \leq \sigma_k$$

The main difference from Equation (1) is that the discrete variable $z_{i,j}$ can take on one of four values: 3 if the respondent chooses the respective policy measure—i.e., a reduction of taxes or public debt or a spending hike in any policy area—as his or her first preference, 2 if the respondent chooses it as the second preference, 1 if the respondent mentions it as a third preference, or 0 if the policy measure is not mentioned at all. We use ordered logit regressions to estimate Equations (1) and (2).

There is not much theoretical or empirical research into variables that are related to individual demand for publicly-provided goods and services. Thus, our analysis is to some extent explorative and the choice of explanatory variables is thus somewhat conjectural.[5]

Economic Well-Being: Personal economic situation may affect individual attitudes toward public spending in several policy areas. Both theoretical (e.g., Meltzer and Richard, 1981) as well as empirical public choice approaches (e.g., Alesina and Giuliano, 2009; Alesina and La Ferrara,

[4] Due to its high degree of heterogeneity, we do not use the miscellaneous expenditure category in the regression models below.

[5] Details on explanatory variables can be found in the Appendix.

2005; Corneo and Grüner, 2002) suggest that those who are relatively better-off tend to prefer less public spending on redistributive policies. In this regard, the label 'redistributive' is typically applied to publicly-provided goods and services that are (i) financed through proportional or progressive income tax, (ii) 'private' in the sense that they are typically characterised by excludability and/or rivalry, and (iii) provided by the government free of charge (e.g., Besley and Coate, 1991). Public spending on social security and public education are commonly considered prime examples of redistributive policies. Social security spending directly benefits those living in poor economic conditions. Public spending on education may reduce social inequality by enhancing the educational participation of the lower class and improving its future economic prospects.

In contrast, evidence on the association between personal economic well-being and attitudes toward public spending on policies that are not necessarily 'redistributive' is absent from the literature. Only in the case of public safety is there some empirical evidence based on hedonic pricing models. Employing information on housing prices and wages from 113 US cities, Clark and Cosgrove (1990) find that willingness to pay for public safety increases with income. Using a formal theoretical model, they argue that public safety is a normal good. To summarise, we expect that relatively worse-off people are more likely to opt for spending hikes on social security and public education, whereas those who are better-off are assumed to call for additional public spending on public safety and order.

We further hypothesise that the well-to-do prefer lower taxes and less public debt. The first conjecture is based on the notion that publicly-provided goods and services are primarily financed through a progressive income tax. The second claim is supported by several empirical findings suggesting that personal economic well-being is positively related to preferences for fiscal consolidation (e.g., Heinemann and Henninghausen, 2012; Hayo and Neumeier, 2013; Stix, 2013).

The survey contains three indicators for respondents' personal economic well-being: (i) net monthly household income (in €1,000), (ii) homeownership as a proxy for the household's real assets (i.e., whether the respondent lives in a self-owned house, self-owned flat, or a rented house/flat), and (iii) a subjective assessment of the interviewee's personal economic situation, ranging from 1 (absolutely dissatisfied) to 5 (absolutely satisfied).

Attitudes Toward Politics: Trust in politicians could be an important determinant of individual attitudes toward public spending, as people characterised by high trust may be less suspicious of government activity. Many political economy approaches assume that policymakers manipulate the level and composition of public expenditure in their own self-interest, including political budget cycle theory, rent-seeking approaches, and pork-barrel spending models (e.g.,

Rogoff and Sibert, 1988; Alesina et al., 1997; Lizzeri and Persico, 2001). Arguably, people who share this view of politicians' motives are more likely to oppose public spending hikes and opt for a lean state. Accordingly, they should be relatively more likely to call for tax cuts and public debt reduction.

In our survey, we measure interviewees' attitudes toward politics with four pairs of contradictory statements. Three of these capture different dimensions of trust in politicians; the fourth assesses preferences for redistribution. We asked whether interviewees believe that politicians (i) act according to the general public interest versus only in the interest of particular groups, (ii) are concerned about the country's long-term well-being versus being concerned only about the next election, and (iii) manage tax revenues conscientiously versus are wasteful with tax revenues. In each case, we inquired with which statement, on a five-point scale, the respondents agree most. If people are particularly suspicious of government activity in one or more specific policy area, we would expect to see them prefer lower spending.

Additionally, we asked the interviewees about whether they think that (iv) the state should ensure equal living conditions versus the state not interfering in peoples' living conditions. By means of this item, we capture the respondents' inclination toward an egalitarian attitude. Arguably, people characterised by an egalitarian attitude may be more likely to opt for higher spending in policy areas that can be considered 'redistributive' and that reduce social inequality. The most important examples are social security and public education.

Economic Literacy: Following the recent financial and economic crises, many governments accumulated large public debt, which implies that many publicly-provided goods and services were deficit financed. Arguably, awareness of the future burden associated with deficit spending may affect peoples' attitudes toward public expenditure. Persons who lack information about the costs of public indebtedness may be less reluctant to opt for public spending hikes than those who are able to assess the future burden of public debt (e.g., Buchanan and Wagner, 1977). Our survey contains three multiple-choice questions designed to assess interviewees' knowledge of economic variables that are important for assessing public debt: we asked about (i) the size of the federal government's budget deficit in 2012 (in relation to GDP), (ii) the current interest rate on government bonds with a maturity of 10 years, and (iii) 2012's inflation rate. In each case, the interviewees could choose between four answers. To evaluate the influence of knowledge on attitudes toward public spending priorities, we employ dummy variables for the number of correct answers. Significantly negative effects of the knowledge measure indicate that the better-informed respondents' believe that spending cuts in the respective policy area are particularly suitable for fiscal consolidation.

Party Preferences: Party preferences might be a particularly important source of variation in individual preferences for public spending priorities. There is a wide range of political parties in Germany. For instance, leftist parties such as the SPD or the Left Party argue in support of a strong welfare state, whereas the FDP is a proponent of the free market. The CDU/CSU stands for the conservative political centre, whereas the Green Party reflects a mix of alternative ideas and liberal bourgeoisie. To achieve some insight into the association between party preferences and preferences for public spending priorities, all respondents were asked which party they would vote for if elections were held next Sunday. The respondents could choose between seven major German parties: the Social Democratic Party (SPD), the Christian Democratic Party (CDU), the Leftist Party, the Green Party, the Pirates, the Liberal Democratic Party (FDP), and the National Democratic Party of Germany (NPD). Alternatively, the respondents could state that they would vote for a different party or that they would not vote at all.

