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Abstract

Few studies in the social sciences have spurred more controversy than Max Weber's *The Protestant Ethic and the Spirit of Capitalism*. At the core of Weber's theory lies a connection between Protestantism and attitudes toward work. Using micro-data from contemporary Germany, this paper investigates the impact of Protestantism on economic outcomes and whether any such connection still exists. To break the endogeneity in religious affiliation the paper exploits the fact that the geographic distribution of Catholics and Protestants is an artifact of a provision in the Peace of Augsburg in 1555. Reduced form and instrumental variable estimates indicate that, even today, Protestantism induces individuals to work longer hours, and leads thereby to higher earnings. Institutional factors or differences in human capital acquisition cannot account for this effect. Instead, the data point to an explanation based on individual values akin to a Protestant Ethic.

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I. Introduction

Throughout most of the history of the Western world, working hard was considered to be a curse rather than a virtue (Lipset 1992). Classical Greek and Roman societies regarded labor as degrading. Free men were to engage in the arts, trade, or warfare (Rose 1985). Medieval Christian scholars followed the ancient Hebrews in viewing work as God's punishment; and in condemning the accumulation of wealth for reasons other than charity the Catholic Church went even beyond Greek and Roman contempt (Tilgher 1930, Rose 1985).

In *The Protestant Ethic and the Spirit of Capitalism* Max Weber (1904/05) contended that Protestantism, in particular Calvinism, promoted a new attitude emphasizing diligence, thrift, and a person's calling. The Protestant Ethic, Weber famously argued, was the decisive factor in the emergence of capitalism.[1]

There has been controversy about the impact of Protestantism ever since the publication of Weber's essays. Critics doubt his reading of Calvinist and Lutheran teachings, and argue that the rise of capitalism occurred independently of the Reformation, or even spurred the latter (e.g., Sombart 1913, Brentano 1916, Tawney 1926, Samuelsson 1961). However, the positive correlation between nations' wealth and Protestantism alluded to by Weber can still be found in recent data. Figure 1 illustrates this point. It plots GDP per capita against the share of Protestants for majoritarian Christian countries.

Yet, even ignoring institutional factors and other sources of omitted variables bias, there may not necessarily exist a causal link between Protestantism and economic well-being. Economic theory predicts that more successful individuals, i.e. those with the highest opportunity cost of time, select "less costly" religions, or choose to participate less intensely (cf.

[1] The exact content of Weber's claim is still disputed. It is uncontroversial, however, that Weber posited a difference between Catholic and Protestant, especially Calvinist, doctrines with a wide-reaching impact on economic outcomes.

Azzi and Ehrenberg 1975, Iannaccone 1992). Therefore, denominational choices are likely endogenous, and the observed correlation could be entirely spurious.[2]

Using micro-data from contemporary Germany this paper investigates the causal effect of Protestantism. In several ways, Germany is ideally suited for such an analysis. There exist only two major religious blocks, namely Catholics and Protestants.[3] Each comprises approximately 35-37% of the population, while atheists account for c. 19% (Barrett et al. 2001).[4] Moreover, the German population is relatively homogenous, and institutional differences within Germany are minor compared to those in a cross-country setting.

As predicted by theory, the raw data suggest that the economically most successful are also most likely to select out of religion. Therefore, ordinary least squares estimates show only a modest correlation between Protestantism and proxies of individuals' economic success, but are likely downward biased.

To break the endogeneity in religious affiliation this paper exploits the fact that the geographic distribution of Catholics and Protestants can be traced back to the Reformation period, in particular the Peace of Augsburg in 1555. Ending more than two decades of religious conflict, the peace treaty established the *ius reformandi*. According to the principle *cuius regio, eius religio* ("whose realm, his religion") the religion of a territorial lord became the official religion in his state and, therefore, the religion of *all* people living within its confines. While the Peace of Augsburg secured the unity of religion within individual states, it led to religious

[2] Heaton (2006), for instance, casts doubt on a crime-reducing effect of religiosity (cf. Freeman 1986, among others).
[3] In contrast to the US, there are only a few Protestant denominations in Germany. Moreover, the Lutheran, Reformed and United state churches are united in the *Evangelical Church in Germany*. Its member churches share full pulpit and altar fellowship, and individual members usually self-identify only as "Protestant."
[4] The remaining 8-10% are mainly, but not exclusively, accounted for by Muslims. For simplicity this paper refers to individuals not affiliated with any denomination as atheists, recognizing that the former are a superset of the latter.

fragmentation of the German Lands, which at this time consisted of more than a thousand independent territories.[5]

Figure 2A depicts the religious situation as it developed after the Peace of Augsburg, and Figure 2B shows the geographic distribution of Catholics and Protestants within the boundaries of modern day Germany. Evidently the distribution today still resembles that at the beginning of the 17th century. This is also borne out in the data. Even today, individuals living in "historically Protestant" areas are much more likely to self-identify as Protestant than residents of "historically Catholic" regions.[6]

Although both sets of counties appear broadly similar in terms of observable aggregate characteristics, reduced form estimates reveal important micro-level differences. Compared to residents of historically Catholic regions, individuals living in historically Protestant areas work approximately one hour more per week, have slightly higher incomes, but do not earn higher wages. Institutional features or other observable county characteristics cannot account for the observed differences. Hence, the reduced form correlations point to a direct effect of Protestantism on hours worked and earnings.

