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# The Protestant Fiscal Ethic: Religious Confession and Euro Skepticism in Germany\*

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## Abstract

During the European sovereign debt crisis, most countries that ran into fiscal trouble had Catholic majorities, whereas countries with Protestant majorities were able to avoid fiscal problems. Survey data show that, within Germany, views on the euro differ between Protestants and Non-Protestants, too. Among Protestants, concerns about the euro have, compared to Non-Protestants, increased during the crisis, and significantly reduce their subjective wellbeing only. We use the timing of survey interviews and news events in 2011 to account for the endogeneity of euro concerns. Emphasis on moral hazard concerns in Protestant theology may, thus, still shape economic preferences.

**Keywords:** Protestantism, euro crisis, subjective wellbeing, media coverage.

**JEL classification numbers:** E00, I31, L82, Z12.

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# 1 Introduction

Since the beginning of the sovereign debt crisis, Europe has been divided along religious lines. Many of the countries with huge fiscal problems have Catholic majorities, Greece is Christian Orthodox. Among the countries that have been doing better, the Netherlands has a Calvinist Protestant tradition, Finland is Lutheran Protestant, only Austria is mostly Catholic. Germany has traditionally been nearly evenly split between Lutherans and Catholics, which raises the question if Germans are divided along religious lines, too.<sup>1</sup> Does religious denomination matter for how Germans view the euro and support for countries with fiscal problems?

In this paper, we examine how religious background shaped the economic beliefs of Germans during the European sovereign debt crisis in 2011. A recent literature emphasizes the role of individual experiences as determinants of economic views, preferences, and characteristics such as risk aversion (Malmendier and Nagel, 2011; Ehrmann and Tzamourani, 2012; Giuliano and Spilimbergo, 2014). But also events that happened hundreds of years ago are often transmitted across generations and may affect the behavior and preferences of current generations (Guiso, Sapienza, and Zingales, 2006, 2008; Nunn, 2009; Voigtländer and Voth, 2012). One important cultural determinant of economic outcomes and preferences is religion (Guiso, Sapienza, and Zingales, 2003; Barro and McCleary, 2005; Iannaccone and Berman, 2008; Renneboog and Spaenjers, 2012).

We contribute to this growing literature by presenting new evidence on the economic relevance of religion. We find that people's beliefs regarding the euro are connected to their religious denominations. Protestants who showed no skepticism towards the euro in 2003 have changed their views during the euro crisis. We substantiate our findings with evidence on people's subjective wellbeing. We use variation in media coverage prior to the time of the interview to show that subjective wellbeing of German Protestants is reduced by exogenous news related to the euro crisis, whereas the wellbeing of Non-Protestants remains largely unaffected.

Our results are in line with a vast literature documenting persistent cultural differences between Protestants and other religious groups, including Catholics. Religious people of all denominations are characterized by higher levels of trust. Gruber (2005) suggests that this effect of religion on trust may be causal. Germany is of particular interest for us because it has both Protestant and Catholic areas and because of its role as a creditor during the euro crisis. Cantoni (2015) finds no effect of the Protestant Reformation on economic growth in Germany. Traummüller (2009, 2010) shows that, while religious people in Germany generally are more socially active, Protestants are most engaged in their

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<sup>1</sup>The idea that religion, in particular cultural differences between Protestants and Non-Protestants, might play a role in the context of the euro crisis has been discussed before in various media outlets (Ankenbrand, 2013, 2014; Bowlby, 2012; Priluck, 2015).

civic communities.<sup>2</sup>

It has long been known that Protestants were doing better economically than Catholics until the early 20th century, not only across countries but also within Germany and, more narrowly, within Prussia. Weber (1904) coined the ‘Protestant work ethic’ hypothesis as an explanation, according to which Protestants were more hard-working than Catholics. Becker and Woessmann (2009) provide evidence that literacy rates were higher among Protestants in 19th century Prussia. In contrast to Catholics, Protestants were supposed to be able to read the Bible, which fostered investments into human capital. Arruñada (2010) shows evidence that Protestants do not generally work harder than Catholics but have different social values that facilitate economic activity. La Porta, Lopez-de Silanes, Shleifer, and Vishny (1997) find that trust is lower in Catholic countries. We add to this literature by showing that Protestantism’s emphasis on adherence to rules and avoidance of moral hazard problems may have played a role during the euro crisis.

To understand the background of the euro crisis, recall that the European Monetary Union required a harmonization of fiscal policies among the member states. During the European sovereign debt crisis, substantial fiscal deficits and a sharp increase in interest rates on sovereign bonds of a number of member states necessitated readjustments of both monetary and fiscal policy. The criteria of the Maastricht Treaty, which should have helped to avoid this situation, proved largely ineffective. Whether to follow pre-defined rules for monetary policies has been debated at least since the introduction of the gold standard (Kydland and Prescott, 1977; Fischer, 1990). German central bankers have traditionally been putting more emphasis on rules than central bankers from other countries (Berger and de Haan, 1999; Hayo and Hofmann, 2006). The Germans’ affection for rules may have helped them avoid getting into fiscal trouble in the first place.<sup>3</sup> Under specific assumptions, reputation building can help overcome problems related to commitment to rules. However, as pointed out by Bulow and Rogoff (1989), these assumptions are not likely to hold for loans to countries. Such lending must be supported by direct sanctions available to creditors.

How should policy makers react to breaches of fiscal rules, and what incentives will these reactions set for the future? Will a government whose debt was relieved once become more likely to accumulate debt in the future, believing that it will be relieved again?

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<sup>2</sup>Filistrucchi and Prüfer (2013) find organizational differences between Protestant and Catholic hospitals in Germany that are in line with the two denominations’ theological foundations.

<sup>3</sup>Germany’s economy was referred to as “the sick man of Europe” at the turn of the millennium, and improved significantly over the decade that followed (Dustmann, Fitzenberger, Schönberg, and Spitz-Oener, 2014). The German government deficit has exceeded the 3 percent allowed by the Maastricht Treaty between 2003 and 2006, and, again in 2010 and 2011. A failure of the European Council to sanction Germany’s and France’s breaches of the 3 percent criterion may have led to an increase in fiscal deficits in other euro member states (Baskaran and Hessami, 2013). During the euro crisis, however, markets considered German debt a ‘safe haven,’ which led to a decrease in German bond yields.

Or will this make it harder for them to borrow in the first place? Putting aside effects on the German economy and government budget, debt reductions imposed by, among others, German politicians on other euro member states may have helped these states regain access to bond markets (Born, Müller, and Pfeifer, 2015). But austerity may have the potential to provoke social unrest (Ponticelli and Voth, 2011), and it may have been more costly given that it occurred during a recession (Alesina, Barbiero, Favero, Giavazzi, and Paradisi, 2015).

Religious denomination may shape how German voters believe sanctioning fiscal deficits will affect future behavior. In this paper, we show that German Protestants differ from Non-Protestants including Catholics in how they perceived the euro would affect the economy and their lives. Section 2 describes our empirical approach. We use data from the German Socio-Economic Panel (SOEP) and exploit the fact that interviews for the SOEP's 2011 wave were conducted over the course of several months during which news about the euro crisis fluctuated substantially. Our results in Section 3 show that Protestants, while they were less concerned about the euro than Non-Protestants in 2003, had become more concerned by 2011. Also, we find a negative causal effect of euro concerns on subjective wellbeing among Protestants only. In Section 4, we provide an explanation for these empirical results, according to which Protestantism may be favorable to the belief that not sanctioning fiscal deficits may foster moral hazard. Section 5 concludes.

## **2 Empirical strategy**

### **2.1 Data**

The literature on economic preferences and beliefs relies strongly on data from social surveys, such as the General Social Survey or the World Values Survey. Our research objectives require us to have information on both religious denomination and people's views on the euro currency, which limits the set of possible alternatives. In our empirical analysis, we will first inspect people's overall attitudes with evidence from the European Values Survey (EVS). Descriptive statistics for the EVS sample can be found in Appendix Table A.1. The main focus of our paper is then on data from Europe's largest household panel SOEP, which allows for an investigation of the link between religious affiliations and attitudes towards the euro in Germany before and during the euro crisis.

The German Socio-Economic Panel (SOEP) is a representative panel survey of the German population (Wagner, Frick, and Schupp, 2007; SOEP, 2013). In principle, data collection takes place throughout the whole year, with the majority of interviews taking place between late winter and early summer of each year. The SOEP applies a multi-mode strategy, so that respondents can fill out survey questionnaires on their own or can be interviewed in person by an interviewer.

As the key prerequisite for our study on the role of religion, the SOEP contains information on people’s religious denomination in some of the annual questionnaires. For the years 2003 and 2011, which we use in this study, this information is available.<sup>4</sup> We use 2003 because it was the last wave before the outbreak of the euro crisis, in which SOEP participants were asked about their views regarding the euro. Previous research on attitudes towards the euro currency focuses on the time of the new currency’s introduction (e.g. Luna-Arocas, Guzman, Quintanilla, and Farhangmehr, 2001). The topic has received less attention in subsequent years. After the breakout of the euro crisis, however, the SOEP re-integrated the question whether people are concerned about the euro in 2011.

To capture attitudes, each annual SOEP questionnaire contains a large block of questions that begins with: “What is your attitude towards the following areas—are you concerned about them?” Respondents can choose between three possible answers: “Very concerned,” “Somewhat concerned,” and “Not concerned at all.” The list of topics includes various social and economic issues. During the time of the euro implementation, and again in 2011, respondents were asked whether they were concerned about the “introduction of the euro in place of the Deutsche mark.” In line with the literature (e.g. Goebel, Krekel, Tiefenbach, and Ziebarth, 2013), we use a dummy indicator for whether respondents say they are “very concerned” to measure euro concerns. Chadi (2015) uses these responses from the 2011 wave to investigate whether strong concerns about the euro matter for people’s overall satisfaction with life. Chadi shows that euro skepticism is a causal determinant of lower subjective wellbeing for a minority of very concerned German citizens and their relative unhappiness helps predict subsequent election results.