Time Preferences: In theoretical studies, time preferences are believed to be an important determinant of attitudes toward public indebtedness (e.g., Huber and Runkel, 2008). As consolidation efforts have to be financed, time preferences may also affect preferences for public spending priorities. Both theoretical and empirical evidence suggests that people who lack a future orientation and are particularly concerned about the present are more likely to support public debt incurrence and oppose fiscal consolidation (Hayo and Neumeier, 2013; Stix, 2013). Is there reason to suspect that time preferences are linked to preferences for expenditure-based consolidation? Arguably, benefits deriving from spending hikes on some items are immediately visible, whereas those deriving from other items are realised in the future, perhaps not even benefitting the current generation. For instance, increases in social security spending tend to fall into the former category, whereas spending hikes on education and infrastructure belong to the latter, as they can be considered investments in the economy's (human) capital stock. Like in other cases of delayed rewards, individual preferences for spending hikes and cuts on items belonging to one or the other category might be affected by the respondent's degree of forward-lookingness. Hence, people who are particularly concerned about the present may prefer higher spending in areas yielding immediate benefits and spending cuts in areas where welfare losses occur sometime in the future. And, indeed, empirical evidence indicates that a person's future orientation or degree of patience is positively related to willingness to delay rewards (e.g., Ainslie, 1975; Thaler and Shefrin, 1981).

Within the framework of the survey, two 'experiments' were conducted to assess interviewees' time preferences.[6] In the first experiment, respondents were asked to choose between a safe payoff of €1,000 paid immediately and a higher payoff of €$X_{i,6}$ paid in six months. In the second experiment, the choice was between a safe payoff of €1,000 paid in six months and a higher payoff of €$X_{i,12}$ paid in 12 months. The respondents' choices of $X_{i,6}$ and $X_{i,12}$ are then used to compute (i) the marginal rate of substitution between two consecutive future periods, i.e., $\beta = 1{,}000/X_{i,12}$, and (ii) the respondents' degree of short-run impatience, defined as $\delta = X_{i,12}/X_{i,6}$ (Angeletos et al., 2001; Laibson, 1997). The rationale for conducting two 'experiments' is that people are often found to be more impatient in the short run than in the long run, a phenomenon sometimes referred to as 'myopia' and one that can cause time-inconsistent behaviour. Both theoretical (Huber and Runkel, 2008) and empirical (Hayo and Neumeier, 2013; Stix, 2013) evidence suggests that time preferences affect peoples' attitudes toward fiscal consolidation, i.e., the larger the discount rate β and the greater the extent of short-run patience δ, the more likely it is that a person will favour public debt reduction.[7]

Peoples' time perspective could also be related to specific sociodemographic characteristics. For example, given their shorter remaining lifetime, older respondents may be less future-oriented than younger ones. Retired persons may not be very interested in education, as they have left the labour market. In addition, given their own need for resources, they may not care very much about infrastructure investment, which primarily benefits future generations. Moreover, if we define utility maximisation to include caring for other individuals, respondents with children may be more future-oriented. Finally, the social science literature provides evidence that a person's future orientation is positively related to level of education (e.g., Trommsdorf, 1983). Becker and Mulligan (1997: 735) argue that 'schooling focuses students' attention on the future'. Leigh (1986) empirically analyses the relation between education and future orientation using survey data from the United States. His findings suggest that schooling facilitates forward-lookingness. Hence, we expect that better-educated people opt for additional spending on education and infrastructure as well as for public debt reduction. At the same time, well-educated people might prefer lower spending on social security, as they are less likely to become

[6] The setup of our 'experiments' is shown in Appendix A.3. The term 'experiments' is placed in quotation marks as they were not incentivised. However, both the setup and the wording were taken from the questionnaire of the German Socioeconomic Panel (SOEP), where the experiment was incentivised. Since the distribution of answers in our data is very similar to the one in the SOEP data, we are confident that the lack of a material incentive in our version of the experiment had no notable effect on interviewees' choices.

[7] In our sample, we observe an unexpectedly high number of interviewees who choose the immediate payment irrespective of what future payoff they are offered. Interestingly, a similar distribution of answers is found in the SOEP data. A possible explanation for this finding is that respondents who are particularly risk averse chose this option. To control for possible spill-over effects and measurement errors, we include additional dummy variables for these categories.

beneficiaries of the social safety net. To capture these effects, we include corresponding sociodemographic variables as additional covariates in our model.

Other Controls: Our empirical model contains several additional explanatory variables. We control for the respondent's employment status (regularly employed (reference category), unemployed, student, retiree, or homemaker), marital status (single (reference category), living with a partner, married, or widowed or divorced), and sex. Our empirical model also includes dummies indicating in which state (*Bundesland*) the respondent resides. Finally, we assessed the interviewees' risk preferences by means of an 'experiment'. We confronted the interviewees with the choice of either receiving a safe payoff of €X or taking part in a lottery in which they could win either €1,000 or nothing (odds are 50:50). The choice of X is then used to compute an individual's risk preference parameter, which varies between −1 (maximum risk aversion) and +1 (maximum risk propensity).

Table 1 summarises our hypotheses. A '+' signifies that we expect a positive association, '−' an inverse relationship, and '?' that we do not have a prior.

Table 1: Summary of research hypotheses

	Social Security	**Public Safety**	**Education**	**Infra-structure**	**Economic Develop.**	**Defence**	**Taxes**	**Public Debt**
Economic well-being	−	+	−	?	?	?	−	−
Trust in politicians	?	?	?	?	?	?	+	+
Egalitarian attitude	+	?	+	?	?	?	?	?
Economic literacy	?	?	?	?	?	?	−	−
Leftist ideology	+	−	+	?	?	−	+	+
Future orientation	−	?	+	+	?	?	?	−
Age	?	?	−	−	?	?	?	+
Retirement	?	?	−	−	?	?	?	+
Children	?	?	+	+	?	?	?	−
Education	−	?	+	+	?	?	?	−

3.2. Results

Table 2 shows the results for Equation (1), i.e., the scenario where respondents have to take the public budget constraint into account. Average marginal effects for the different realisations of the dependent variable are contained in Table A1 of the Appendix.