This is explored further using princes' religion in the aftermath of the Peace of Augsburg as an instrumental variable (IV) for whether individuals today self-identify as Protestant. For territories' official religion in the beginning of the 17th century to be a valid instrument for that of contemporary Germans living in the respective areas, it must be the case that princes' religion are uncorrelated with unobserved factors determining economic outcomes today. This assumption is not directly testable. Historians, however, have analyzed princes' decisions in

[5] Not until the Peace of Westphalia in 1648 were subjects formally free to choose their own religion.
[6] An important exception is Eastern Germany, where most people self-identify as atheist. In counties where neither Catholics nor Protestants constitute the absolute majority it is usually the case that a relative majority identifies with the territory's official religion before the Thirty Years' War.

great detail and isolated two main factors, both of which are plausibly uncorrelated with the determinants of economic success today (see, for instance, Lutz 1997, and Dixon 2002): Most rulers were deeply religious and not only concerned about their own salvation, but also that of their subjects. Thus, their religious conscience often dictated a particular choice. Moreover, politics of the day, such as existing feuds or alliances, played an important role (Scribner and Dixon 2003). The fact that states' official religion often changed with successive rulers highlights the importance of idiosyncratic factors.[7, 8]

The preceding arguments suggest that territories' official religion in the aftermath of 1555 may indeed satisfy the exogeneity assumption required for a valid instrument. If one accepts this assumption, then instrumental variable estimates are consistent and have a causal interpretation. Taking the two-stage least squares point estimates at face value, Protestantism induces individuals to work approximately 3.5–4.5 hours (or one third of a standard deviation) more per week, thereby raising earnings by twelve percent. These point estimates are often statistically significant, or marginally so, and generally robust to varying the set of covariates as well as to the inclusion of state fixed effects.[9] Again, there is no indication of a positive effect of Protestantism on wages.

Regarding the mechanism through which the effect of Protestantism operates, the available evidence suggests a values-based explanation along the lines of a Protestant Ethic. Not only are Protestants significantly more likely to be self-employed, and choose jobs with a contractual

[7] For instance, Calvinist princes often sent their offspring to Jesuit schools, which were of superior quality. Having been educated by devout Catholics many of these children later reinstated Catholicism as the official religion in their state (Zeeden 1998).

[8] In independent research Cantoni (2010) also recognizes that the Peace of Augsburg introduced geographic variation in the distribution of religious affiliation. Using historical data on 272 cities, he finds that although Protestant cities were significantly smaller than their Catholic counterparts in 1300, by 1400 the difference had largely disappeared. He also argues that Catholic and Protestant cities did not diverge after the Peace of Augsburg.

[9] By including state fixed effects the impact of Protestantism is estimated using only within state variation in economic outcomes and rulers' religion. Since counties within a state are, due to their geographic proximity, likely more similar on unobservables, including state fixed effects mitigates this potential source of bias.

obligation to work longer hours, but a single proxy for an individual's work ethic can account for most of the estimated effects of Protestantism. Competing explanations, such as a human capital theory of Protestantism (Becker and Wößmann 2009), i.e. that Protestantism induces individuals to invest more in education, are not supported by the data. If the causal effect of Protestantism operated through human capital investments, then one would expect denominational differences in wages. This, however, is not the case.

In recent years economists have regained interest in the macro- and micro-effects of religion (e.g., Barro and McCleary 2003, 2006). Therefore, the analysis presented in this paper can build upon a sizeable literature investigating the link between religion and individual economic outcomes (see Iannaccone 1998, or Lehrer 2009 for reviews).[10] Despite the size of this literature questions of causality have so far remained mostly unanswered.

One notable exception are Gruber and Hungerman (2008), who show that declines in religious participation caused by increased secular competition are closely associated with increases in drinking and drug usage. In a similar vein, Gruber (2005) provides evidence that among Americans higher religious market density leads to higher levels of religious participation and improved outcomes, such as levels of education, income, and marital stability.

Beyond demonstrating a causal effect of Protestantism on contemporary economic outcomes, this paper contributes to a large literature testing Weber's theory about the impact of Protestantism on economic development using aggregate historical data. While Delacroix and Nielsen (2001) and Cantoni (2010) reject Weber's claim, Becker and Wößmann (2009) show convincingly that Protestantism was associated with greater affluence in late nineteenth-century

[10] There also exists a large literature focusing on religious market structure and competition. See, for instance, Ekelund et al. (2006), Barro and McCleary (2005), Finke and Stark (2005), and the studies cited in Iannaccone (1998).

Prussia. They argue, however, that the effect of Protestantism operates through the acquisition of human capital, i.e. literacy, as opposed to a Protestant work ethic.[11]

In an addendum, Becker and Wößmann (2009) also correlate Protestantism with labor income in present day Germany; and claim that religious differences in education can fully account for the 5% earnings gap in the raw data. Since the instrument used in the historical part of their analysis (as well as by Cantoni 2010), i.e. distance to the city of Wittenberg where the Reformation movement originated, does not induce exogenous variation in the religious affiliation of Germans today, their "contemporary analysis of the association between Protestantism and earnings […] stays purely descriptive" (Becker and Wößmann 2009, p. 578). By contrast, this paper attempts to estimate the causal impact of Protestantism. Moreover, Becker and Wößmann (2009) do not explore whether higher earnings of Protestants are due to an increase in wages, as predicted by a human capital theory, or to longer working hours, which, given the lack of wage differences, would be indicative of a Protestant work ethic.

To the extent that religion shapes customs and traditions this paper also fits into a growing literature on the importance of social norms for various economic outcomes (for theoretical analyses see Akerlof and Kranton 2000, Bernheim 1994, or Austen-Smith and Fryer 2005). Fernandez (2007), for instance, shows that tradition influences women's labor supply and fertility decisions; and Tabellini (2010) argues that cultural heritage affects economic development. Intimately related to the results of the present analysis is the finding by Guiso et al.

[11] Although Luther taught that every believer should be able to read the bible, historians cast doubt on the immediate effectiveness of the Reformation in promoting literacy. Based on visitation protocols, i.e. records from official investigations of conditions in the parishes, Strauss (1978, 1999) concludes that the Reformation did not achieve its goals.

(2003) and Arruñada (2010) that Christian religions, especially Protestantism, are closely associated with attitudes conducive to economic growth.[12]

More generally, by demonstrating the long-lasting impact of the princely Reformation this paper adds to the nascent literature on persistent economic effects of historical events (e.g., Dell 2010, Nunn 2008, 2010, and Nunn and Quian 2010, among others).

The remainder of the paper proceeds as follows. Section II provides a brief overview of the religious landscape in Germany and its historic determinants. Section III describes and summarizes the data, followed by the main results presented in Section IV. Section V interprets the results through the lens of economics, and discusses different mechanisms through which the effect of Protestantism might operate. Section VI concludes. A Technical Appendix formalizing the intuition provided in the main text, and a Data Appendix with the precise definitions and sources of all variables used in the analysis are also provided.