To measure subjective wellbeing, we use the answers to the question “How satisfied are you with your life, all things considered?” The survey respondents have the choice between eleven answers on a scale ranging from 0 (“completely dissatisfied”) to 10 (“completely satisfied”). For ease of interpretation this variable is commonly interpreted linearly in empirical research on wellbeing (see Ferrer-i Carbonell and Frijters, 2004). Appendix Table A.2 shows detailed descriptive statistics for Protestants, Non-Protestants, and Catholics as a subset of Non-Protestants separately.

Recent research shows adverse effects of the financial and banking crises on the happiness of Americans (Deaton, 2012) and Europeans (Montagnoli and Moro, 2014). While, for example, during the financial crisis of 2008/09, unemployment went up and incomes went down, the German economy did relatively well during the euro crisis in 2011 (Dustmann, Fitzenberger, Schönberg, and Spitz-Oener, 2014). The euro crisis led to increased

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<sup>4</sup>The exact question wording is: “Do you belong to a church or religious community? If yes, are you [Catholic, Protestant, etc.]” The procedure differs from the one in the EVS where people are first asked a simple yes or no question for religion and can then skip a battery of options. In the EVS, the share of respondents who refer to themselves as nondenominational is higher, but still more than half of them report a religious denomination.

uncertainty about future economic conditions and fiscal transfers towards Greece and Portugal, but low interest rates and capital inflows from struggling economies in the euro zone helped the German economy recover from the financial crisis. In contrast to the financial crisis, the euro crisis had only a perceived rather than an actual adverse effect on the German population at large.

## 2.2 Identification

Religious denomination is, in the vast majority of all cases, exogenously determined by the family into which one is born. The Peace of Augsburg in 1555 is the most important historical event that determined the distribution of Catholics and Protestants in Germany until today. This religious peace treaty gave territorial lords the right to choose their state's official denomination, which then had to be adopted by the entire population living in their domain.<sup>5</sup> Cantoni (2012) shows that distance to Wittenberg, where Luther taught, is a major determinant of the adoption of Protestantism. The lords' choice may have been correlated with social attitudes in their territories, which might also have been transmitted across generations, which would then call into question the causal primacy of Protestantism. But even if this were the case, it would not substantially affect the interpretation of our results. We would then measure an effect of cultural traits of Protestants that are reflected in Protestant theology, as we will discuss in Section 4.

Concerns about the euro crisis, on the other hand, may be due to a general sentiment of dissatisfaction with life. However, the number of events related to the euro crisis, and thus its media coverage, varied over the year 2011. To the extent to which the survey respondents' stated concerns about the euro were related to the timing of media coverage of the euro crisis, reverse causality is not likely an issue. We, therefore, make use of the instrument 'media coverage of the term euro crisis,' which was first proposed and applied in Chadi (2015). We argue that the decision to do the survey on a specific date is not related to any political development at the time of the interview. Appendix Table A.3 shows the shares of respondents of different denominations in the SOEP across different months in 2011.<sup>6</sup> The use of this instrument makes our paper part of an emerging literature that exploits interview dates as a source of exogenous variation (Metcalf, Powdthavee, and Dolan, 2011; Goebel, Krekel, Tiefenbach, and Ziebarth, 2013; Schüller, 2012).

Daily-level data on media coverage of the euro crisis for the year 2011 was retrieved from *LexisNexis*. Chadi (2015) contains more detailed information on the use of number

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<sup>5</sup>Spenkuch and Tillmann (2015) use the resulting religious borders in 1555 to instrument for the regional distribution of Catholics and Protestants in Germany in 1933. They examine the effects of religious denomination on the results of the election that brought the Nazis into power.

<sup>6</sup>To verify that Protestants were not disproportionately surveyed after news events, we regressed our measure of news about the euro crisis on daily and weekly shares of Protestants in the survey. We did not find a statistically significant correlation.



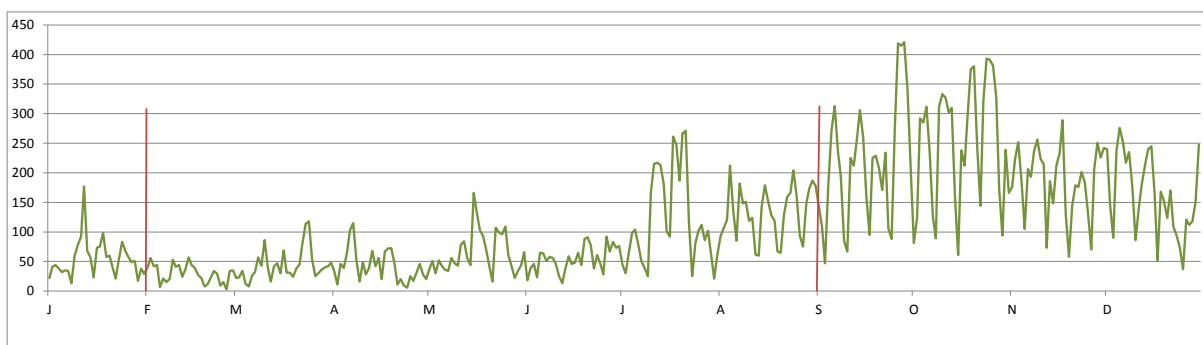


Figure 1: FREQUENCY OF THE TERM ‘EURO CRISIS’ IN MEDIA REPORTS IN 2011.

of media citations of the term “euro crisis” (*Eurokrise* or *Euro-Krise* in German) as an instrument. He shows that this instrument works best if one takes the aggregate number of media reports mentioning the term euro crisis over the day of the interview plus the preceding three days. Furthermore, the euro crisis unfolded gradually, and the use of the term euro crisis in the media increased throughout the year, as can be seen in Figure 1.

Following Chadi (2015), we corrected the instrument for a linear trend for two reasons. First, people probably got used to media coverage of the euro crisis, so that the same event affected people differently at different points in time. Second, the more “euro crisis” became an established term among media people, the more it may have been used and referred to, independently of actual events and economic developments. For our IV analysis, we use data from the time between February 1 and August 31, during which the vast majority of SOEP interviews took place. We dropped 5 interviews that took place in January and 66 interviews that took place between September and December and use this seven-month period as our period of investigation. The vertical lines in Figure 1 indicate the beginning and the end of our observation period.

Finally, interview mode may affect honesty of respondents when answering questions about both, dependent and explanatory variables. Respondents are less likely to report dissatisfaction with life in oral interviews Conti and Pudney (2011) and less likely to report disapproval of politically sensitive issues like immigration (Wagner and Schraepfer, 2001; Janus, 2010). Chadi (2015) examines the question of survey mode in our context in more detail. In the following, we will focus on data from all self-written interview modes (and exclude oral interviews). We show results for the unrestricted sample in the Appendix.<sup>7</sup>

<sup>7</sup>For the survey dates, we rely on dates specified by the respondents on the survey forms. We exclude surveys, during which interviewers were present all the time. Chadi (2015) uses an even stricter rule and excludes all surveys during which interviewer and participant met in person.



## 3 Empirical results

### 3.1 Attitudes towards the euro among Protestants before and during the crisis

The 2008 European Values Study (EVS) allows for a comparison of social values among religious groups in Germany. This survey was conducted in 2008, at the beginning of the Great Recession and, thus, about two years before the European sovereign debt crisis broke out. About half of the respondents said they were not religious. These numbers reflect a well-documented long-term decline in religiosity in Germany, where church attendance rates are lower than in the U.S. (Iannaccone, 1998; Heineck, 2001). The EVS contains a number of items that relate to how respondents think the European Union will affect them, which allows us to link attitudes towards the E.U. to religious denomination. We also include a regression on how likely the respondents are to approve of tax fraud, as this is a question that has frequently been discussed in German media in relation to the euro crisis.

Table 1 presents estimates based on this survey.<sup>8</sup> The table includes dummies for whether respondents are Protestants, Muslims, belong to a different religious denomination or none at all; Catholic denomination is the left-out baseline category. In line with Arruñada (2010), the Catholic baseline group is significantly more likely to view tax fraud as morally justifiable than the other groups. As can be seen in column (4), German Protestants were not more likely than other religious groups to think that their own country had to pay for other EU members. Answers to the other questions also suggest that in 2008, Protestants were not more or less critical of the European Union than members of other religious groups. In 2008, Protestants differed from Catholics only in their views towards tax fraud and in how they thought the European Union would affect their national culture. At a first glance, Table 1 appears not to lend much support to the central hypothesis of our paper.

Table 2, however, shows that the opinion of Protestants has changed significantly as the euro crisis unfolded. In 2003, when Germany still had trouble meeting the Maastricht criteria itself, Protestants were actually less likely to report concerns about the common European currency. In 2011, this was different. Columns (1) and (4) compare the exact same individuals in these two years. In this restricted sample, there is no significant difference between Catholic and Protestants left in 2011. If we look at the full samples in columns (2) and (5), or at samples that include only respondents with religious denomination in columns (3) and (6), the picture becomes even stronger: the Protestant dummy becomes statistically significant, again, but with the opposite, positive sign compared to 2003. In 2011, Protestants are, conditional on covariates including personal background

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<sup>8</sup>Appendix A shows results for control variables in Table A.4.

Table 1: EVS–ORDERED PROBIT ESTIMATES.

|              | EU-related fears     |                     |                      |                   |                   |
|--------------|----------------------|---------------------|----------------------|-------------------|-------------------|
|              | (1)                  | (2)                 | (3)                  | (4)               | (5)               |
|              | justify tax fraud    | loss soc secur      | loss nat cult        | own ctry pays     | loss of jobs      |
| protestant   | -0.233***<br>(0.071) | -0.013<br>(0.063)   | -0.134**<br>(0.064)  | -0.071<br>(0.064) | 0.033<br>(0.065)  |
| muslim       | -0.182<br>(0.223)    | 0.040<br>(0.189)    | -0.080<br>(0.151)    | -0.100<br>(0.195) | -0.024<br>(0.227) |
| other rel.   | -0.440**<br>(0.180)  | -0.179<br>(0.175)   | -0.337**<br>(0.168)  | -0.184<br>(0.158) | -0.080<br>(0.159) |
| no rel.      | -0.346***<br>(0.064) | 0.161***<br>(0.060) | -0.329***<br>(0.061) | -0.004<br>(0.060) | 0.107*<br>(0.060) |
| controls     | yes                  | yes                 | yes                  | yes               | yes               |
| pseudo-R2    | 0.019                | 0.008               | 0.007                | 0.006             | 0.011             |
| observations | 2036                 | 2002                | 2015                 | 1991              | 2017              |

*Notes:* Robust standard errors are in parentheses; \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ .

and regional economic conditions, even more critical of the euro than Catholics. This change in a typically rather stable economic belief raises the question if different views on the euro among Protestants and Catholics differentially affected subjective wellbeing, too.