Table 2: Determinants of individual attitudes toward public spending priorities—accounting for the public budget constraint

Variables	Social Security	Public Safety	Education	Infra-structure	Economic Develop.	Defence	Taxes	Public Debt
Economic situation								
HH income	−0.161***	0.017	0.090	0.027	0.005	0.026	0.131**	−0.120**
Subjective well-being	−0.104**	0.141**	0.068	0.010	0.057	0.037	0.072	−0.030
Property	0.114	−0.189*	−0.191*	−0.123	−0.091	−0.039	−0.169	−0.158
Time preferences								
β	−0.748**	−0.267	−0.361	−0.461	−0.413	−0.113	0.282	−0.671**
δ	−0.031	−0.142	−0.147	−0.279	−0.104	−0.037	0.173	−0.269
Economic literacy								
One correct answer	0.101	0.077	0.122	0.109	−0.011	−0.325***	0.035	−0.093
Two correct answers	−0.015	0.027	0.285**	0.139	0.069	−0.536***	0.220	−0.200
Three correct answers	0.302	−0.496*	0.344	0.005	−0.271	−0.373	0.458*	−0.557**
Politic. trust/attitudes								
Public interest	0.082	0.082	−0.024	0.022	−0.041	0.037	0.033	−0.015
Long-run orientation	−0.005	0.052	0.011	0.014	0.109*	0.118**	−0.043	0.013
Fiscal competence	−0.058	−0.175***	−0.158**	0.028	0.057	0.112*	0.272***	−0.016
Egalitarian attitude	0.270***	0.015	0.199***	0.065	−0.004	−0.147***	0.038	0.016
Party preference								
Leftist Party	0.070	0.133	0.010	−0.223	−0.315	−0.397	0.620***	−0.385*
Pirates	0.170	0.026	−0.266	0.433	−0.008	−0.074	0.244	−0.552
SPD	−0.028	0.211	0.002	−0.060	0.027	−0.199	0.350**	−0.056
Green Party	−0.091	−0.070	0.214	−0.436**	−0.260	−0.433**	0.536***	−0.437***
CDU	−0.285**	−0.111	0.109	−0.048	0.103	0.013	−0.036	−0.011
FDP	−0.999***	0.060	0.138	−0.108	0.168	−0.021	−0.121	−0.284
NPD	−0.309	1.098**	0.661	0.231	−0.422	0.923*	−0.134	−1.271**
Other	−0.344	−0.113	−0.226	−0.111	0.101	0.227	−0.214	−0.677***
Education								
Middle sec. school	−0.043	0.131	0.531***	0.287**	0.274**	−0.340***	0.175	−0.225**
Higher sec. school	−0.302**	−0.121	0.909***	0.762***	0.033	−0.500***	0.238*	−0.497***
Employment								
Unemployed	0.336	−0.017	−0.352	−0.426*	0.168	−0.440*	0.129	−0.394*
Retired	0.263	0.240	0.036	−0.521***	−0.284*	−0.097	0.449***	−0.110
Student	−0.110	−0.408	0.234	−0.768*	−0.405	0.273	−0.188	−0.346
Vocational training	−0.363*	0.130	0.567**	0.223	0.174	−0.112	0.271	0.323
Homemaker	0.228	−0.032	0.264	−0.436	−0.060	0.040	0.098	0.135
Other controls								
Age	−0.005	0.007	−0.011**	0.009	−0.004	−0.007	0.010**	−0.016***
Children	0.045	0.055	0.380***	0.167	0.077	0.065	0.167	0.062
Female	0.055	0.247**	0.120	−0.302***	−0.175*	0.063	0.101	0.090
Risk preference	0.118	−0.121	−0.129*	0.081	−0.002	−0.052	0.007	0.008
Living in partnership	−0.100	0.038	−0.535***	−0.037	0.053	−0.150	−0.341*	0.023
Married	0.187	0.103	−0.174	0.126	−0.149	−0.237	−0.480***	0.124
Divorced/widowed	0.021	−0.179	−0.220	0.128	−0.059	−0.082	−0.564***	0.202
Dummy β	0.105	0.008	0.065	0.278*	−0.082	−0.310**	−0.041	−0.166
Dummy δ	−0.383***	0.008	−0.028	−0.234	−0.099	0.152	0.331**	−0.118
State dummies	yes	yes	yes	yes	yes	yes	yes	yes
Pseudo-R^2	0.062	0.054	0.076	0.043	0.030	0.057	0.048	0.038

Note: Results are based on ordered logit maximum likelihood estimation. The dependent variable is 1 if a respondent opts for a hike in the respective policy measure, 0 if no change is preferred, and −1 if a decrease is favoured. White (1980) robust standard errors are used. *, **, and *** indicate significance at the 10%, 5%, and 1% level, respectively.

Economic well-being exerts a significant influence on individual attitudes toward public spending priorities. In line with our prior, people who are comparably worse-off—i.e., those with low household income and a negative assessment of their personal economic situation—tend to opt for an increase in social security spending, whereas the well-to-do prefer a spending cut in this area. A €1,000 increase in net monthly household income (a one-point increase in subjective economic well-being) is associated with a 3.6 percentage point (pp) (2.3 pp) lower likelihood of opting for a spending hike on social security and a 1.6 pp (1.0 pp) greater likelihood of calling for a welfare spending cut. It appears that the well-to-do would like to use the money saved primarily on public safety and reducing public debt. A one-point increase in the subjective assessment of personal economic well-being is associated with a 2.8 pp greater likelihood of preferring a spending hike on public safety, whereas a €1,000 rise in household income makes it 2.8 pp more likely to call for public debt reduction. We also find some evidence that the wealthy prefer a reduction in spending on education, as indicated by the significant negative impact of our property indicator. High-income respondents are also significantly more likely to opt for a tax hike and significantly less likely to call for a tax cut than those with low income. Previous findings indicate that this result may be mediated by public debt aversion: Blinder and Krueger (2004), for the United States, and Hayo and Neumeier (2013), for Germany, report that richer people have a stronger preference for tax-based fiscal consolidation.

Supporting our conjecture, *time preference* appears to be an important determinant of individual attitudes toward public debt incurrence. The greater a person's concern about the future, the more likely he or she is to a call for public debt reduction. The effect is of considerable magnitude: a one-point increase in the discount parameter β implies a 15.5 pp greater likelihood of favouring a public debt cut. Cutting public spending on social security appears to be the most preferred consolidation measure of the forward-looking respondents. A one-point hike in β invokes a 7.5 pp higher likelihood of opting for a welfare spending cut and a 16.5 pp lower likelihood of calling for more spending in that area. Older people and retirees prefer less spending on education and infrastructure, whereas respondents with children strongly support an increase in education expenditure. The latter effect is of especially notable size: having children increases the likelihood of calling for additional spending on education by 8.1 pp and reduces the likelihood of opting for less spending in this area by 7.8 pp. We also obtain particularly large estimates for our education indicators. Respondents who completed higher secondary school (*Abitur*) are 19.7 pp more likely to call for additional spending on education and 11.5 pp more likely to opt for an increase in infrastructure investment than are interviewees with a lower secondary school degree (*Hauptschule*; reference category). At the same time, the better educated have a 11.5 pp higher likelihood of supporting fiscal consolidation.