II. Germany's Religious Landscape and its Historic Determinants

As Figure 2B demonstrates, the religious landscape in contemporary Germany is far from homogenous. With the exception of East Germany, where atheists constitute the overwhelming majority (due to half a century of Communist rule), the population in most counties adheres predominantly to either Catholicism or Protestantism. This section briefly reviews the historic causes for this pattern, which date back to the Reformation period.[13]

At the beginning of the sixteenth century the German Lands were fragmented into more than a thousand independent (secular and ecclesiastical) territories and free Imperial Cities. Although

[12] Arruñada (2010), however, does not find differences in work related values of self-identified Catholics and Protestants.

[13] The following summary draws heavily on historical accounts by Lutz (1997), Dixon (2002), Scribner and Dixon (2003), as well as Nowak (1995).

formally governed by an emperor, political power within the Holy Roman Empire lay for the most part with its territorial lords.

Despite widespread discontent about matters of church organization and abuses of power by the clergy, the religious monopoly of the Roman Catholic Church remained essentially unchallenged until the 'Luther affair' starting in 1517.[14] What those in power initially perceived as a dispute among clergymen quickly spread to the urban (and later rural) laity and became a mass movement. Notwithstanding Luther's excommunication in 1521 and the Edict of Worms, in which Emperor Charles V outlawed Luther as well as the reading and the possession of Luther's writings, popular support for the Reformation remained strong until the Peasant War in 1525.

After the Diet of Speyer in 1526 the German princes assumed leadership of the Reformation movement. The Diet instituted that until a synod could settle the religious dispute, territorial lords should proceed in matters of faith as they saw fit under the Word of God and the laws of the Empire. Princes who had privately converted to Lutheranism took this as an opportunity to proceed with church reform in their state. As a devout Catholic, Emperor Charles V, however, was determined to defend the (old) Church. Yet, his attempts to undo the Reformation and enforce the Edict of Worms led only to the Schmalkaldic War.

Ending more than two decades of religious conflict, the Peace of Augsburg in 1555 established princes' constitutional right to introduce the Lutheran faith in their state (*ius reformandi*). According to the principle *cuius regio, eius religio* ("whose realm, his religion"),

[14] Martin Luther was by no means the first to voice discontent about the state of the Catholic Church. According to Dixon (2002, p. 18), "In the final decades of the fifteenth century the state of the Church had become a matter of great urgency." Being deeply concerned about his own salvation and the spiritual welfare of parishioners, Luther's initial intention was simply to alert the archbishop of Mainz to the abuse of the indulgence trade—not to cause a schism of the Church. However, Luther's doctrine of salvation through faith alone (*sola fide*) "challenged the basis of the Church as it then was" (Scribner and Dixon 2003, p. 14), which made Luther a heretic in the eye of the papacy. Only after his excommunication in 1521 did Luther ultimately break with the Catholic Church.

the religion of a lord became the official faith in his territory and, therefore, the religion of *all* people living within its confines.[15] Only ecclesiastical rulers were not covered by the *ius reformandi* (*reservatum ecclesiasticum*). A (Catholic) bishop or archbishop would lose his office and the possessions tied to it upon conversion to another faith. Ordinary subjects refusing to convert were, conditional on selling all property, granted the right to emigrate (*ius emigrandi*). The overwhelming majority of subjects, however, were serfs who could not afford to pay for their own freedom.

Only about 10% of the population ever showed a lasting interest in the ideas of the Reformation, but as much as 80% adhered to a Protestant religion at the end of the sixteenth century (Scribner and Dixon 2003). Therefore, most conversions must have occurred involuntarily. There exists, indeed, ample evidence that the *ius reformandi* was often strictly enforced until the beginning of the seventeenth century.[16] Even residents of Imperial Cities—although formally free—were often forced to adopt a particular faith. In these towns political power lay in the hands of local elites who would virtually impose the Reformation (Dixon 2002).

Rulers' choices of religion depended on multiple factors. Most lords were deeply religious and not only concerned about their own salvation but also about that of their subjects (Dixon 2002). Moreover, political considerations, such as ties between noble families, and the formation of alliances with or against the Catholic emperor, contributed to the decision (see, for instance, Lutz 1997). On one hand, any converted territory or Imperial City had to fear losing the Emperor's support or drawing hostility from neighboring states. On the other hand, rulers also stood to gain from introducing the Reformation, as it allowed them to take possession of church

[15] In contrast to the Lutheran faith (*Confessio Augustana*), neither Calvinism nor Anabaptism was protected under the Peace of Augsburg. Nevertheless, a non-negligible number of territories underwent a Second Reformation, in which Calvinism became the official religion.

[16] For instance, 'heretics', i.e. those who did not adhere to the official state religion, faced the death penalty in the Duchy of Upper Saxony (Lutz 1997).

property as well as assert their independence.[17] The fact that territories' official religion often changed more than once, especially when a new generation of princes took reign toward the end of the sixteenth century, suggests that idiosyncratic factors also played an important role.[18]

Historians refer to the period from the Peace of Augsburg to the Peace of Westphalia in 1648 as the Age of Confessionalization.[19] It is during this time and through the process of princely reformation that states developed religious identities, and that the geographic distribution of Protestants and Catholics was determined (Eyck 1998).

Although individuals were formally free to choose their own faith after 1648, most territories of the Holy Roman Empire remained religiously uniform until the *Reichsdeputations-hauptschluss* in 1803. This piece of legislation enacted the secularization of ecclesiastical territories and the mediatization of small secular principalities. That is, ecclesiastical territories, Imperial Cities, and other small entities were annexed by neighboring states, thereby reducing the number of independent territories from over a thousand to slightly more than thirty states and forty-eight Imperial Cities (Nowak 1995). Due to the *Reichsdeputationshauptschluss*, Protestants and Catholics have lived in religiously "mixed" states for at least two hundred years.