Table 3 shows results of regressions of subjective wellbeing on concerns about the euro, on religious denomination, and on interaction terms between these variables. Across all years and all samples, concerns about the euro are negatively correlated with subjective wellbeing. This is true for members of all different religious groups. In 2011, however, this negative correlation suddenly becomes much stronger among Protestants than among members of all other religious groups. This is true both, if we look at balanced sample of individuals who responded to both surveys in 2003 and 2011 only, and if we include all 2011 respondents in the sample. All other religious groups do not differ from each other in ways that are statistically significant, even though the coefficients are often as large as those on the Protestant dummy.

The estimates in Table 3 do not necessarily reflect causal relationships. It could be that Protestants have become less happy between 2003 and 2011, and that the increased concerns about the euro are a mere reflection of their reduced subjective well being. Using the media coverage instrument outlined in Section 2.2, however, we will next show that Protestants are actually more sensitive to news about the euro crisis. We demonstrate that concerns about the euro causally reduce the subjective wellbeing of Protestants, but not that of members of other religious denomination.<sup>9</sup>

<sup>9</sup>The set of controls used in the regressions in this section includes measures of the Big Five personality

Table 2: RELIGIOUS DENOMINATION AND EURO CONCERNS.

|                     | (1)                | (2)                  | (3)                                | (4)                | (5)                  | (6)                                |
|---------------------|--------------------|----------------------|------------------------------------|--------------------|----------------------|------------------------------------|
| Year:               | 2003               | 2003                 | 2003                               | 2011               | 2011                 | 2011                               |
| Sample restriction: | Balanced with 2011 | Full sample for 2003 | Only individuals with denomination | Balanced with 2003 | Full sample for 2011 | Only individuals with denomination |
| Protestant          | -0.028*<br>(0.014) | -0.029**<br>(0.013)  | -0.028**<br>(0.013)                | 0.006<br>(0.016)   | 0.023*<br>(0.014)    | 0.032**<br>(0.014)                 |
| Other religion      | 0.008<br>(0.036)   | -0.009<br>(0.032)    | -0.014<br>(0.033)                  | 0.004<br>(0.033)   | 0.031<br>(0.030)     | 0.034<br>(0.031)                   |
| No denomination     | -0.020<br>(0.018)  | -0.034**<br>(0.015)  |                                    | -0.008<br>(0.018)  | 0.020<br>(0.015)     |                                    |
| observations        | 9182               | 12060                | 8119                               | 9182               | 12518                | 8227                               |
| R <sup>2</sup>      | 0.085              | 0.078                | 0.091                              | 0.091              | 0.092                | 0.105                              |

*Notes:* Estimates are from a linear probability model. Dependent variable is being very concerned about the euro. Reference category for religious affiliation is Catholic. Set of controls includes variables for gender, migration background (number of variables is 2), age (3), nationality (4), education (4), employment (6), retirement, income, house ownership, housing conditions (4), household composition (3), family status (4), partnership, health status (3), recent life events (6), federal state (15), year in the panel (26), and interview mode (5). Also included are the Big Five personality factors with a set of 10 binary variables for high and low extraversion, agreeableness, conscientiousness, neuroticism, and openness. Robust standard errors are in parentheses. Survey weights are used. SOEP data from 2003 respectively 2011 (with Big Five measures from 2009) are used. \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ .

Table 3: SUBJECTIVE WELLBEING AS DEPENDENT VARIABLE AND CONCERNED ABOUT THE EURO.

|                               | (1)                  | (2)                  | (3)                  | (4)                  | (5)                  | (6)                  | (7)                  | (8)                 |
|-------------------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|---------------------|
| Year:                         | 2003                 | 2003                 | 2003                 | 2011                 | 2011                 | 2011                 | 2011                 | 2011                |
| Sample restriction:           | Balanced with 2011   |                      |                      | Balanced with 2003   |                      |                      | Main sample          |                     |
| Protestant                    | 0.035<br>(0.058)     | 0.055<br>(0.060)     | 0.050<br>(0.061)     | -0.014<br>(0.064)    | 0.063<br>(0.067)     | 0.057<br>(0.068)     | -0.057<br>(0.056)    | -0.057<br>(0.056)   |
| Other religion                | -0.189<br>(0.165)    | -0.189<br>(0.165)    | -0.224<br>(0.184)    | -0.210<br>(0.159)    | -0.206<br>(0.159)    | -0.263<br>(0.170)    | -0.191<br>(0.136)    | -0.248*<br>(0.146)  |
| No denomination               | -0.139*<br>(0.071)   | -0.140**<br>(0.071)  | -0.144**<br>(0.072)  | -0.066<br>(0.074)    | -0.065<br>(0.074)    | -0.064<br>(0.078)    | -0.116*<br>(0.064)   | -0.102<br>(0.068)   |
| Concerned about<br>the euro   | -0.431***<br>(0.060) | -0.398***<br>(0.073) | -0.419***<br>(0.115) | -0.373***<br>(0.066) | -0.261***<br>(0.078) | -0.285***<br>(0.123) | -0.207***<br>(0.066) | -0.198*<br>(0.101)  |
| Protestant ×<br>euro concerns |                      | -0.103<br>(0.130)    | -0.082<br>(0.157)    |                      | -0.359***<br>(0.136) | -0.336**<br>(0.167)  | -0.279**<br>(0.119)  | -0.289**<br>(0.142) |
| Other rel. ×<br>euro concerns |                      |                      | 0.155<br>(0.276)     |                      |                      | 0.309<br>(0.295)     |                      | 0.291<br>(0.248)    |
| No conf. ×<br>euro concerns   |                      |                      | 0.021<br>(0.156)     |                      |                      | -0.006<br>(0.162)    |                      | -0.068<br>(0.137)   |
| observations                  | 9182                 | 9182                 | 9182                 | 9182                 | 9182                 | 9182                 | 12518                | 12518               |
| R <sup>2</sup>                | 0.230                | 0.230                | 0.230                | 0.239                | 0.241                | 0.241                | 0.225                | 0.225               |

Notes: Dependent variable is wellbeing on a 0 to 10 scale. Reference category for religious affiliation is Catholic. See Table 2 for the controls. Robust standard errors are in parentheses. Survey weights are used. SOEP data from 2003 respectively from 2011 (with Big Five measures from 2009) are used. \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ .

Table 4: REDUCED FORM AND FIRST STAGE ESTIMATION RESULTS.

|   | (1)                 | (2)                 | (3)                | (4)                 |
|---|---------------------|---------------------|--------------------|---------------------|
|   | Protestants         | Non-Protestants     | Catholics          | full sample         |
| Reduced form estimates: subjective wellbeing and news |                     |                     |                    |                     |
| News  | -0.529**<br>(0.229) | -0.113<br>(0.156)   | -0.150<br>(0.197)  | -0.290**<br>(0.133) |
| Controls  | yes                 | yes                 | yes                | yes                 |
| Observations  | 2071                | 4365                | 1705               | 6436                |
| R <sup>2</sup>  | 0.2279              | 0.2160              | 0.2519             | 0.1955              |
| First stage: concerns about the euro and news         |                     |                     |                    |                     |
| News  | 0.194***<br>(0.057) | 0.129***<br>(0.045) | 0.166**<br>(0.067) | 0.153***<br>(0.037) |
| Controls  | yes                 | yes                 | yes                | yes                 |
| Observations  | 2071                | 4365                | 1705               | 6436                |
| R <sup>2</sup>  | 0.2153              | 0.1188              | 0.1888             | 0.1208              |
| F-Test on instrument                                  | 11.80               | 8.35                | 6.04               | 17.24               |

*Notes:* Dependent variable in upper panel is wellbeing on a 0 to 10 scale. Dependent variable in lower panel is being very concerned about the euro. Control variables are same as in Table 2, except for Big Five personality measures, which are not included. Robust standard errors are in parentheses. \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ .

### 3.2 The effect of euro concerns on subjective wellbeing

The upper panel of Table 4 shows reduced form estimates for our model.<sup>10</sup> We regress subjective wellbeing on the measure of media reports on the euro crisis during the days before the interview, which we outlined in Section 2.2. We observe a significant negative effect of our exogenous instrument on subjective wellbeing among Protestants, but not among Non-Protestants and among Catholics as a subset of the Non-Protestants. The effect among Protestants is strong enough to produce a significant relationship between the exogenous instrument and subjective wellbeing in the full sample. We have now established a link between the exogenous event media reports on the euro crisis and subjective wellbeing among Protestants. But were those respondents whose subjective wellbeing was reduced by these news actually concerned about the fate of the joint currency, or was something else going on?

The lower panel of Table 4 shows estimation results for the first-stage regressions of the IV procedure. We observe that media reports on the euro crisis led to increased

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traits, which are often used in this literature to address identification issues. In the following Section 3.2 we will not include the Big Five personality traits. Our results, however, are robust to their inclusion.

<sup>10</sup>In contrast to Section 3.1, we now exclude all face-to-face interviews. Results for the full sample can be found in Appendix Tables A.6 and A.7.

concerns about the euro in all subgroups. The F-statistics in columns (1) and (4) are greater than 10 and, thus, in line with the rule of thumb for one endogenous regressor (Staiger and Stock, 1997).<sup>11</sup> Despite significantly positive coefficients, the instrument is weak for Non-Protestants and Catholics only.