In line with our prior, *economic literacy* is strongly related to individual attitudes toward public indebtedness and to public spending priorities. Respondents who are perfectly informed about debt-related economic measures—i.e., who answered all three knowledge questions correctly—are 13 pp more likely to support public debt reduction. Cutting public spending on defence appears to be the most preferred consolidation measure of the well-informed, as they are roughly 10 pp more likely to favour lower public expenditure in this area.

The effects of our *trust indicators* reveal that people who lack confidence in politicians appear to be particularly concerned about government expenditure on economic development and defence, whereas spending on public safety and education is viewed with less suspicion. Interviewees who consider the government to be wasteful with tax revenues would like to see less public spending on defence, but more spending on public safety and education, indicating the belief that tax money may be better spent in these areas. Those who regard politicians as fiscally incompetent strongly opt for a tax cut. Specifically, a one-point decrease in the respective indicator (implying stronger support for the notion that the government is wasteful with tax revenues) raises the probability of supporting a tax cut by 5.5 pp. Despite the fact that the German welfare system has been permanently under reform during the past decades and the subject of heated public debate, the confidence in politicians' motives and competence does not reveal a statistically significant influence on attitudes toward spending on social security. Propensity toward egalitarianism exerts a notable influence on attitudes toward public spending in policy areas that tend to reduce social inequality. In line with our conjecture, respondents with an egalitarian attitude have a 6 pp and 4 pp higher probability of supporting more spending on social security and education, respectively. In contrast, more egalitarian respondents prefer lower spending on defence and economic development.

Supporters of different *political parties* differ notably in their attitudes toward welfare spending. In line with our conjecture, voters for the Christian Democratic Party (CDU) and the Liberal Democratic Party (FDP) are significantly less likely than non-voters (reference group) as well as voters for the Social Democrats (SPD) and the Green Party to prefer a spending hike on social security. FDP voters are especially reluctant to support an expansion of the welfare state; they are 12.8 pp more likely to opt for a cut in social security spending and 20.5 pp less likely to call for a welfare spending hike compared to non-voters. The difference between FDP voters and voters for the Leftist Party or the Pirates is even larger. In contrast, differences between political camps with respect to public spending on other areas are generally negligible. Supporters of the Green Party are significantly more likely to opt for spending cuts on infrastructure, economic development, and defence than are non-voters. However, they do not differ significantly from those who vote for most of the other parties. There are some notable differences regarding public

revenues, though. Supporters of the left-wing parties, i.e., SPD, the Leftist Party, and the Green Party, are significantly more likely to call for a tax hike than are non-voters and those who vote for right-wing parties, i.e., the CDU and FDP, indicating that they would like to see an expansion of the public sector. Yet again, differences between political camps with regard to attitudes toward public debt incurrence or reduction, respectively, are less pronounced than differences between voters and non-voters.

Next, we turn to the estimation results for Equation (2), i.e., the scenario in which unexpected additional funds can be used to increase public spending in any policy area, cut taxes, or repay public debt. To conserve space, we only report the coefficients of the latent variable model in Table A2 in the Appendix. We find that the estimates explaining individual attitudes toward public spending in various policy areas are very similar, both in terms of signs and p-values, to the scenario assuming a fiscal budget constraint. Thus, people's attitudes toward public spending are not affected by a public budget constraint.

To confirm this impression and test whether the results across Equations (1) and (2) are statistically different, we apply seemingly unrelated regression (SUR) estimation. For each different policy area, we estimate two binary SUR equations, which differ only with respect to the dependent variable. In the first equation, the binary dependent variable refers to the scenario in which the public budget constraint must be taken into account. In the second equation, the binary dependent variable refers to the scenario in which unexpected additional funds become available. The left-hand-side variables take the value 1 if the interviewee opts for a spending hike in the respective policy area (or a *decrease* in taxes or public debt, respectively) and 0 if she prefers not to change public spending in that area or even advocates for a spending cut (or no change/an *increase* in taxes or public debt). We then test—for each policy area separately—whether the coefficients in both equations are equal. Our findings indicate that the impact of our explanatory variables on individual attitudes toward public spending priorities is the same across both scenarios. For each single policy area, the null hypothesis that all coefficients are indistinguishable cannot be rejected at any reasonable level of significance. This conclusion also holds with respect to public debt reduction. Only with regard to tax cuts do the coefficients differ statistically significantly between the two scenarios.[8]

This finding is not only interesting in the current context but has more general implications for survey methodology. It is important to realise that the two scenarios are notably different in terms of their complexity and the intellectual demand they place on interviewees. Forcing respondents to

[8] This result is driven by the trust indicators. The null that the coefficients of the trust measures are equal across both equations can be rejected at the 1% level ($p = 0.0084$). People who have confidence in politicians' motives and competence are more reluctant to opt for a tax cut if there is a budget constraint.

consider the public budget constraint not only makes designing the survey instrument more difficult but also has consequences for the form in which the interviews are conducted. For instance, a scenario assuming a budget constraint is less suited for a telephone survey, as the resulting complexity can be more easily dealt with by using of computer-assisted face-to-face interviews.

4. Conclusion

Following the financial crisis, public expenditure-to-GDP ratios increased greatly in most developed countries. This paper examines the demand for public spending in several policy areas using a unique dataset from a representative household survey carried out in Germany at the beginning of 2013. The interviewees were asked about their attitudes toward public spending in different areas (social security, public safety, education, infrastructure, economic development, defence, and miscellaneous) as well as about their views on taxation and public indebtedness. Our findings suggest that majority voting would yield very few changes in the level of public spending in diverse policy areas or in the composition of public expenditure, respectively. The only policy area in which a spending cut is preferred by a majority of respondents is defence. In the case of public spending on education, roughly 61% opt for higher expenditures.