On a local level, however, most areas remained religiously homogenous until the mass migrations associated with Word War II. In 1939, for instance, Protestants or Catholics

[17] Formally a reformed lord was head of the Protestant church in his state. Of course, this did not apply to Catholic rulers, who nevertheless often behaved "like popes in their lands" (Dixon 2002, p. 117).
[18] Testing the *reservatum ecclesiasticum* Archbishop Gebhard Truchseß von Waldburg, for instance, converted to the Lutheran faith in order to be allowed to marry a Protestant canoness. He thereby started the Cologne War (1582/83).
[19] Ending the Thirty Years' War, the Peace of Westphalia (1648) also ended princes' right to determine the religion of their subjects (although the *ius reformandi* remained formally in place). A territory's official Church was guaranteed the right to publicly celebrate mass etc. (*exercitium publicum religionis*), but individuals were allowed to choose and privately practice another faith (*devotio domestica*). In contrast to the Peace of Augsburg, the Peace of Westphalia did not only protect the Catholic and Lutheran denominations, but also Calvinists. Regarding disputes, the peace treaty stipulated the 'normal year' 1624. That is, territories should remain with the side that controlled them in January 1624.

respectively comprised more than 90% of the population in each of 247 counties.[20] By 1946 this number had dropped to 82 (Nowak 1995). Nevertheless, as Figures 2A and 2B illustrate, the geographic distribution of Catholics and Protestants today can still be traced back to the religion of territorial lords during the Age of Confessionalization.

III. Data Sources and Summary Statistics

In creating a mapping between present-day counties and the religion of the princes who reigned over the corresponding areas in the aftermath of the Peace of Augsburg this paper relies on several historical accounts. In particular the regional histories by Schindling and Ziegler (1992a, 1992b, 1993a, 1993b, 1995, 1996) contain the most detailed available information on the territories of the Holy Roman Empire for the period from 1500 to 1650.

The mapping created with this information is based on the religious situation around 1624—the 'normal year' set in the Peace of Westphalia.[21] Although there existed notable differences between and within different reformed faiths, as a whole the teachings of Lutherans, Calvinists, and Zwinglians were much closer to each other than to the doctrines of the Catholic Church (Dixon 2002). Moreover, most Protestant denominations today are united in the *Evangelical Church in Germany*.[22] Therefore, the mapping abstracts from differences between reformed denominations, and differentiates only between Protestant and Catholic territories.

[20] At this time the Third Reich consisted of almost 900 counties.

[21] Since territories' official religion was not constant in the aftermath of the Peace of Augsburg, there exists the possibility that the results depend on the choice of base year. To rule this out, a second mapping based on the situation directly after the Peace of Augsburg in 1555 has been created. As Table A.1 shows, both mappings are fairly similar. Not surprisingly the situation in 1624 is a slightly better predictor of the geographic distribution of Protestants and Catholics today.

[22] The German use of the term "evangelical" (*evangelisch*) is very different from that in English. In particular, it does not share the connotation of a 'high regard for biblical authority', but simply refers to the Protestant faith in general.

Only in a few instances does the border of a county or county equivalent today correspond exactly to the border of some state at the beginning of the seventeenth century. Whenever Catholic and Protestant princes reigned over different parts of a county's area, or whenever that area encompassed an Imperial City or an ecclesiastical territory, the religion assigned to this county is the likely religion of the majority of subjects. Since population estimates for the period are often not available, relative populations are gauged by comparing the size of the areas in question (assuming equal densities). In cases in which this procedure yields ambiguous results, the respective counties are classified as neither "historically Protestant" nor "historically Catholic", but as "mixed".[23] The Data Appendix provides additional detail regarding the construction of the mapping.[24]

Information on counties' institutional features and infrastructure today, such as number of schools and colleges, sectoral composition of the workforce, number of firms, etc., is taken from *Statistik regional 2007*. *Statistik regional* is an annual publication of the German Federal Statistical Office and the statistical offices of the Länder containing data on various characteristics of administrative units in Germany.

Table 1A displays summary statistics for observable county characteristics. While counties classified as mixed are more densely settled and feature more industry, historically Protestant counties do not appear to systematically outperform historically Catholic ones.[25, 26]

[23] This is the case for 53 counties. The results are robust to classifying these counties as either Protestant or Catholic.
[24] Also, Table A.1 in the Data Appendix displays the religion assigned to each county.
[25] As some cities, e.g. Erfurt or Speyer, were divided into ecclesiastical districts and ones ruled by a secular authority, and given that it has been much more difficult to determine the likely religion of subjects in cases in which the territory in question contained an Imperial City, it is not surprising that "historically mixed" counties appear to be more urban.
[26] After controlling for whether a county is located within the area of the former German Democratic Republic (GDR) differences in means are jointly significant in three cases (and without this control variable in five). At least in principle these differences could be a direct effect of princes' decisions during the Age of Confessionalization. Yet, given the sign pattern and the fact that historically Protestant and historically Catholic areas have in most cases

The primary data set used in this paper is the restricted-use version of the German Socio-Economic Panel Study (SOEP).[27] The SOEP is a representative longitudinal data set of private households in Germany. Starting in 1984 with 5,921 households containing 12,245 individuals living in the Federal Republic of Germany (FRG), the SOEP has collected data on a wide range of subjects in every year thereafter. Covered topics include household composition, employment status, occupational and family biographies, time allocation, personality traits, as well as physical and mental health, among others.

A random sample of 2,179 households with 4,453 members living in the German Democratic Republic (GDR) was added in 1990—preceding the Reunification; and an immigrant sample was introduced in 1994/95. As in all longitudinal data, some respondents could not be located or contacted after repeated attempts, refused to participate, or were unable to do so.[28] In order to maintain, or even expand, the size of the surveyed population, additional samples were drawn in 1998, 2000, 2002, and 2006.[29] Sample weights, which are supplied with all waves, attempt to correct for unequal sampling probabilities as well as observed patterns of non-response, and are used throughout the analysis.

Since there is little variation in religious affiliation over time (and the existing variation is likely endogenous), theoretical gains from exploiting the full panel structure of the data are limited. Hence, the analysis in this paper uses cross-sectional information contained in the 2000-2008 waves—the period during which the sample has been the largest. To increase precision and

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been governed by common authorities for the last two hundred years, such a conclusion seems unlikely. In any case, the results in this paper do not depend on the inclusion of county level controls.

[27] The restricted-use version differs from the public-use one in that it contains sensitive regional information, such as county identifiers, and that data files containing sensitive information can only be accessed remotely or on-site in Berlin. Researchers who are interested in using either version may apply to the DIW Berlin for access.