Table 5 shows results for the second stage of our IV procedure in the odd-numbered columns along with corresponding OLS estimates of the effect of euro concerns on subjective wellbeing. While, according to levels of significance, Protestants did not stand out as being different in the first stage, they are the only group, for which we can observe a causal effect of euro concerns on subjective wellbeing. While among the Non-Protestants and Catholics only, the IV estimates are negative and larger in magnitude than the OLS estimates, they are not statistically significant.<sup>12</sup> In the combined sample of all denominations, we observe an effect that is negative and statistically significant. However, this effect appears to be entirely driven by the Protestants in our sample.

Chadi (2015) emphasizes the importance of different survey modes. Respondents may answer the potentially sensitive question if they are concerned about the euro more honestly when no interviewer is present to record their responses. We, therefore, exclude all observations for which an interviewer was present all the time. The remaining sample consists primarily of surveys that were submitted by mail or that were later picked up by interviewers who were not present while respondents answered the surveys. Results in Table A.6 show that the relationship between subjective wellbeing and euro concerns on the one hand, and frequency of the term ‘euro crisis’ in the news, indeed, becomes weaker but does not disappear if we include personal interviews. Results in Table A.7 show that the causal effect of news on the euro crisis becomes smaller if we include interviews with interviewer presence but remains statistically significant at the 10% level.

If we look at the simple OLS estimates in columns (2), (4), (6) and (8), we observe a negative relationship between euro concerns and subjective wellbeing among all different subgroups. Our IV results, however, suggest causal effects among Protestants only. Survey respondents of all religious denominations appear to be more likely to report that they are concerned about the euro if they were less satisfied with life in the first place. But among Protestants there are people who appear to actually react to news about the euro crisis.

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<sup>11</sup>Given the number of control variables, there may, however, still be size distortions (Stock and Yogo, 2005). We will, therefore, closely compare the estimates of the second stage with results of OLS regressions. For the regression output for the full model with regression coefficients for all control variables in column (4), see Appendix Table A.5.

<sup>12</sup>One might argue that, while Catholics are more likely to attend church, Protestants may still be more able to read and have more exposure to news (Glaeser and Sacerdote, 2008). Indeed, Protestants still have more schooling on average than Catholics (0.3 years according to our data in Table A.2; 0.8 years according to Becker and Woessmann, 2009). But illiteracy is virtually non-existent in Germany and we control for educational outcomes.

Table 5: SECOND STAGE: SUBJECTIVE WELLBEING EXPLAINED BY INSTRUMENTED CONCERNS ABOUT THE EURO.

|                | (1)                    | (2)       | (3)             | (4)       | (5)       | (6)       | (7)               | (8)       |
|----------------|------------------------|-----------|-----------------|-----------|-----------|-----------|-------------------|-----------|
|                | Protestants            |           | Non-Protestants |           | Catholics |           | all denominations |           |
|                | IV                     | OLS       | IV              | OLS       | IV        | OLS       | IV                | OLS       |
|                | No interviewer present |           |                 |           |           |           |                   |           |
| Euro concerns  | -2.719**               | -0.712*** | -0.878          | -0.340*** | -0.903    | -0.463*** | -1.887**          | -0.458*** |
|                | (1.228)                | (0.154)   | (1.205)         | (0.099)   | (1.153)   | (0.148)   | (0.891)           | (0.084)   |
| Controls       | yes                    | yes       | yes             | yes       | yes       | yes       | yes               | yes       |
| Observations   | 2071                   | 2071      | 4365            | 4365      | 1705      | 1705      | 6436              | 6436      |
| R <sup>2</sup> | 0.0788                 | 0.2450    | 0.2079          | 0.2212    | 0.2525    | 0.2617    | 0.1104            | 0.2039    |

*Notes:* Dependent variable is wellbeing on a 0 to 10 scale. Control variables are same as in Table 2, except for Big Five personality measures, which are not included. Robust standard errors are in parentheses. \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ .



In all subgroups, the IV coefficients are more negative than the OLS coefficients, reflecting the LATE property of IV estimation. Imbens and Angrist (1994) showed that IV estimation measures causal effects only for ‘compliers,’ i.e. for individuals for whom the instrumental variable affects the endogenous variable in the way desired by the researcher. Our compliers are those individuals who become more worried after reading news about the euro crisis. In this subset, the coefficient captures not only the negative correlation between euro concerns and subjective wellbeing, but also the negative news effects. The magnitude of the coefficient for Protestants in column (1) of -2.7 corresponds to one quarter of the entire scale from 0 to 10, and to 40 percent of the average wellbeing among Protestants of 6.89.

Why do news about the euro crisis reduce the subjective wellbeing of German Protestants, whereas others, including Catholics, appear to be more resilient towards such adverse macro shocks? The following Section 4, will discuss how history provides a likely explanation for our findings.

## 4 Protestantism and moral hazard

The sacrament of confession is one seven Catholic sacraments, whereby a believer confesses his sins to a priest, expresses regret and is absolved. It is obvious to an economist that confession allows for intertemporal substitution.<sup>13</sup> Protestants, on the other hand, believe they will be accountable for everything they did during their lives. In fact, the roots for Protestantism were laid when Martin Luther protested against a sixteenth-century practice of selling indulgences.<sup>14</sup> Thus, we argue that moral hazard considerations are more important to Protestants than to others, including Catholics. To be sure, fewer people nowadays self-identify as religious or are familiar with theological subtleties. Protestants may have been more different from Catholics in the past than they are now.<sup>15</sup> However, differences in economic views and social values persist. In particular, our results corroborate the notion that, in line with Lutheran teachings, Protestants care more about rules.

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<sup>13</sup>For a thorough economic analysis of the sacrament of confession, see Arruñada (2009). In this paper and in Arruñada (2010), he pointed out that cultural differences between Protestants and Catholics are due to different dealings with sin and guilt. In this context, note that the German word for denomination is *Konfession*.

<sup>14</sup>Indulgences are “remissions before God of the temporal punishment due to sins whose guilt has already been forgiven” according to the Catechism of the Catholic Church: [http://www.vatican.va/archive/ENG0015/\\_P4G.HTM](http://www.vatican.va/archive/ENG0015/_P4G.HTM).

<sup>15</sup>In our data, 0.3 years of difference in years of schooling between Protestants and Catholics persist (0.8 years in Becker and Woessmann, 2009), but Catholics do not appear to be poorer anymore. While Catholic Bavarians only reluctantly joined the first German nation state in 1871 after being bailed out by the Prussians (Ullrich, 1998), today Bavaria is among the more prosperous regions in Germany and provides fiscal transfers to other German states (Potrafke and Reischmann, 2015).

In the modern German language, which has been shaped by Luther's translation of the Bible, the word for debt—*Schuld*—is the same as for guilt or blame. In line with the view that Protestantism considers it a moral obligation to make up for debt, Stulz and Williamson (2003) find that predominantly Protestant countries offer more legal protection for creditors. Catholics, on the other hand, still appear more likely to consider creditors the immoral party in debt transactions, believing that one can get rid of debt, like guilt, through forgiveness.<sup>16</sup> Stulz and Williamson (2003) trace this back to a Catholic tradition, under which usury led to excommunication. They argue that in particular the Calvinist Reformation has played an essential role in the development towards making interest a normal part of commerce. They find that interest is still more widely accepted among Protestants than among Catholics.

The medieval church acted as a monopoly supplier of salvation, which in the late middle ages culminated in the widespread practice of sales of offices and sales of indulgences (Ekelund, Hebert, and Tollison, 1989). Lutheran Protestantism emerged in opposition to sales of indulgences. Indeed, Luther's 95 theses written in 1517 were a direct response to a campaign by Dominican friar Johann Tetzel to collect money for the reconstruction of St. Peter's Basilica in Rome.<sup>17</sup> Luther condemned sales of indulgences as fraud, arguing that only God, and not the Pope could grant pardon (see Bornkamm and Ebeling, 1982, p. 261).

Martin Luther's moral code, which emphasized universal principles, is best illustrated by his conduct during the Diet of Worms in 1521. Confronting Catholic Emperor Charles V, Luther refused to recant his writings, allegedly saying: "Here I stand. I can do no other." Protestant ethics is based on uniform moral standards that apply to all individuals and across time. Martin Luther was not willing to give up his principles even under the threat of criminal prosecution. Catholic priests, on the other hand, have traditionally been trained to fine-tune moral standards following prescriptions devised by medieval theologians for different circumstances (Arruñada, 2010). Similarly, during the sovereign debt crisis, European leaders have repeatedly had to decide whether to apply homogeneous standards across countries. Bowlby (2012), among others, compares Angela Merkel's assertion that there is no alternative to austerity to the Luther quote cited above. Crucially, if these standards apply for all countries, they must not be changed across time either. Expectations that running unsustainable fiscal deficits will not be sanctioned may foster moral hazard.

Uniform moral standards may have contributed to the higher economic prosperity of

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<sup>16</sup>Catholics maintain the Jewish tradition of 'Jubilee', whereby every 50 years debts are forgiven and special absolution is given. That language can affect economic behavior has also been shown by Chen (2013).

<sup>17</sup>The slogan "As soon as a coin in the coffer rings, a soul from purgatory springs." is often attributed to Tetzel. According to Ekelund, Hebert, and Tollison (1989), sales of offices accounted for nearly one sixth of ordinary papal income during the pontificate of Leo X (1513-1521).

Protestants. Our framework corroborates Stulz and Williamson's (2003) explanation as to why creditor protection is more developed in Protestant countries. Beyond the purely ethical dimension of the immorality of usury, creditor protection matters for the functioning of financial markets. Legal institutions prevent moral hazard and increase willingness to lend money to other people.

We are not the first to relate the European Union and the euro crisis to Germany's cultural history. Focusing on cross-country cultural differences, Guiso, Herrera, and Morelli (2014) present a model, in which some political leaders tend to forgive violations of fiscal rules, while others prefer to punish them. They conclude that this cultural diversity makes a fiscal union more desirable. Evidence from the European Social Survey supports the view that Germans are generally more in favor of punishing wrongdoers than Greeks are. The authors also quote from a conversation with Thomas Wieser, Chairman of the Economic and Financial Committee of the European Union. Wieser argues that policy makers' different approaches towards the euro crisis can be explained by the religion that is dominant in the country which they represent. Policy makers from Protestant countries tend to think that sins can never be forgiven, whereas policy makers from Catholic countries tend to think that sins can always be forgiven if sinners repent. The Orthodox religion, according to Wieser, is so loose that sinners will not even have to repent to be forgiven.