Our dataset contains detailed information about the interviewees, allowing us to investigate the factors associated with individual attitudes toward different fiscal policy measures. Using theoretical and empirical findings from the literature, we develop a number of testable conjectures and find that individual preferences for public spending differ notably across respondents. Economic well-being, confidence in politicians, economic knowledge, and time and party preferences all exert a statistically significant influence on preferences for public spending, tax policy, and public debt. The magnitude of the effects is particularly large for time preference, economic knowledge, and party preference. A one-point increase in the discount parameter implies an almost 16 pp greater likelihood of favouring a public debt cut and an almost 17 pp lower likelihood of calling for higher social security spending. Respondents who completed higher secondary school (*Abitur*) are 20 pp more likely to prefer additional spending on education and almost 12 pp more likely to favour more infrastructure investment than are interviewees with a lower secondary school degree. Respondents who are very well informed about debt-related economic variables, i.e., have good economic knowledge, are 13 pp more likely to support public debt reduction. Voters supporting the liberal party FDP are almost 21 pp less likely to call for a welfare spending hike compared to non-voters. Thus, the common assumption made in public choice research that voters differ only along a single dimension does not appear to be realistic.

Moreover, we find that preferences for public spending are almost unaffected by consideration of the public budget constraint. Hence, the share of respondents who opt for additional spending in any particular policy area is approximately the same, irrespective of whether spending hikes involve costs (such as decreasing spending in another policy area or increasing taxes or public debt) or unexpected additional funds are available. This finding has important implications for survey methodology, as it suggests that it may not be necessary to design complicated survey questions and use expensive interview methods to obtain people's preferences toward public expenditure.

Appendix

A.1. Description of policy areas and spending figures

Policy area	Description	Spending per capita	Proportion on total
Social security	e.g., unemployment compensation, social welfare, family and youth welfare	€7,660	56.6%
Education	e.g., public schools and universities	€1,125	8.3%
Public safety	e.g., police, justice system	€455	3.3%
Infrastructure	e.g., road and town construction	€350	2.6%
Economic development	e.g., promotion of small and medium-sized companies, investment allowances, financial support for disadvantaged regions	€335	2.5%
Defence	e.g., military equipment, service pay, defence administration	€335	2.5%
Total		€10,260	75.8%

A.2. Explanatory variables

HH income	Monthly net household income in €1,000. In the raw dataset, households are sorted into one of 11 income classes. In the empirical analysis, we consider the centre of each class.
Subjective well-being	Subjective assessment of personal economic well-being ranging from 1 (absolutely dissatisfied) to 5 (absolutely satisfied).
Property	Dummy variable taking the value 1 if the respondent lives in her own house or flat and 0 if the house/flat is rented.
Time preference	See Section A.3.
Deficit	Dummy variable taking the value 1 if the respondent can correctly state 2012's federal budget deficit (0 otherwise). How large was the budget deficit of the federal government in 2012? 1% □ 3% □ 5% □ 7% □
Interest rate	Dummy variable taking the value 1 if the respondent can correctly state the interest rate on government bonds with a maturity of 10 years (0 otherwise). What is the current interest rate on long-term government bonds (maturity 10 years) approximately? 1.5% □ 3% □ 5.5% □ 10% □
Inflation	Dummy variable taking the value 1 if the respondent can correctly state 2012's inflation rate (0 otherwise). How large was inflation in 2012 approximately? 0% □ 2% □ 5% □ 10% □

Public interest	Most politicians in Germany act in line with the general public's interest		vs.	Most politicians in Germany only serve the interests of particular groups	
	+2: □	+1: □	0: □	−1: □	−2: □
Long-run orientation	Most politicians in Germany are concerned about the country's long-term well-being		vs.	Most politicians are only concerned about the next elections	
	+2: □	+1: □	0: □	−1: □	−2: □
Fiscal competence	The state manages tax revenues conscientiously		vs.	The state is wasteful with tax revenues	
	+2: □	+1: □	0: □	−1: □	−2: □
Party preference	Party for which respondent would vote if elections were held next Sunday: Social Democratic Party (SPD), Christian Democratic Party (CDU), Leftist Party, Green Party, Pirates, Liberal Democratic Party (FDP), and National Democratic Party of Germany (NPD). Alternatively, the respondents could state that they would vote for a different party or that they would not vote at all.				
Education	Education level of the respondent, differentiating between lower secondary education (reference category), middle secondary education, and upper secondary education.				
Employment HH head	Employment status of the household head, differentiating between regularly employed (reference category), unemployed, retired, student, and jobless for other reasons.				
Age	Respondent's age measured in years.				
Children	Dummy variable taking the value 1 if the respondent has children (0 otherwise).				
Female	Dummy variable taking the value 1 if the respondent is female (0 otherwise).				
Egalitarian attitude	The state should ensure equal living conditions		vs.	The state should not interfere in peoples' living conditions	
	+2: □	+1: □	0: □	−1: □	−2: □
Risk preference	See Section A.3.				
Family status	Family status of respondent, differentiating between single (reference category), living with a partner, married, or divorced/widowed.				

A.3. Measurement of risk and time preferences

Next, we would like to conduct some experiments concerned with financial decisions. In the first experiment you make your decisions according to the following table (*Interviewer: Please show the table below*). In each row you see two alternatives. You can choose between a safe payoff and participation in a lottery which follows the principle 'all or nothing': You have a 50% chance of winning 1,000 Euro and a 50% chance of winning 0 Euro.

You start in row 1 and then proceed row by row. In each row, please choose between the safe payoff (column A) and participation in the lottery (column B). The lottery remains the same in all rows. Only the safe payoff increases from row to row.

	You get … **Safe**		You get … **€1,000 or nothing** Chance of winning 50:50
	A	**or**	**B**
1	€0 safe		Chance of winning €1,000/€0
2	€100 safe		Chance of winning €1,000/€0
3	€200 safe		Chance of winning €1,000/€0
4	€300 safe		Chance of winning €1,000/€0
5	€400 safe		Chance of winning €1,000/€0
6	€500 safe		Chance of winning €1,000/€0
7	€600 safe		Chance of winning €1,000/€0
8	€700 safe		Chance of winning €1,000/€0
9	€800 safe		Chance of winning €1,000/€0
10	€900 safe		Chance of winning €1,000/€0

Interviewer: Please start with row 1 and the question 'How do you choose? €0 safe or chance of winning €1,000/€0?'. If the interviewee chooses option B, please proceed with row 2 and the question 'How do you choose? €100 safe or chance of winning €1,000/€0?'. The experiment ends when the interviewee chooses option A for the first time. Please write down the number of the row in which the respondent chose option A for the first time.