[28] After 15 (25) years approximately 50% (25%) of the original sample still participated in the SOEP. Panel attrition is overwhelmingly due to refusal to reply.

[29] Their respective sizes are 1,910, 10,890, 2,671, and 2,616 individuals. The 2002 sample added an overrepresentation of high-income households.

minimize the effect of measurement error the available information on time varying outcome variables, such as income, wages, or hours worked, has been combined by taking means.

Individuals who were not between 25 and 65 years old in 2003, or who were born abroad have been excluded from the analysis. Furthermore, the paper restricts attention to self-identified Catholics, Protestants, and atheists for a final sample of 13,411 observations.[30] The Data Appendix contains additional information on the sample selection procedures, and names the exact source of each variable used throughout the paper.

Summary statistics by religion for individual level variables used in the analysis are presented in Table 1B. The table also differentiates between individuals who grew up in the former GDR and those who grew up in West Germany, thereby highlighting existing differences in religious affiliations and economic outcomes.[31] Among either group demographic differences between Protestants and Catholics are very small; and in terms of economic success Protestants do not fare much better than Catholics by most measures, if at all.[32] By contrast, atheists are much more likely to be male, rear fewer children, and divorce more frequently. They are also more likely to live in urban environments. Most importantly though, atheists are more educated and display dramatically better economic outcomes than both Catholics and Protestants. Atheists have also been disproportionately raised by Protestant parents.

[30] The SOEP asks, "Do you belong to a church or religious community? If yes, are you …" The set of possible answers is: "catholic", "evangelical" (i.e. Protestant), "member of another Christian community", "member of another religious community", "No, nondenominational". For simplicity this paper uses the term 'atheist' for all individuals checking the last category, recognizing that atheists in a strict sense constitute a subset of non-religious people.

[31] As East Germans identify overwhelmingly as atheist or Protestant, the communist history of East Germany with its implications for economic outcomes and attitudes (see Alesina and Fuchs-Schündeln 2007) constitutes a potential confounding factor. To eliminate this source of omitted variable bias the empirical work in this paper controls for whether an individual grew up in the former GDR. Moreover, the results are robust to excluding East Germans from the sample.

[32] Raw differences between Protestants and Catholics are somewhat larger in earlier waves of the SOEP, as shown in Becker and Wößmann's (2009) addendum, and in the German General Social Survey (ALLBUS). The ALLBUS, however, does not contain regional identifiers below the state level, and does therefore not permit the use of geographic variation introduced through the process of princely reformation.

One possible explanation for the observed pattern is self-selection. Consistent with a simple price theory model in which religious participation imposes a time cost, the economically most successful individuals choose to affiliate with no religious group (see the Technical Appendix, or Iannaccone 1992). Also, in Germany members of religious congregations are obliged to pay a Church tax (*Kirchensteuer*) of up to 3.5% of one's taxable income; which is another likely factor contributing to the exodus of those who are economically successful.

IV. Estimating the Effect of Protestantism

A. Least Squares Estimates

Although the preceding discussion has hinted at selection effects, the summary statistics also reveal that Protestants, Catholics, and atheists differ on several observable characteristics known to correlate with economic success. It is therefore desirable to explore to what extent differences in outcomes by religion depend on these covariates. To this end consider the following linear model:

$$(1) \qquad y_i = \beta_P PROTESTANT_i + \beta_A ATHEIST_i + \boldsymbol{X}_i'\boldsymbol{\gamma} + \boldsymbol{Q}_c'\boldsymbol{\lambda} + \mu_s + \varepsilon_i,$$

where y_i denotes the outcome of interest for individual i, and $PROTESTANT_i$ and $ATHEIST_i$ are mutually exclusive identifiers of religious affiliation. $\boldsymbol{X}_i$ and $\boldsymbol{Q}_c$ are vectors of individual and county level covariates, respectively; while μ_s marks a state fixed effect. The error term is given by ε_i. As the sample is restricted to individuals who identify as Catholic, Protestant, or atheist, β_P and β_A identify mean differences in outcomes (conditional on covariates) relative to Catholics.

In all instances is equation (1) estimated by weighted least squares, with weights corresponding to the cross-sectional sampling weights provided in the SOEP. Standard errors are

clustered on the county level to allow for arbitrary patterns of correlation in the error terms of individuals within the same county.

Since religion potentially influences a wide range of individual decisions, e.g. regarding education or fertility, one must be cautious not to control for endogenous variables. By fully controlling for these characteristics the resulting estimates would no longer reflect the full effect of religion. Hence, the baseline regressions use a parsimonious set of covariates. More specifically, $\boldsymbol{X}_i$ includes gender, age, and distance to the nearest city, which proxies for economic conditions related to urban environments. To be as non-parametric as possible, age and distance to nearest city are each divided into multiple categories and included in the regressions as indicator variables. Yet, regional characteristics beyond the control of the individual are also likely to influence outcomes. To account for these factors the vector $\boldsymbol{Q}_c$ contains all county characteristics shown in Table 1A.[33] As demonstrated in Section IV.D, which explores issues of robustness across different sets of covariates and subsamples of the data, the qualitative results of this paper do not hinge on the inclusion of specific controls.

Table 2 presents a series of estimates of religious differences in three economic outcomes. The dependent variable in columns (1)–(6) is weekly hours of work, while that in columns (7)–(12) is the natural logarithm of hourly wages; and the logarithm of monthly earnings serves as dependent variable in columns (13)–(18). The vector of included covariates varies across columns. Moving from left to right within each group of regressions the set of controls steadily grows. The last specification for each outcome adds state fixed effects.

Columns (1), (7), and (13) show mean differences by religion, not including any covariates. These results simply reflect the raw gaps reported in Table 1B. The next specification adds an

[33] Of course, county characteristics may be endogenous, too. Since choices of a single individual have little effect on those aggregate variables, the degree of endogeneity is likely small, however.

indicator variable for having grown up in East Germany. Not surprisingly, this variable is strongly correlated with both economic outcomes and religious affiliation. Controlling for an individual's exposure to communism more than triples the difference between Catholics and atheists in income, and decreases that in Hours Worked by approximately half an hour. Taking into account whether an individual grew up in the former GDR even changes the sign of β_A with respect to wages. Changes in β_P though are much smaller.