Dullien and Guérot (2012) link the focus on austerity and price stability to the German tradition of 'ordoliberalism,' which finds support across the political spectrum in Germany. Fratzscher (2014) traces the origins of Germans' affection for rules back to Kantian philosophy, which stresses the importance of legal institutions. Kantian philosophy may, however, itself be a Protestant phenomenon. And religious denomination continued to play a role. German integration into the European Union and into the European Monetary Union were initiated by Catholic Rhinelanders Konrad Adenauer and Helmut Kohl. Angela Merkel, on the other hand, who has been German chancellor since 2005, is the daughter of a Protestant pastor from East Germany, while Joachim Gauck, Germany's president since 2012, is a former Protestant pastor from East Germany himself (Bowlby, 2012).

Just like the general public, professional economists also disagree on whether and how to support struggling economies during the European sovereign debt crisis. German economists published various signature lists supporting or opposing bailouts of struggling economies during the European sovereign debt crisis.<sup>18</sup> In early 2013, a group of academic economists was involved in the foundation of the political party *Alternative für Deutschland* (AfD), which is critical of the euro. Even among professional economists,

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<sup>18</sup>See, for example, <http://www.wiso.uni-hamburg.de/lucke/>, <https://berlinoeconomicus.diw.de/geldpolitik/> or <http://www.faz.net/aktuell/wirtschaft/oekonomen-aufruf-im-wortlaut-zur-europaeischen-bankenunion-11815081.html>.

there may have been a connection between religious and economic views.<sup>19</sup>

As an illustration, consider the Bible's parable of the prodigal son, in which a son returns home after years during which he wasted a fortune he had received from his family. The father welcomes the son and celebrates his return, which upsets his other son, who has always worked hard and saved his money. The father explains that "[. . .] it was appropriate to celebrate and be glad, for this, your brother, was dead, and is alive again. He was lost, and is found" (Luke 15:17-20). Catholics have traditionally been more loyal towards their families than towards governments and legal institutions (Arruñada, 2010). Like the prodigal son's father, German Catholics may be more lenient towards EMU member states that ran unsustainable deficits in the past. Group loyalty between German Catholics and Catholics abroad may reinforce this solidarity (Luttmer, 2001).

## 5 Conclusion

The euro crisis has produced a 'religious fault line' (Bowly, 2012) between Catholic countries on the one hand, and Protestant countries on the other hand. Cultural differences between different religious denominations are a possible explanation for the euro crisis, and may also have shaped how policy makers responded to it. Germany has traditionally been half Protestant, half Catholic, which raises the question if Catholics and Protestants differ in how they responded to the euro crisis within Germany, too. We show that these attitudes, indeed, differ between Protestants and Non-Protestants, thus offering a novel explanation for the great variation in policy makers' and the general population's responses to the euro crisis.

In this paper, we show that German Protestants continue to have different social values than German Catholics: Catholics are still more likely to consider tax fraud, which was frequently discussed in the media in relation to the euro crisis, as morally justifiable. According to survey data from the German SOEP, Protestants were less concerned about the fate of the joint currency than Non-Protestants in 2003, when Germany was still not able to meet the Maastricht Treaty's fiscal deficit criteria itself. By 2011, however, when the crisis was most severe, Protestants had become more concerned than Non-Protestants. We, furthermore, observe a negative association between euro concerns and subjective well-

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<sup>19</sup>In line with our argument, Ankenbrand (2013, 2014) describes the AfD as deeply rooted in Protestant traditions. In Ankenbrand (2013), he quotes economics professor Bernd Lucke, who initiated the *Plenum der Ökonomen*, a list of signatures opposing support for struggling EMU member states, and later became chairman of the AfD, as claiming that "economics [was] not a matter of faith" (Ökonomie ist keine Glaubensfrage). Even though, like most economists, he presents himself as an objective expert, Lucke's economic preferences may, however, have been shaped by his personal background and experiences. Chadi (2015) examines the empirical link between unhappiness among euro-skeptics and AfD election results in detail.

being in the whole population. In 2011, however, this negative association was stronger among Protestants than among Non-Protestants.

To obtain causal estimates of the effect of euro concerns on subjective wellbeing, we exploit exogenous variation in the timing of the interviews conducted for the SOEP in 2011. In the first-stage regressions, we find a positive correlation between news about the euro crisis during the days prior to the interviews and euro concerns across all religious denominations. Only among Protestants, however, is this correlation strong enough to justify the use of our instrument. In the second stage, we find a negative causal effect of euro concerns on subjective wellbeing among Protestants, but not among Non-Protestants. This effect among Protestants is statistically significant and of substantial magnitude.

Our findings are in line with Protestants being more sensitive towards moral hazard considerations. Long-term persistence of attitudes is, thus, not a thing of the past. Religious confession continues to shape our views of subjects like the euro, which, at first glance, have little relation to religion. While our work does not offer a new approach on how to address fiscal imbalances, it does, however, help to understand sensitivities during the euro crisis and suggests that such sensitivities may matter in other contexts, too.

## References

- ALESINA, A., O. BARBIERO, C. FAVERO, F. GIAVAZZI, AND M. PARADISI (2015): “Austerity in 2009-2013,” NBER Working Papers 20827, National Bureau of Economic Research, Inc.
- ANKENBRAND, H. (2013): “Der Protestant,” *Frankfurter Allgemeine Zeitung*, December 14, <http://www.faz.net/aktuell/wirtschaft/menschen-wirtschaft/bernd-lucke-der-protestant-12711334.html>.
- (2014): “Christliche Alternative für Deutschland,” *Frankfurter Allgemeine Zeitung*, March 10, <http://www.faz.net/aktuell/afd-kritisiert-rechte-von-schwulen-und-muslime-12837646.html>.
- ARRUÑADA, B. (2009): “Specialization and Rent-Seeking in Moral Enforcement: The Case of Confession,” *Journal for the Scientific Study of Religion*, 48(3), 443–461.
- (2010): “Protestants and Catholics: Similar Work Ethic, Different Social Ethic,” *Economic Journal*, 120(547), 890–918.
- BARRO, R. J., AND R. M. MCCLEARY (2005): “Which Countries Have State Religions?,” *The Quarterly Journal of Economics*, 120(4), 1331–1370.

- BASKARAN, T., AND Z. HESSAMI (2013): “Monetary Integration, Soft Budget Constraints, and the EMU Sovereign Debt Crises,” Working Paper 2013-03, Department of Economics, University of Konstanz.
- BECKER, S. O., AND L. WOESSMANN (2009): “Was Weber Wrong? A Human Capital Theory of Protestant Economic History,” *Quarterly Journal of Economics*, 124(2), 531–596.
- BERGER, H., AND J. DE HAAN (1999): “A State within the State? An Event Study on the Bundesbank (1948-1973),” *Scottish Journal of Political Economy, Scottish Economic Society*, 46(1), 17–39.
- BORN, B., G. MÜLLER, AND J. PFEIFER (2015): “Does austerity pay off?,” CEPR Discussion Papers 10425, C.E.P.R. Discussion Papers.
- BORNKAMM, K., AND G. EBELING (1982): *Martin Luther. Ausgewählte Schriften*, vol. 2. Insel, Frankfurt.
- BOWLBY, C. (2012): “The eurozone’s religious faultline,” *BBC News Magazine*, July 19, <http://www.bbc.com/news/magazine-18789154>.
- BULOW, J., AND K. ROGOFF (1989): “Sovereign Debt: Is to Forgive to Forget?,” *American Economic Review*, 79(1), 43–50.
- CANTONI, D. (2012): “Adopting a New Religion: the Case of Protestantism in 16th Century Germany,” *Economic Journal*, 122(560), 502–531.
- (2015): “The economic effects of the Protestant Reformation: testing the Weber hypothesis in the German Lands,” *Journal of the European Economic Association*, 13(4).
- CHADI, A. (2015): “Concerns about the Euro and Happiness in Germany during Times of Crisis,” Discussion Paper 3/2015, IAAEU Trier.
- CHEN, M. K. (2013): “The Effect of Language on Economic Behavior: Evidence from Savings Rates, Health Behaviors, and Retirement Assets,” *American Economic Review*, 103(2), 690–731.
- CONTI, G., AND S. PUDNEY (2011): “Survey design and the analysis of satisfaction,” *Review of Economics and Statistics*, 93(3), 1087–1093.
- DEATON, A. (2012): “The financial crisis and the well-being of Americans,” *Oxford Economic Papers*, 64(1), 1–26.



- DULLIEN, S., AND U. GUÉROT (2012): “The long shadow of ordoliberalism: Germany’s approach to the euro crisis,” *European Council on Foreign Relations Policy Brief*, 22.
- DUSTMANN, C., B. FITZENBERGER, U. SCHÖNBERG, AND A. SPITZ-OENER (2014): “From sick man of Europe to economic superstar: Germany’s resurgent economy,” *Journal of Economic Perspectives*, 28(1), 167–188.
- EHRMANN, M., AND P. TZAMOURANI (2012): “Memories of high inflation,” *European Journal of Political Economy*, 28(2), 174–191.
- EKELUND, R. B. J., R. F. HEBERT, AND R. D. TOLLISON (1989): “An Economic Model of the Medieval Church: Usury as a Form of Rent Seeking,” *Journal of Law, Economics and Organization*, 5(2), 307–31.
- FERRER-I CARBONELL, A., AND P. FRIJTERS (2004): “How Important is Methodology for the estimates of the determinants of Happiness?,” *Economic Journal*, 114(497), 641–659.
- FILISTRUCCHI, L., AND J. PRÜFER (2013): “Faithful Strategies : How Religion Shapes Nonprofit Management,” Discussion paper.
- FISCHER, S. (1990): “Rules versus discretion in monetary policy,” in *Handbook of Monetary Economics*, ed. by B. M. Friedman, and F. H. Hahn, vol. 2 of *Handbook of Monetary Economics*, Elsevier, chap. 21, pp. 1155–1184. Elsevier.
- FRATZSCHER, M. (2014): *Die Deutschland-Illusion*. Hanser Verlag.
- GIULIANO, P., AND A. SPILIMBERGO (2014): “Growing up in a Recession,” *Review of Economic Studies*, 81(2), 787–817.
- GLAESER, E. L., AND B. I. SACERDOTE (2008): “Education and Religion,” *Journal of Human Capital*, 2(2), 188–215.
- GOEBEL, J., C. KREKEL, T. TIEFENBACH, AND N. R. ZIEBARTH (2013): “Natural Disaster, Policy Action, and Mental Well-Being: The Case of Fukushima,” SOEPpapers on Multidisciplinary Panel Data Research 599, DIW Berlin, The German Socio-Economic Panel (SOEP).
- GRUBER, J. H. (2005): “Religious Market Structure, Religious Participation, and Outcomes: Is Religion Good for You?,” *B.E. Journal of Economic Analysis & Policy*, (1), 1–32.
- GUIISO, L., H. HERRERA, AND M. MORELLI (2014): “Cultural Differences and Institutional Integration,” Working paper, HEC Montreal.