Option A was first chosen in row number: ☐

In the next experiment you decide according to the following table (*Interviewer: Please show the table below*). In each row you see two alternatives. You can choose between a safe payoff of €1,000 which is paid to you **immediately** and a higher safe payoff which will be paid to you **in 6 months**.

You start in row 1 and then proceed row by row. In each row, please choose between the safe payoff of €1,000 to be paid **immediately** (column A) and the higher safe payoff to be paid **in 6 months** (column B). The payoff on the left remains the same in all rows. Only the payoff on the right increases from row to row.

	You get … **Immediately** **A**	**or**	You get … **In 6 months** **B**
1	€1,000		€1,000
2	€1,000		€1,010
3	€1,000		€1,020
4	€1,000		€1,030
5	€1,000		€1,050
6	€1,000		€1,075
7	€1,000		€1,100
8	€1,000		€1,150
9	€1,000		€1,200
10	€1,000		€1,300
11	€1,000		€1,400
12	€1,000		€1,500
13	€1,000		€1,750
14	€1,000		€2,000

Interviewer: Please start with row 1 and the question 'How do you choose? €1,000 immediately or €1,000 in 6 months?'. If the interviewee chooses option A, please proceed with row 2 and the question 'How do you choose? €1,000 immediately or €1,010 in 6 months?'. The experiment ends when the interviewee chooses option B for the first time. Please write down the number of the row in which the interviewee chose option B for the first time.

Option B was first chosen in row number: ☐

In the last experiment you decide according to the following table (*Interviewer: Please show the table below*). In each row you see two alternatives. You can choose between a safe payoff of €1,000 which is paid to you **in 6 months** and a higher safe payoff which will be paid to you **in 12 months**.

You start in row 1 and then proceed row by row. In each row, please choose between the safe payoff of €1,000 to be paid **in 6 months** (column A) and the higher safe payoff to be paid **in 12 months** (column B). The payoff on the left remains the same in all rows. Only the payoff on the right increases from row to row.

	You get … **In 6 months** **A**	**or**	You get … **In 12 months** **B**
1	€1,000		€1,000
2	€1,000		€1,010
3	€1,000		€1,020
4	€1,000		€1,030
5	€1,000		€1,050
6	€1,000		€1,075
7	€1,000		€1,100
8	€1,000		€1,150
9	€1,000		€1,200
10	€1,000		€1,300
11	€1,000		€1,400
12	€1,000		€1,500
13	€1,000		€1,750
14	€1,000		€2,000

Interviewer: Please start with row 1 and the question 'How do you choose? €1,000 in 6 months or €1,000 in 12 months?'. If the interviewee chooses option A, please proceed with row 2 and the question 'How do you choose? €1,000 in 6 months or €1,010 in 12 months?'. The experiment ends when the interviewee chooses option B for the first time. Please write down the number of the row in which the interviewee chose option B for the first time.

Option B was first chosen in row number: ☐

A.4. Additional results

Table A1: Determinants of individual attitudes toward public spending priorities—average marginal effects

Variables	Social Security			Public Safety			Education		
	Hike	No Change	Cut	Hike	No Change	Cut	Hike	No Change	Cut
HH income	−0.036***	0.019***	0.016***	0.003	−0.003	0.000	0.019	−0.018	−0.001
Subjective well-being	−0.023**	0.013**	0.010**	0.028**	−0.025**	−0.004**	0.014	−0.014	−0.001
Property	0.025	−0.014	−0.012	−0.038	0.033	0.005	−0.041*	0.039*	0.002
β	−0.165**	0.090**	0.075**	−0.053	0.047	0.007	−0.077	0.074	0.003
δ	−0.007	0.004	0.003	−0.028	0.025	0.004	−0.031	0.030	0.001
One correct answer	0.022	−0.012	−0.010	0.016	−0.014	−0.002	0.027	−0.025	−0.001
Two correct answers	−0.003	0.002	0.002	0.005	−0.005	−0.001	0.061**	−0.059**	−0.003*
Three correct answers	0.067	−0.039	−0.028	−0.090**	0.074**	0.016	0.073	−0.070	−0.003
Public interest	0.018	−0.010	−0.008	0.016	−0.014	−0.002	−0.005	0.005	0.000
Long-term orientation	−0.001	0.001	0.000	0.010	−0.009	−0.001	0.002	−0.002	0.000
Fiscal competence	−0.013	0.007	0.006	−0.035***	0.031***	0.004***	−0.034**	0.032**	0.001**
Egalitarian attitude	0.060***	−0.032***	−0.027***	0.003	−0.003	0.000	0.043***	−0.041***	−0.002***
Leftist Party	0.016	−0.010	−0.006	0.027	−0.024	−0.003	0.002	−0.002	0.000
Pirates	0.039	−0.024	−0.015	0.005	−0.005	−0.001	−0.059	0.056	0.003
SPD	−0.006	0.004	0.003	0.043	−0.038	−0.005	0.000	0.000	0.000
Green Party	−0.020	0.012	0.009	−0.014	0.012	0.002	0.045	−0.044	−0.002
CDU	−0.064**	0.035*	0.029*	−0.022	0.019	0.003	0.023	−0.022	−0.001
FDP	−0.205***	0.077***	0.128***	0.012	−0.011	−0.002	0.030	−0.028	−0.001
NPD	−0.069	0.037	0.031	0.244**	−0.227**	−0.018***	0.133	−0.128	−0.005
Other	−0.076*	0.041*	0.035	−0.022	0.019	0.003	−0.050	0.047	0.002
Middle second. school	−0.010	0.006	0.004	0.027	−0.024	−0.003	0.120***	−0.114***	−0.005***
Higher second. school	−0.066**	0.034**	0.032**	−0.024	0.020	0.003	0.197***	−0.189***	−0.008***
Unemployed	0.075	−0.044	−0.031*	−0.003	0.003	0.000	−0.078	0.074	0.004
Retired	0.059	−0.034	−0.025*	0.049	−0.043	−0.006	0.008	−0.008	0.000
Student	−0.025	0.014	0.011	−0.075	0.062	0.013	0.054	−0.051	−0.003
Vocational training	−0.077*	0.034**	0.043	0.026	−0.023	−0.003	0.116**	−0.111**	−0.004**
Homemaker	0.051	−0.029	−0.022	−0.006	0.005	0.001	0.056	−0.054	−0.002
Age	−0.001	0.001	0.001	0.001	−0.001	0.000	−0.002**	0.002**	0.000*
Children	0.010	−0.005	−0.005	0.011	−0.010	−0.001	0.081***	−0.078***	−0.004**
Female	0.012	−0.007	−0.005	0.049**	−0.043**	−0.006**	0.026	−0.025	−0.001
Risk preference	0.026*	−0.014*	−0.012	−0.024	0.021	0.003	−0.028*	0.027*	0.001
Living in partnership	−0.022	0.011	0.011	0.008	−0.007	−0.001	−0.116***	0.111***	0.005**
Married	0.041	−0.023	−0.019	0.021	−0.018	−0.003	−0.037	0.035	0.001
Divorced/widowed	0.005	−0.002	−0.002	−0.034	0.029	0.005	−0.047	0.045	0.002