Controls for gender and age are added next. Both covariates are important predictors of economic success, as evidenced by the size of the corresponding coefficients and the increase in R^2. While controlling for gender and age leaves the coefficients on Protestant almost unaffected, the gaps between atheists and Catholics do narrow, but remain large and statistically significant. Controlling for distance to the nearest city as well as county characteristics has very little effect on the point estimates. The same is true for including state fixed effects.[34]

For all three outcomes the same picture as in the raw data emerges. Protestants and Catholics are statistically indistinguishable. Although the former work approximately .5 hours more per week, relatively large standard errors prevent sharp conclusions. Atheists, however, fare substantially better than either group. Even after controlling for observable characteristics they work longer hours, enjoy higher wages, and have much higher earnings. The difference between atheists and Catholics is statistically significant in every specification.

Yet, there exist a priori reasons to caution against a causal interpretation of the point estimates. For the least squares estimates of β_P and β_A to identify causal effects of religion it must be the case that an individual's choice of religious affiliation is uncorrelated with unobservable factors determining economic success. This condition is unlikely to hold. As

[34] Recall that the covariate East German indicates whether an individual grew up in the former GDR. When including state fixed effects, the corresponding coefficient is identified from 'movers', i.e. from those who resided in East Germany before 1990, but left (and from West Germans presently living in East Germany).

mentioned before, religion is a choice variable and economic theory predicts individuals with higher opportunity cost of time to choose "less costly" forms of religion, or to opt out of religion altogether.[35] This introduces correlation between an individual's religion and the error term, and thereby biases the least squares estimates against detecting differences between religious groups.

B. Reduced Form Relationships

Estimation of the true effect of religion requires exogenous variation in individuals' choices of religion. The historical review in Section II suggests that the peculiar determinants of the geographic distribution of Catholics and Protestants might constitute a source of such variation.

Table 3 demonstrates that the princely reformation in the aftermath of the Peace of Augsburg does indeed introduce variation in the religion of contemporary Germans. The estimates in this table correspond to the linear model:

$$(2) \qquad PROTESTANT_i = \delta_P HIST\_PROTESTANT_c + \delta_M HIST\_MIXED_c + \boldsymbol{X}_i'\boldsymbol{\vartheta} + \boldsymbol{Q}_c'\boldsymbol{\varsigma} + \iota_s + \upsilon_i \,,$$

where $HIST\_PROTESTANT_c$ is an indicator for whether county c is historically Protestant, and $HIST\_MIXED_c$ marks counties whose area was not religiously uniform after the Peace.

The results demonstrate that individuals living in historically Protestant counties self-identify much more often as Protestant than those living in counties which are historically Catholic. The predictive power of $HIST\_MIXED_c$, however, is much smaller. After including state fixed effects it ceases to be significant.

As princes' religious choices introduce variation in the religion of Germans today, one would also expect princes' religion and individual level economic outcomes to be correlated if

[35] See, for instance, the models in Azzi and Ehrenberg (1975), or Iannaccone (1992). The SOEP data provides some suggestive evidence in favor of these models. Catholics spend significantly more time in church than Protestants; and both of these groups are more likely to attend mass than atheists.

Protestantism were to have a causal effect. Table 4 explores this issue by estimating the reduced form relationship:

(3) $$y_i = \varphi_P HIST\_PROTESTANT_c + \varphi_M HIST\_MIXED_c + \boldsymbol{X}_i'\boldsymbol{\theta} + \boldsymbol{Q}_c'\boldsymbol{\psi} + \tau_s + \eta_i.$$

The layout of the table mirrors that of Table 2.

According to the reduced form point estimates, individuals living in historically Protestant counties work almost 1.2 hours more per week, and have c. 1% higher earnings than their counterparts in historically Catholic areas. While only the former effect is statistically significant, both sets of point estimates are economically meaningful. By contrast, as columns (7)–(12) show, wages in historically Protestant counties are actually slightly *lower*.

Outcomes in counties whose area was not religiously uniform in the aftermath of the Peace are not statistically distinguishable from those in historically Catholic ones. Not only is φ_M estimated imprecisely, it is also smaller than φ_P.

One possible explanation for the findings in Table 4 is that historically Protestant territories differ systematically from historically Catholic ones. For instance, the former might have developed different institutions, or invested in infrastructure particularly conducive to economic success. In such a case the reduced form estimates might simply reflect these differences.

A priori the explanatory power of this argument appears limited. At least since the creation of a unified German Empire in 1871, but more likely since the *Reichsdeputationshauptschluss* in 1803, did formal and informal institutions converge between traditionally Protestant and Catholic areas. Today formal institutions, such as the legal or tax system, are almost identical across counties. Only the educational system exhibits some variation at the state level. To the extent that observable county characteristics proxy for existing differences in institutions or

infrastructure, one would also expect the estimates of φ_P to decline markedly with the inclusion of county level controls. This is not the case.

Also note that by controlling for state fixed effects only within state variation in outcomes and princes' choices of religion identifies the coefficients in columns (6), (12), and (18). This removes any potential bias from unobservables that exhibit geographic variation at the state level. While there does remain variation in princes' religion within today's states (cf. Figures 2A and 2B), including state fixed effects comes at the cost of discarding much otherwise useful information. Remarkably though, the point estimates change only slightly.

C. Two-Stage Least Squares Estimates

The preceding discussion has established a relationship between princes' religion around 1624 and the religion of contemporary Germans, as well as a correlation between princes' religion and economic outcomes today. It also appears that differences in county characteristics cannot explain the reduced form estimates. Together these results point to a direct effect of Protestantism. In what follows this effect is examined more rigorously using princes' religion in the aftermath of the Peace of Augsburg as an instrumental variable for whether individuals today self-identify as Protestant.

For territories' official religion in the aftermath of the Peace to be a valid instrument for that of contemporary Germans living in the corresponding areas, it must be the case that princes' religion is uncorrelated with unobserved factors determining economic success. Unfortunately, this assumption is not directly testable.