- GUIISO, L., P. SAPIENZA, AND L. ZINGALES (2003): “People’s opium? Religion and economic attitudes,” *Journal of Monetary Economics*, 50(1), 225–282.
- (2006): “Does Culture Affect Economic Outcomes?,” *Journal of Economic Perspectives*, 20(2), 23–48.
- (2008): “Long Term Persistence,” NBER Working Papers 14278, National Bureau of Economic Research, Inc.
- HAYO, B., AND B. HOFMANN (2006): “Comparing monetary policy reaction functions: ECB versus Bundesbank,” *Empirical Economics*, 31(3), 645–662.
- HEINECK, G. (2001): “The Determinants of Church Attendance and Religious Human Capital in Germany: Evidence from Panel Data,” Discussion paper.
- IANNACCONI, L. R. (1998): “Introduction to the Economics of Religion,” *Journal of Economic Literature*, 36(3), 1465–1496.
- IANNACCONI, L. R., AND E. BERMAN (2008): “The Economics of Religion,” in *The New Palgrave Dictionary of Economics*, ed. by S. N. Durlauf, and L. E. Blume. 2nd Edition, Basingstoke: Palgrave Macmillan.
- IMBENS, G. W., AND J. D. ANGRIST (1994): “Identification and Estimation of Local Average Treatment Effects,” *Econometrica*, 62(2), 467–475.
- JANUS, A. L. (2010): “The influence of social desirability pressures on expressed immigration attitudes,” *Social Science Quarterly*, 91(4), 928–946.
- KYDLAND, F. E., AND E. C. PRESCOTT (1977): “Rules Rather Than Discretion: The Inconsistency of Optimal Plans,” *Journal of Political Economy*, 85(3), 473–91.
- LA PORTA, R., F. LOPEZ-DE SILANES, A. SHLEIFER, AND R. W. VISHNY (1997): “Trust in Large Organizations,” *American Economic Review P&P*, 87(2), 333–38.
- LUKE (15:17-20): *Bible*. World English Bible.
- LUNA-AROCAS, R., G. GUZMAN, I. QUINTANILLA, AND M. FARHANGMEHR (2001): “The Euro and European identity: The Spanish and Portuguese case,” *Journal of Economic Psychology*, 22(4), 441–460.
- LUTTMER, E. F. P. (2001): “Group loyalty and the taste for redistribution,” *Journal of political Economy*, 109(3), 500–528.
- MALMENDIER, U., AND S. NAGEL (2011): “Depression Babies: Do Macroeconomic Experiences Affect Risk Taking?,” *Quarterly Journal of Economics*, 126(1), 373–416.

- METCALFE, R., N. POWDTHAVEE, AND P. DOLAN (2011): “Destruction and Distress: Using a Quasi-Experiment to Show the Effects of the September 11 Attacks on Mental Well-Being in the United Kingdom,” *Economic Journal*, 121(550), F81–F103.
- MONTAGNOLI, A., AND M. MORO (2014): “Everybody Hurts: Banking Crises and Individual Wellbeing,” Working paper, Sheffield University.
- NUNN, N. (2009): “The Importance of History for Economic Development,” *Annual Review of Economics*, 1(1), 65–92.
- PONTICELLI, J., AND H.-J. VOTH (2011): “Austerity and Anarchy: Budget Cuts and Social Unrest in Europe, 1919-2008,” CEPR Discussion Papers 8513, C.E.P.R. Discussion Papers.
- POTRAFKE, N., AND M. REISCHMANN (2015): “Fiscal Transfers and Fiscal Sustainability,” *Journal of Money, Credit and Banking*, forthcoming.
- PRILUCK, J. (2015): “The Two Europes,” *Slate*, February 6, [http://www.slate.com/articles/business/moneybox/2015/02/greece\\_austerity\\_eurozone\\_leaders\\_won\\_t\\_back\\_off\\_because\\_of\\_the\\_vastly\\_different.html](http://www.slate.com/articles/business/moneybox/2015/02/greece_austerity_eurozone_leaders_won_t_back_off_because_of_the_vastly_different.html).
- RENNEBOOG, L., AND C. SPAENJERS (2012): “Religion, economic attitudes, and household finance,” *Oxford Economic Papers*, 64(1), 103–127.
- SCHÜLLER, S. (2012): “The Effects of 9/11 on Attitudes Toward Immigration and the Moderating Role of Education,” IZA Discussion Papers 7052, Institute for the Study of Labor (IZA).
- SOEP (2013): “Socio-Economic Panel (SOEP), Data for years 1984-2012,” Version 29, doi:10.5684/soep.v29.
- SPENKUCH, J. L., AND P. TILLMANN (2015): “Religion, Economics, and the Electoral Success of the Nazis,” mimeo, Northwestern University.
- STAIGER, D., AND J. H. STOCK (1997): “Instrumental Variables Regression with Weak Instruments,” *Econometrica*, 65(3), 557–586.
- STOCK, J. H., AND M. YOGO (2005): “Testing for Weak Instruments in Linear IV Regression,” in *Identification and Inference for Econometric Models: Essays in Honor of Thomas Rothenberg*, ed. by D. W. K. Andrews, and J. H. Stock. New York: Cambridge University Press.
- STULZ, R. M., AND R. WILLIAMSON (2003): “Culture, openness, and finance,” *Journal of Financial Economics*, 70(3), 313–349.

- TRAUNMÜLLER, R. (2009): “Religion und Sozialintegration,” *Berliner Journal für Soziologie*, 19(3), 435–468.
- (2010): “Moral Communities? Religion as a Source of Social Trust in a Multi-level Analysis of 97 German Regions,” *European Sociological Review*, pp. 1–18.
- ULLRICH, V. (1998): *Otto von Bismarck*. Rowohlt.
- VOIGTLÄNDER, N., AND H.-J. VOTH (2012): “Persecution Perpetuated: The Medieval Origins of Anti-Semitic Violence in Nazi Germany,” *Quarterly Journal of Economics*, 127(3), 1339–1392.
- WAGNER, G. G., J. R. FRICK, AND J. SCHUPP (2007): “The German Socio-Economic Panel Study (SOEP) – Scope, Evolution and Enhancements,” *Schmollers Jahrbuch : Journal of Applied Social Science Studies / Zeitschrift für Wirtschafts- und Sozialwissenschaften*, 127(1), 139–169.
- WAGNER, G. G., AND J.-P. SCHRAEPLER (2001): “Das Verhalten von Interviewern - Darstellung und ausgewählte Analysen am Beispiel des Interviewer-Panels des Sozio-oekonomischen Panels,” *Allgemeines Statistisches Archiv*, 85(1), 45–66.
- WEBER, M. (1904): “Die protestantische Ethik und der ‘Geist’ des Kapitalismus,” in *Gesammelte Aufsätze zur Religionssoziologie*. J.C.B. Mohr (Paul Siebeck), Tübingen.

Table A.1: EVS: DESCRIPTIVE STATISTICS.

| Variable                             | obs  | mean   | std. dev. | min | max | m Prot | m Cath |
|--------------------------------------|------|--------|-----------|-----|-----|--------|--------|
| Protestant                           | 2075 | 0.270  | 0.444     | 0   | 1   | 1      | 0      |
| Catholic                             | 2075 | 0.227  | 0.419     | 0   | 1   | 0      | 1      |
| Muslim                               | 2075 | 0.013  | 0.113     | 0   | 1   | 0      | 0      |
| other religion                       | 2075 | 0.024  | 0.152     | 0   | 1   | 0      | 0      |
| no religion                          | 2075 | 0.466  | 0.499     | 0   | 1   | 0      | 0      |
| EU: fear loss of social security     | 2026 | 7.164  | 2.719     | 1   | 10  | 7.078  | 7.047  |
| EU: fear loss of national culture    | 2039 | 5.749  | 2.912     | 1   | 10  | 5.973  | 6.330  |
| EU: fear that own country pays       | 2015 | 7.244  | 2.574     | 1   | 10  | 7.204  | 7.355  |
| EU: fear of job losses               | 2040 | 7.854  | 2.452     | 1   | 10  | 7.868  | 7.775  |
| justify tax fraud                    | 2060 | 1.966  | 1.628     | 1   | 10  | 1.930  | 2.209  |
| university                           | 2075 | 0.120  | 0.326     | 0   | 1   | 0.105  | 0.096  |
| apprenticeship, vocational education | 2075 | 0.573  | 0.495     | 0   | 1   | 0.601  | 0.601  |
| other educational degree             | 2075 | 0.189  | 0.392     | 0   | 1   | 0.173  | 0.187  |
| compulsory or no education           | 2075 | 0.111  | 0.314     | 0   | 1   | 0.116  | 0.113  |
| age                                  | 2051 | 49.734 | 16.584    | 18  | 92  | 51.863 | 49.884 |
| female                               | 2075 | 0.523  | 0.500     | 0   | 1   | 0.585  | 0.529  |

## A Supplementary tables

Table A.1 shows descriptive statistics for the respondents in the 2008 European Values Study, Table A.4 shows supplementary outputs that compare Protestants and Catholics only, where Catholics are the left-out baseline category.