Table A1 (continued)

Variables	Infrastructure			Economic Development			Defence		
	Hike	No Change	Cut	Hike	No Change	Cut	Hike	No Change	Cut
HH income	0.004	−0.002	−0.002	0.001	0.000	−0.001	0.000	0.005	−0.006
Subjective well-being	0.001	−0.001	−0.001	0.009	−0.002	−0.007	0.001	0.007	−0.008
Property	−0.017	0.010	0.008	−0.014	0.003	0.012	−0.001	−0.008	0.009
B	−0.065	0.036	0.029	−0.065	0.012	0.054	−0.002	−0.023	0.025
Δ	−0.039	0.022	0.017	−0.017	0.003	0.014	−0.001	−0.007	0.008
One correct answer	0.015	−0.008	−0.007	−0.002	0.000	0.001	−0.006**	−0.067***	0.073***
Two correct answers	0.019	−0.011	−0.009	0.011	−0.002	−0.009	−0.009***	−0.109***	0.118***
Three correct answers	0.001	0.000	0.000	−0.040	0.001	0.038	−0.006	−0.077	0.083
Public interest	0.003	−0.002	−0.001	−0.007	0.001	0.005	0.001	0.008	−0.008
Long-term orientation	0.002	−0.001	−0.001	0.017*	−0.003*	−0.014*	0.002*	0.024**	−0.026**
Fiscal competence	0.004	−0.002	−0.002	0.009	−0.002	−0.007	0.002*	0.023*	−0.024*
Egalitarian attitude	0.009	−0.005	−0.004	−0.001	0.000	0.000	−0.002***	−0.030***	0.032***
Leftist Party	−0.031	0.017	0.014	−0.046	0.001	0.045	−0.006*	−0.080*	0.085*
Pirates	0.072	−0.051	−0.021	−0.001	0.000	0.001	−0.001	−0.015	0.016
SPD	−0.009	0.005	0.004	0.004	−0.001	−0.003	−0.003	−0.041	0.044
Green Party	−0.057**	0.027**	0.030**	−0.039*	0.002	0.036	−0.006**	−0.087**	0.093**
CDU	−0.007	0.004	0.003	0.017	−0.004	−0.013	0.000	0.003	−0.003
FDP	−0.016	0.009	0.006	0.028	−0.008	−0.020	0.000	−0.004	0.005
NPD	0.037	−0.025	−0.012	−0.060	−0.002	0.062	0.025	0.186	−0.211*
Other	−0.016	0.009	0.007	0.017	−0.004	−0.013	0.004	0.047	−0.052
Middle second. school	0.038**	−0.019**	−0.019**	0.044**	−0.009**	−0.035**	−0.006***	−0.070***	0.075***
Higher second. school	0.115***	−0.074***	−0.042***	0.005	0.000	−0.005	−0.008***	−0.101***	0.109***
Unemployed	−0.059*	0.031**	0.027	0.029	−0.009	−0.020	−0.006**	−0.086**	0.092**
Retired	−0.070***	0.035***	0.035**	−0.043*	0.004	0.039*	−0.002	−0.020	0.021
Student	−0.070**	−0.007	0.077	−0.053	−0.010	0.063	0.006	0.057	−0.063
Vocational training	0.037	−0.026	−0.011	0.030	−0.009	−0.020	−0.002	−0.023	0.024
Homemaker	−0.060*	0.032**	0.028	−0.010	0.002	0.008	0.001	0.008	−0.009
Age	0.001	−0.001	−0.001	−0.001	0.000	0.000	0.000	−0.001	0.001
Children	0.023	−0.013	−0.011	0.012	−0.002	−0.010	0.001	0.013	−0.014
Female	−0.043***	0.024**	0.018***	−0.028*	0.005	0.023*	0.001	0.013	−0.014
Risk preference	0.011	−0.006	−0.005	0.000	0.000	0.000	−0.001	−0.010	0.011
Living in partnership	−0.005	0.002	0.002	0.009	−0.002	−0.006	−0.003	−0.031	0.033
Married	0.017	−0.010	−0.008	−0.024	0.004	0.019	−0.004	−0.048	0.052
Divorced/widowed	0.018	−0.010	−0.008	−0.010	0.002	0.007	−0.001	−0.017	0.018

Table A1 (continued)