Historians, however, assert that rulers chose a religion mainly based on their own conscience, and considerations concerning political alliances, but not according to the wishes of

their subjects (e.g., Lutz 1997, Dixon 2002). Consequently, a significant fraction was forced to convert—some more than once (Scribner and Dixon 2003). The fact that states' official religion often changed with successive rulers suggests that idiosyncrasies also played an important role. Cantoni (2010) investigates to which extent official religions during the Age of Confessionalization correlated with proxies of economic growth and development. He finds that "not even wealth or strength of a territory, as measured by contribution to the expenditures of the Empire as a whole (*Reichsmatrikel*), predict whether a territory adopted the Reformation" (Cantoni 2010, p. 25), and argues that Protestant and Catholic cities did not diverge after the Peace of Augsburg.

These arguments suggest that a territory's official religion in the aftermath of the Peace stands a reasonable chance of satisfying the exogeneity assumption required for a valid instrument. If one accepts this assumption, instrumental variable estimates are consistent and have a causal interpretation. The effect of Protestantism can then be estimated by two-stage least squares, treating whether an individual self-identifies as Protestant as endogenous and the variables included in $\boldsymbol{X}_i$ and $\boldsymbol{Q}_c$ as exogenous.

The particular form of the equation to be estimated is:

(1') $$y_i = \beta_P PROTESTANT_i + \boldsymbol{X}_i'\boldsymbol{\gamma} + \boldsymbol{Q}_c'\boldsymbol{\lambda} + \mu_s + \varepsilon_i,$$

with the first stage given by

(2') $$PROTESTANT_i = \delta_P HIST\_PROTESTANT_c + \boldsymbol{X}_i'\boldsymbol{\vartheta} + \boldsymbol{Q}_c'\boldsymbol{\varsigma} + \iota_s + \upsilon_i.$$

All symbols are as defined above.

In estimating (1') and (2') the sample has been restricted to self-identified Protestants and Catholics. This restriction is necessitated by the lack of a credible instrument for individuals'

choice of atheism.[36] While individual point estimates do, of course, differ, lifting this restriction does not qualitatively change the results (cf. Table 6B).[37, 38]

Taking the two-stage least squares point estimates at face value, the results presented in Table 5 indicate that Protestantism induces individuals to work approximately 3.5–4.5 hours more per week, and raises their earnings by c. 12%. While both effects are economically very large, only the former one is statistically significant. Again, Protestantism does not increase wages. If anything, the point estimates hint at a small *negative* effect.

The estimated effects of Protestantism on Hours Worked and earnings are perhaps much larger than one might have expected; therefore, it is important to put them into perspective. The effect on Hours Worked, for instance, equals approximately one third of the mean difference between males and females, or slightly more than a third of the sample standard deviation. Such an effect size might not be unreasonable if Protestantism causes men to work only slightly harder, but induces females to take up full-time employment (see Tables 6B and 7 for suggestive evidence).

Furthermore, as the effect of religion on economic outcomes is probably not homogenous in the population, the instrumental variable estimates should be interpreted as local average treatment effects (Imbens and Angrist 1994). That is, even if the exogeneity assumption is satisfied, β_P in equation (1') identifies the causal impact of Protestantism only for those

[36] Note that if the exclusion restriction does indeed hold—that is, if $HIST\_PROTESTANT_c$ influences individuals' outcomes only through their choice of religion—then β_P identifies causal differences between Catholics and Protestants, even with this restriction in place. In particular β_P identifies a local average treatment effect (Imbens and Angrist 1994), i.e. the causal impact of Protestantism on those individuals who would be Catholic had the ruler of the area in which they live chosen differently in the aftermath of the Peace of Augsburg.

[37] Including atheists, however, changes the interpretation of the point estimate. In such case β_P would identify differences relative to the mean of Catholics and atheists.

[38] $HIST\_MIXED_c$ is not used as an instrument, as it would be a weak instrument according to the critical values in Stock and Yogo (2005). Becker and Wößmann (2009) as well as Cantoni (2010) instrument with distance to the city of Wittenberg—the origin of the Reformation movement. In the present setting this instrument turns out to be weak, too.

individuals who would be affiliated with another religion had the ruler of the area in which they live chosen differently in the aftermath of the Peace of Augsburg. In a sense these are the individuals who are the most likely to be rooted in tradition. It may not be surprising that the effect for this particular group is estimated to be very large.

However, there is also reason to caution against a causal interpretation of the instrumental variables estimates. Since the instrument exhibits only county level variation, estimation by two-stage least squares implicitly rules out any peer or spillover effects as well as complementarities in production within counties.[39] As any such effect will be falsely attributed to an individual's religion, the two-stage least squares estimates might be interpreted as upper bounds. If, for example, individuals' leisure activities are complements, then one would expect Catholics in historically Protestant counties to work harder than those in historically Catholic ones simply because they interact more with Protestants. In such a case, how hard one works depends not only on one's own work ethic, but also on that of the people with whom one interacts. Yet, estimates based on an instrument exhibiting only geographic variation will attribute the endogenous peer effect to an individual's religious affiliation. Thus, if there exist strong positive spillover effects, then the two-stage least squares point estimates will be larger than the true individual level impact of Protestantism. A more appropriate counterfactual in the presence of large spillover effects would be a change in the religion of all of a county's residents.

D. Sensitivity and Robustness

Tables 6A and 6B explore the robustness of the reduced form and two-stage least squares estimates across different specifications and subsamples of the data. Only estimates of φ_P and β_P together with the associated standard errors are reported. The first row in the upper panel

[39] For formal models of peer and spillover effects see Akerlof (1997), Bénabou (1993), or Cicala et al. (2011).

displays baseline results, i.e. those from columns (4), (10), and (16) in Tables 4 and 5. Successive rows expand the set of covariates to include potentially endogenous controls, such as indicator variables for marital status, health, or educational attainment.[40] The lower panel of each table displays results obtained by estimating models analogous to those in columns (6), (12), and (18) in Tables 4 and 5 on different subsamples of the data.

Of the 74 point estimates with respect to Hours Worked and Log Labor Income only 6 do not carry the expected positive sign.[41] Of the 37 coefficients with respect to Log Hourly Wages 6 are positive, whereas 31 are negative. With a few exceptions almost all of these 37 estimates are fairly close to zero. Thus, the sign pattern of the coefficients in Tables 6A and 6B lends support to the previously drawn conclusions.