Table A.2: SOEP—DETAILED DESCRIPTIVE STATISTICS.

| 2003                                       | Protestants | Non-Protestant | Catholic  |
|--|-------------|----------------|-----------|
| Subjective well-being                      | 7.1030      | 6.8575         | 7.0951    |
| Concerned about the euro                   | 0.1874      | 0.2350         | 0.2314    |
| Observations                               | 4117        | 7943           | 3387      |
| 2011                                       | Protestants | Non-Protestant | Catholic  |
| Subjective well-being                      | 6.8920      | 6.8204         | 6.9636    |
| Concerned about the euro                   | 0.2043      | 0.2130         | 0.2040    |
| Female                                     | 0.5568      | 0.4931         | 0.5163    |
| No migration background                    | 0.9073      | 0.7948         | 0.7816    |
| Direct migration background                | 0.0570      | 0.1373         | 0.1341    |
| Indirect migration background              | 0.0356      | 0.0679         | 0.0843    |
| Age  | 54.2969     | 51.0693        | 52.1545   |
| Nationality: German                        | 0.9831      | 0.8896         | 0.9014    |
| Nationality: Turkish                       | 0.0000      | 0.0298         | 0.0000    |
| Nationality: Italian                       | 0.0017      | 0.0200         | 0.0429    |
| Nationality: Greek                         | 0.0002      | 0.0043         | 0.0001    |
| Nationality: others                        | 0.0150      | 0.0563         | 0.0556    |
| Education: primary                         | 0.1449      | 0.1505         | 0.1769    |
| Education: secondary                       | 0.6560      | 0.6437         | 0.6449    |
| Education: tertiary                        | 0.1991      | 0.2059         | 0.1781    |
| Education years                            | 12.2390     | 12.1509        | 11.9573   |
| Employment: full-time                      | 0.3449      | 0.4340         | 0.4095    |
| Employment: regular part-time              | 0.1150      | 0.1069         | 0.1243    |
| Employment: Marginal, irregular part-t.    | 0.0525      | 0.0539         | 0.0545    |
| Employment: other forms (e.g., retraining) | 0.0188      | 0.0139         | 0.0144    |
| Employment: out of labor force             | 0.4688      | 0.3914         | 0.3973    |
| Registered as unemployed                   | 0.0364      | 0.0620         | 0.0311    |
| Retired                                    | 0.0597      | 0.0581         | 0.0458    |
| Self-employed                              | 0.3588      | 0.2642         | 0.2902    |
| Equalized real income                      | 1738.9030   | 1749.1240      | 1786.2507 |
| Owner of dwelling                          | 0.5560      | 0.4649         | 0.5637    |
| Dwelling: in good condition                | 0.6897      | 0.6938         | 0.7319    |
| Dwelling: some renovation needed           | 0.2853      | 0.2799         | 0.2497    |
| Dwelling: full renovation needed           | 0.0250      | 0.0263         | 0.0184    |
| Living area                                | 105.1393    | 98.0717        | 107.6911  |
| Number of persons in household             | 2.3319      | 2.3510         | 2.4714    |
| Person needing care in household           | 0.0477      | 0.0348         | 0.0454    |
| No children in household                   | 0.7877      | 0.7651         | 0.7540    |
| Family status: married                     | 0.5571      | 0.5541         | 0.5804    |

|  |         |         |         |
|--|---------|---------|---------|
| Family status: single                      | 0.2278  | 0.2465  | 0.2319  |
| Family status: divorced                    | 0.0846  | 0.1077  | 0.0790  |
| Family status: widowed                     | 0.1127  | 0.0689  | 0.0880  |
| Family status: married but separated       | 0.0179  | 0.0229  | 0.0207  |
| Partnership                                | 0.7267  | 0.7420  | 0.7433  |
| Doctor visits                              | 2.7289  | 2.4600  | 2.4518  |
| Disability                                 | 0.1494  | 0.1432  | 0.1403  |
| Hospital stay                              | 0.1419  | 0.1290  | 0.1231  |
| Recently married                           | 0.0124  | 0.0111  | 0.0107  |
| Recently moved together with partner       | 0.0192  | 0.0135  | 0.0139  |
| Recently divorced                          | 0.0096  | 0.0060  | 0.0052  |
| Recently separated from partner            | 0.0136  | 0.0172  | 0.0159  |
| Recently experienced death of partner      | 0.0056  | 0.0037  | 0.0046  |
| Recently had a child                       | 0.0201  | 0.0181  | 0.0152  |
| Extraversion                               | 4.7552  | 4.7149  | 4.6809  |
| Agreeableness                              | 5.4669  | 5.4157  | 5.4878  |
| Conscientiousness                          | 5.8215  | 5.8319  | 5.8517  |
| Neuroticism                                | 3.8936  | 3.8509  | 3.8673  |
| Openness                                   | 4.3940  | 4.3506  | 4.2995  |
| Year in the panel                          | 13.1116 | 13.6459 | 13.5415 |
| Oral interview with paper and pencil       | 0.1799  | 0.1958  | 0.2046  |
| Oral interview with computer assistance    | 0.2816  | 0.2433  | 0.2501  |
| Self-written with interviewer presence     | 0.0191  | 0.0246  | 0.0247  |
| Partly oral, partly self-written interview | 0.0315  | 0.0254  | 0.0222  |
| Self-written without interviewer presence  | 0.1728  | 0.2036  | 0.2136  |
| Self-written and sent via mail             | 0.3151  | 0.3073  | 0.2849  |
| Day of the interview: Monday               | 0.1785  | 0.1865  | 0.1726  |
| Day of the interview: Tuesday              | 0.1658  | 0.1670  | 0.1746  |
| Day of the interview: Wednesday            | 0.2040  | 0.1917  | 0.1761  |
| Day of the interview: Thursday             | 0.1706  | 0.1595  | 0.1711  |
| Day of the interview: Friday               | 0.1431  | 0.1370  | 0.1359  |
| Day of the interview: Saturday             | 0.0999  | 0.1046  | 0.1168  |
| Day of the interview: Sunday               | 0.0381  | 0.0537  | 0.0529  |
| Interview month: February                  | 0.3502  | 0.3232  | 0.3139  |
| Interview month: March                     | 0.3094  | 0.3317  | 0.3127  |
| Interview month: April                     | 0.1512  | 0.1614  | 0.1685  |
| Interview month: May                       | 0.0932  | 0.0861  | 0.0961  |
| Interview month: June                      | 0.0510  | 0.0519  | 0.0568  |
| Interview month: July                      | 0.0337  | 0.0334  | 0.0407  |
| Interview month: August                    | 0.0113  | 0.0125  | 0.0113  |
| Observations                               | 4272    | 8246    | 3426    |

Table A.3: MONTHLY DISTRIBUTION OF RELIGIOUS DENOMINATION.

|                           | Protestants | Non-Protestant | Catholic | Obs  |
|---------------------------|-------------|----------------|----------|------|
| Interview month: February | 0.3612      | 0.6388         | 0.2607   | 4169 |
| Interview month: March    | 0.321       | 0.679          | 0.2671   | 4140 |
| Interview month: April    | 0.3102      | 0.6898         | 0.3      | 1970 |
| Interview month: May      | 0.3918      | 0.6082         | 0.2952   | 1118 |
| Interview month: June     | 0.3254      | 0.6746         | 0.2938   | 633  |
| Interview month: July     | 0.3835      | 0.6165         | 0.2784   | 352  |
| Interview month: August   | 0.3456      | 0.6544         | 0.2059   | 136  |



Table A.4: ORDERED PROBIT ESTIMATES.

|                | EU-related fears         |                       |                      |                      |                      |
|----------------|--------------------------|-----------------------|----------------------|----------------------|----------------------|
|                | (1)<br>justify tax fraud | (2)<br>loss soc secur | (3)<br>loss nat cult | (4)<br>own ctry pays | (5)<br>loss of jobs  |
| protestant     | -0.233***<br>(0.071)     | -0.013<br>(0.063)     | -0.134**<br>(0.064)  | -0.071<br>(0.064)    | 0.033<br>(0.065)     |
| muslim         | -0.182<br>(0.223)        | 0.040<br>(0.189)      | -0.080<br>(0.151)    | -0.100<br>(0.195)    | -0.024<br>(0.227)    |
| other rel.     | -0.440**<br>(0.180)      | -0.179<br>(0.175)     | -0.337**<br>(0.168)  | -0.184<br>(0.158)    | -0.080<br>(0.159)    |
| no rel.        | -0.346***<br>(0.064)     | 0.161***<br>(0.060)   | -0.329***<br>(0.061) | -0.004<br>(0.060)    | 0.107*<br>(0.060)    |
| university     | -0.102<br>(0.111)        | -0.369***<br>(0.102)  | -0.350***<br>(0.095) | -0.298***<br>(0.093) | -0.220**<br>(0.100)  |
| apprenticeship | -0.070<br>(0.088)        | 0.119<br>(0.078)      | -0.024<br>(0.075)    | 0.176**<br>(0.078)   | 0.277***<br>(0.080)  |
| other educ     | -0.008<br>(0.103)        | -0.048<br>(0.089)     | -0.160*<br>(0.086)   | -0.042<br>(0.091)    | 0.015<br>(0.091)     |
| age/10         | -0.125***<br>(0.016)     | 0.016<br>(0.015)      | 0.017<br>(0.014)     | 0.030**<br>(0.015)   | -0.057***<br>(0.016) |
| female         | -0.205<br>(0.053)        | 0.103**<br>(0.047)    | -0.042<br>(0.046)    | -0.015<br>(0.047)    | 0.057<br>(0.048)     |
| pseudo-R2      | 0.019                    | 0.008                 | 0.007                | 0.006                | 0.011                |
| observations   | 2036                     | 2002                  | 2015                 | 1991                 | 2017                 |

Notes: Robust standard errors are in parentheses; \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ .

Table A.5: FULL OUTPUT FIRST STAGE.

| Variable                                 | Coefficient | Std. Err. |
|--|-------------|-----------|
| News                                     | 0.154***    | (0.037)   |
| Female                                   | -0.035**    | (0.016)   |
| Direct migration background              | -0.088**    | (0.035)   |
| Indirect migration background            | -0.003      | (0.034)   |
| Age                                      | 0.024       | (0.015)   |
| Age squared                              | -0.000      | (0.000)   |
| Age cube                                 | 0.000       | (0.000)   |
| German nationality                       | 0.016       | (0.051)   |
| Turkish nationality                      | -0.004      | (0.090)   |
| Italian nationality                      | -0.074      | (0.113)   |
| Greek nationality                        | 0.211       | (0.157)   |
| Secondary education                      | 0.028       | (0.034)   |
| Tertiary education                       | 0.066       | (0.044)   |
| Education years                          | -0.126***   | (0.035)   |
| Education years squared                  | 0.003***    | (0.001)   |
| Full-time employment                     | 0.097*      | (0.050)   |
| Regular part-time employment             | 0.099*      | (0.052)   |
| Marginal, irregular part-time employment | 0.098*      | (0.054)   |
| Out of labor force                       | 0.077*      | (0.045)   |
| Registered as unemployed                 | 0.013       | (0.045)   |
| Self-employed                            | 0.015       | (0.031)   |
| Retired                                  | 0.032       | (0.038)   |
| Log equalized real income                | -0.111***   | (0.019)   |
| Owner of dwelling                        | -0.043**    | (0.020)   |
| Dwelling needs some renovation           | -0.002      | (0.016)   |
| Dwelling needs full renovation           | -0.026      | (0.048)   |
| Living area                              | 0.001**     | (0.001)   |
| Living area squared                      | -0.000*     | (0.000)   |
| Number of persons in household           | 0.010       | (0.010)   |
| Person needing care in household         | -0.083**    | (0.038)   |
| No children in household                 | 0.055**     | (0.023)   |
| Married                                  | -0.009      | (0.028)   |
| Divorced                                 | 0.042       | (0.037)   |
| Widowed                                  | 0.044       | (0.052)   |
| Separated                                | -0.101**    | (0.049)   |
| Partnership                              | 0.032       | (0.025)   |
| Number of doctor visits                  | 0.005**     | (0.002)   |
| Disability                               | 0.043*      | (0.026)   |

|  |         |         |
|--|---------|---------|
| Hospital stay                                | 0.006   | (0.025) |
| Recently married                             | 0.053   | (0.059) |
| Recently moved together with partner         | -0.033  | (0.048) |
| Recently divorced                            | 0.137   | (0.086) |
| Recently separated from partner              | 0.111*  | (0.057) |
| Recently experienced death of partner        | 0.184   | (0.174) |
| Recently had a child                         | -0.054  | (0.045) |
| Self-written questionnaire and sent via mail | 0.021   | (0.029) |
| Partly oral, partly self-written interview   | -0.064* | (0.035) |
| Self-written without interviewer presence    | 0.017   | (0.028) |
| Protestant                                   | 0.028   | (0.020) |
| Other religion                               | 0.026   | (0.046) |
| No denomination                              | -0.006  | (0.021) |
| Federal state dummies                        |         | yes     |
| Years in panel dummies                       |         | yes     |
| Observations                                 |         | 6436    |
| $R^2$  |         | 0.121   |

*Notes:* Dependent variable is being very concerned about the euro. Further controls includes variables for federal state (15) and year in the panel (26). Robust standard errors are in parentheses. Survey weights are used. SOEP data from 2011 and LexisNexis data are used. \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ .

Table A.6: REDUCED FORM AND FIRST STAGE–FULL SAMPLE.

|   | (1)         | (2)             | (3)       | (4)         |
|---|-------------|-----------------|-----------|-------------|
|   | Protestants | Non-Protestants | Catholics | full sample |
| Reduced form estimates: subjective wellbeing and news |             |                 |           |             |
| News  | -0.292*     | 0.105           | 0.054     | -0.048      |
|   | (0.165)     | (0.112)         | (0.153)   | (0.095)     |
| Controls  | yes         | yes             | yes       | yes         |
| Observations  | 4272        | 8246            | 3426      | 12518       |
| R <sup>2</sup>  | 0.2014      | 0.1948          | 0.2044    | 0.1818      |
| First stage: concerns about the euro and news         |             |                 |           |             |
| News  | 0.150***    | 0.074**         | 0.083*    | 0.101***    |
|   | (0.040)     | (0.032)         | (0.049)   | (0.026)     |
| Controls  | yes         | yes             | yes       | yes         |
| Observations  | 4272        | 8246            | 3426      | 12518       |
| R <sup>2</sup>  | 0.1422      | 0.0774          | 0.1212    | 0.0783      |
| F-Test on instrument                                  | 13.77       | 5.42            | 2.89      | 15.45       |

*Notes:* Dependent variable in upper panel is life satisfaction on a 0 to 10 scale. Dependent variable in lower panel is being very concerned about the euro. Control variables are same as in Table 2, except for Big Five personality measures, which are not included. Robust standard errors are in parentheses. \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ .

Table A.7: SECOND STAGE–FULL SAMPLE.

|                | (1)                | (2)       | (3)             | (4)       | (5)       | (6)       | (7)               | (8)       |
|----------------|--------------------|-----------|-----------------|-----------|-----------|-----------|-------------------|-----------|
|                | Protestants        |           | Non-Protestants |           | Catholics |           | all denominations |           |
|                | IV                 | OLS       | IV              | OLS       | IV        | OLS       | IV                | OLS       |
|                | All survey methods |           |                 |           |           |           |                   |           |
| Euro concerns  | -1.944*            | -0.480*** | 1.400           | -0.263*** | 0.647     | -0.295*** | -0.476            | -0.337*** |
|                | (1.088)            | (0.101)   | (1.647)         | (0.067)   | (1.891)   | (0.100)   | (0.923)           | (0.057)   |
| Controls       | yes                | yes       | yes             | yes       | yes       | yes       | yes               | yes       |
| Observations   | 4272               | 4272      | 8246            | 8246      | 3426      | 3426      | 12518             | 12518     |
| R <sup>2</sup> | 0.1147             | 0.2104    | 0.0583          | 0.1982    | 0.1641    | 0.2087    | 12.62             | 0.1874    |

*Notes:* Dependent variable is life satisfaction on a 0 to 10 scale. Control variables are same as in Table 2, except for Big Five personality measures, which are not included. Robust standard errors are in parentheses.

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

Table A.8: FULL OUTPUT SECOND STAGE.

| Variable                                 | Coefficient | Std. Err. |
|--|-------------|-----------|
| Concerned about the euro                 | -1.887**    | (0.891)   |
| Female                                   | -0.028      | (0.077)   |
| Direct migration background              | -0.099      | (0.186)   |
| Indirect migration background            | 0.096       | (0.136)   |
| Age                                      | -0.028      | (0.069)   |
| Age squared                              | -0.000      | (0.001)   |
| Age cube                                 | 0.000       | (0.000)   |
| German nationality                       | -0.018      | (0.258)   |
| Turkish nationality                      | 0.489       | (0.419)   |
| Italian nationality                      | 0.083       | (0.466)   |
| Greek nationality                        | 2.127*      | (1.139)   |
| Secondary education                      | 0.078       | (0.132)   |
| Tertiary education                       | 0.449**     | (0.193)   |
| Education years                          | 0.027       | (0.176)   |
| Education years squared                  | -0.003      | (0.006)   |
| Full-time employment                     | -0.060      | (0.240)   |
| Regular part-time employment             | 0.135       | (0.254)   |
| Marginal, irregular part-time employment | -0.058      | (0.264)   |
| Out of labor force                       | 0.116       | (0.251)   |
| Registered as unemployed                 | -0.732***   | (0.206)   |
| Self-employed                            | 0.091       | (0.125)   |
| Retired                                  | 0.172       | (0.180)   |
| Log equalized real income                | 0.338**     | (0.138)   |
| Owner of dwelling                        | -0.097      | (0.092)   |
| Dwelling needs some renovation           | -0.434***   | (0.070)   |
| Dwelling needs full renovation           | -0.818***   | (0.226)   |
| Living area                              | 0.004       | (0.003)   |
| Living area squared                      | -0.000      | (0.000)   |
| Number of persons in household           | 0.044       | (0.042)   |
| Person needing care in household         | -0.804***   | (0.192)   |
| No children in household                 | 0.234*      | (0.120)   |
| Married                                  | 0.183       | (0.121)   |
| Divorced                                 | 0.178       | (0.170)   |
| Widowed                                  | 0.498**     | (0.222)   |
| Separated                                | 0.302       | (0.259)   |
| Partnership                              | 0.610***    | (0.113)   |
| Number of doctor visits                  | -0.061***   | (0.011)   |
| Disability                               | -0.114      | (0.117)   |

|  |          |         |
|--|----------|---------|
| Hospital stay                                | -0.245** | (0.112) |
| Recently married                             | -0.226   | (0.321) |
| Recently moved together with partner         | -0.008   | (0.192) |
| Recently divorced                            | 0.717**  | (0.362) |
| Recently separated from partner              | -0.138   | (0.281) |
| Recently experienced death of partner        | -2.116*  | (1.082) |
| Recently had a child                         | 0.570*** | (0.175) |
| Self-written questionnaire and sent via mail | -0.069   | (0.127) |
| Partly oral, partly self-written interview   | 0.057    | (0.164) |
| Self-written without interviewer presence    | -0.090   | (0.121) |
| Protestant                                   | -0.096   | (0.089) |
| Other religion                               | -0.532** | (0.232) |
| No denomination                              | -0.190   | (0.096) |
| Federal state dummies                        |          | yes     |
| Years in panel dummies                       |          | yes     |
| Observations                                 |          | 6436    |
| $R^2$  |          | 0.110   |

*Notes:* Dependent variable is life satisfaction on a 0 to 10 scale. Further controls includes variables for federal state (15) and year in the panel (26). Robust standard errors are in parentheses. Survey weights are used. SOEP data from 2011 and *LexisNexis* data are used. \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ .



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