Variables	Taxes			Public Debt		
	Hike	No Change	Cut	Hike	No Change	Cut
HH income	0.008**	0.018**	−0.026**	−0.008	−0.020**	0.028**
Subjective well-being	0.005	0.010	−0.014	−0.002	−0.005	0.007
Property	−0.011	−0.023	0.034	−0.010	−0.026	0.036
B	0.018	0.039	−0.057	−0.044	−0.111**	0.155**
Δ	0.011	0.024	−0.035	−0.017	−0.044	0.062
One correct answer	0.002	0.005	−0.007	−0.006	−0.015	0.021
Two correct answers	0.014	0.030	−0.044	−0.013	−0.033	0.046
Three correct answers	0.033	0.055**	−0.088*	−0.032	−0.099**	0.130**
Public interest	0.002	0.005	−0.007	−0.001	−0.003	0.004
Long-term orientation	−0.003	−0.006	0.009	0.001	0.002	−0.003
Fiscal competence	0.017***	0.037***	−0.055***	−0.001	−0.003	0.004
Egalitarian attitude	0.002	0.005	−0.008	0.001	0.003	−0.004
Leftist Party	0.044**	0.076***	−0.120***	−0.024	−0.065*	0.090*
Pirates	0.015	0.036	−0.050	−0.033	−0.097	0.129
SPD	0.022**	0.049**	−0.071**	−0.004	−0.009	0.013
Green Party	0.037***	0.069***	−0.105***	−0.027	−0.075***	0.102***
CDU	−0.002	−0.006	0.008	−0.001	−0.002	0.002
FDP	−0.006	−0.020	0.026	−0.019	−0.047	0.066
NPD	−0.007	−0.022	0.029	−0.057	−0.234**	0.291***
Other	−0.011	−0.037	0.047	−0.038	−0.121***	0.159***
Middle second. school	0.011	0.025	−0.036	−0.016	−0.036**	0.051**
Higher second. school	0.015	0.033*	−0.048*	−0.031	−0.084***	0.115***
Unemployed	0.008	0.019	−0.027	−0.022	−0.070*	0.093*
Retired	0.030**	0.058***	−0.089***	−0.007	−0.019	0.025
Student	−0.010	−0.030	0.040	−0.023	−0.057	0.080
Vocational training	0.017	0.038	−0.055	0.024	0.048	−0.073
Homemaker	0.006	0.015	−0.020	0.009	0.021	−0.031
Age	0.001**	0.001**	−0.002**	−0.001	−0.003***	0.004***
Children	0.011	0.023	−0.034	0.004	0.010	−0.014
Female	0.006	0.014	−0.020	0.006	0.015	−0.021
Risk preference	0.000	0.001	−0.001	0.001	0.001	−0.002
Living in partnership	−0.026*	−0.037	0.064	0.001	0.004	−0.005
Married	−0.035**	−0.057***	0.092***	0.008	0.021	−0.029
Divorced/widowed	−0.040***	−0.070***	0.109***	0.013	0.033	−0.046

Notes: The table contains average marginal effects based on ordered logit estimation of Equation (1). White (1980) robust standard errors are used. *, **, and *** indicate significance at the 10%, 5%, and 1% level, respectively.

Table A2: Determinants of individual attitudes toward public spending priorities—using unexpected additional revenues

Variables	Social Security	Public Safety	Education	Infra-structure	Economic Develop.	Defence	Taxes	Public Debt
Economic situation								
HH income	−0.114 **	0.008	0.148 ***	0.128	0.036	−0.299 **	−0.041	0.068
Subjective well-being	−0.130 **	0.097	0.122 **	−0.031	−0.026	−0.234	−0.070	0.044
Property	−0.143	−0.303 **	−0.172 *	0.005	−0.210	0.346	0.148	0.155
Time preferences								
β	−0.668**	0.334	−0.256	−0.189	−0.130	0.520	0.045	1.099***
δ	0.405*	−0.043	−0.138	0.359	0.063	−0.170	0.082	0.051
Economic literacy								
One correct answer	0.113	−0.080	0.102	0.241	0.230	−0.487	−0.158	0.060
Two correct answers	−0.022	−0.119	0.184	0.203	0.354**	0.004	−0.387***	0.284**
Three correct answers	0.328	−0.163	0.287	0.173	−0.286	−15.839***	−0.426*	0.442**
Politic. trust/attitudes								
Public interest	−0.014	0.000	0.061	0.047	0.044	0.138	0.005	0.000
Long-run orientation	0.032	−0.008	−0.031	−0.122	−0.003	0.027	0.009	−0.023
Fiscal competence	−0.024	−0.037	−0.107*	0.051	0.078	0.226	−0.080	0.028
Egalitarian attitude	0.173***	−0.002	0.119***	0.001	−0.098*	−0.060	−0.065*	−0.015
Party preference								
Leftist Party	0.236	0.356	0.218	−0.371	−0.456	−0.595	−0.254	0.012
Pirates	−0.331	−0.327	−0.372	−0.275	0.617	0.462	0.147	0.195
SPD	0.182	0.203	−0.024	0.490**	−0.043	−0.183	−0.267*	0.120
Green Party	−0.132	0.112	0.287*	−0.175	−0.173	−0.384	−0.543***	0.382**
CDU	−0.151	0.049	−0.028	−0.101	0.318	−0.430	−0.065	0.255*
FDP	−0.570*	−0.076	0.131	0.435	0.318	−1.207	−0.199	0.050
NPD	−0.028	1.070**	−0.217	−0.062	0.865*	−15.889***	−0.237	0.205
Other	−0.267	0.109	−0.230	−0.613	0.105	−0.321	−0.398*	0.376*
Education								
Middle sec. school	0.084	−0.031	0.418***	0.241	0.283*	−0.245	−0.432***	0.136
Higher sec. school	0.247	0.249	−0.286	−0.977	−1.079	0.931	0.047	0.060
Employment								
Unemployed	−0.028	0.185	−0.072	−0.704*	0.319	0.109	−0.620***	0.143
Retired	0.180	0.357**	0.132	−0.197	−0.388*	−0.159	−0.453***	0.164
Student	−0.123	−0.398**	0.797***	0.601***	0.139	−0.071	−0.587***	0.282**
Vocational training	−0.563**	0.005	0.590***	0.414	0.104	−0.470	−0.716***	0.100
Homemaker	−0.234	0.127	−0.081	0.143	−0.419	0.280	0.014	0.353
Further controls								
Age	−0.002	0.006	−0.008*	0.008	0.005	0.017	−0.019***	0.011**
Children	−0.020	−0.065	0.291**	−0.001	−0.144	−0.384	−0.042	0.180
Female	0.210**	0.198*	0.306***	−0.178	−0.160	−0.367	−0.203**	−0.213**
Risk preference	0.047	−0.117	−0.094	0.193*	0.175*	0.001	−0.137*	−0.098
Living in partnership	0.126	0.268	−0.559***	−0.357	0.036	0.043	0.244	0.002
Married	0.169	0.312	−0.426***	0.152	−0.091	−0.134	0.442***	−0.254
Divorced/widowed	0.102	0.102	−0.380**	0.241	0.120	0.230	0.366**	−0.321*
Dummy β	0.254*	−0.122	0.066	0.379*	0.029	−0.703	−0.126	0.133
Dummy δ	−0.349**	0.181	0.074	−0.212	−0.034	0.473	−0.006	0.267*
State dummies	yes	yes	yes	yes	yes	yes	yes	yes
Pseudo-R^2	0.039	0.037	0.047	0.048	0.053	0.092	0.043	0.026

Note: Results are based on ordered logit maximum likelihood estimation. The dependent variable is 3 if a respondent puts the respective policy measure in first place, 2 if it is ranked second, 1 if it is ranked third, and 0 otherwise. White (1980) robust standard errors are used. *, **, and *** indicate significance at the 10%, 5%, and 1% level, respectively.

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