While the inclusion of additional covariates does, of course, affect individual point estimates and the coefficients vary considerably across different subsamples of the data, the effect of Protestantism on Hours Worked remains economically large and often statistically significant—despite the fact that the estimates in Tables 6A and 6B tend to be much less precise than those in Tables 4 and 5. The effect of Protestantism on earnings appears to be somewhat less robust than that on Hours Worked. The standard errors in this case are simply too large to confidently draw strong conclusions, or even to distinguish individual coefficients from zero in a statistical sense.

[40] To be as non-parametric as possible these specifications add indicator variables for the highest educational degree, marital status, and self-rated health. The Data Appendix provides a detailed description of each covariate.

[41] Under the assumption that all coefficients are independently distributed—which is an obvious oversimplification—the probability that 6 or fewer of them would be negative is effectively zero if Protestantism had no effect on these outcomes. Thus, one would reject the null that the effect of Protestantism is non-positive. To see this, note that if the effect of Protestantism on these outcomes is zero, then the probability of one coefficient being negative is one half, and the probability of any number of them being negative is binomially distributed. The probability that 6 or fewer of them are negative is given by $Pr[\#6] = \sum_{j=0}^{6} B(j, .5)$, where $B(j, .5)$ denotes the binomial probability mass function for j successes given the respective number of tries and a success probability of .5.

There is some suggestive evidence that the effect on income and Hours Worked is stronger for females than for males, and that it is more pronounced for older than for younger individuals. But again, wide confidence intervals make such a conclusion highly speculative.[42]

Tables 6A and 6B also report estimates for individuals between the ages of 20 and 55 in wave N (1997) of the SOEP, which is the age restriction and wave used by Becker and Wößmann (2009). As in their addendum, Protestantism is associated with higher earnings. Moreover, it appears that the higher income of Protestants is primarily driven by an increase in Hours Worked (as opposed to wages) in wave N as well.

Note that the estimates shown here attempt to correct for the endogeneity of religious choice, whereas the ones in Becker and Wößmann (2009) for contemporary Germany are correlational. Given the increasing number of individuals leaving the Catholic and Protestant Church—with the latter losing significantly more members than the former—this may explain why Becker and Wößmann (2009) are unable to detect an effect in later waves of SOEP. In the interest of transparency it ought to be acknowledged that the effect on Hours Worked is not present in Becker and Wößmann's (2009) original sample, which is restricted to *full-time* workers.[43] Only when individuals who choose to work fewer hours per week are included in the sample does this effect become apparent.

V. Interpreting the Evidence through the Lens of Economics

Broadly summarizing, the results presented above suggest that Protestantism has a positive effect on economic outcomes, as indicated by an increase in hours worked and higher earnings.

[42] Interestingly, Becker and Wößmann (2008) document that in nineteenth-century Prussia the gender gap in education was smaller in predominantly Protestant areas.

[43] The very brief description of the SOEP sample selection procedures in Becker and Wößmann (2009) does not mention that they restrict attention to West Germans only. I am very grateful to Ludger Wößmann for clarifying this point and for providing me with the code used in their analysis.

However, Protestantism does not appear to raise wages. This section attempts to distinguish between competing explanations for the estimated effects. In particular it argues that a human capital theory of Protestantism is at odds with the data, while an explanation based on individual values akin to the *Protestant Ethic* receives mild support. In doing so it also presents additional evidence on the impact of Protestantism.

Using wave N (1997) of the SOEP, Becker and Wößmann (2009) report that Protestants receive on average .8 more years of schooling than Catholics, and that assuming a labor market return as low as 5.2% would be sufficient to reconcile essentially the whole *earnings* gap (of 4.8%). A human capital theory of Protestantism, however, cannot readily explain why there appears to be no effect on wages. If Protestants invested more in education, one would expect this to be reflected not only in higher earnings, but also in substantially higher wages.[44]

Nevertheless, Table 7 explores these issues further by reporting reduced form and two-stage least squares estimates of the effect of Protestantism on several additional outcomes: years of schooling, obtaining a college degree, contractual hours of work, desired hours of work, females' propensity to take up full-time employment, and the probability of being self-employed. All specifications include the full set of individual and county level covariates. Results shown in the right column also control for state fixed effects (which comes at the cost of losing precision, but removes any potential bias from unobservables exhibiting state level variation).

Although Protestants do not necessarily receive more years of schooling than Catholics in later waves of the SOEP, taking the point estimates at face value, they do seem to be substantially more likely to obtain a college degree. Yet, given the conflicting sign pattern and

[44] *Given* higher wages and if the substitution effect outweighs the income effect, Protestants would also work more.

the size of the standard errors, the effect of Protestantism on educational attainment among Germans today remains unclear.[45]

By contrast the coefficients in Table 7 do suggest a positive effect of Protestantism on self-employment, and females' propensity to work full-time. Both effects are very large, but imprecisely estimated. In a similar vein, the point estimates with respect to Contractual Hours of Work provide evidence that Protestants choose jobs that require them to work longer hours.[46] While not incompatible with a human capital mechanism, especially when viewed through the lens of a Ben-Porath (1967) model, these results may also indicate religious differences in work related values.

The most important piece of evidence in favor of a Protestant work ethic comes from the question: "If you could choose your own number of working hours, taking into account that your income would change according to the number of hours: How many hours would you want to work?" The outcome Desired Hours of Work corresponds to the average of an individual's answers to this question in waves Q-Y (2000-08). All else equal, it seems reasonable to think of Desired Hours of Work as a crude proxy for an individual's work ethic.[47] Consistent with Weber's (1904/05) theory, the reduced form and two-stage least squares estimates reveal that Protestants *want* to work longer hours than Catholics.

As demonstrated in Table 8, controlling for this single proxy for an individual's work ethic reduces the estimated effects on earnings and hours worked substantially (while leaving the point estimate Log Hourly Earnings almost unaffected). The coefficient with respect to Log Labor

[45] Becker and Wößmann (2009) acknowledge that their findings for wave N (1997) do not hold up in wave T (2003) of the SOEP. One, admittedly unsatisfactory, explanation for why the sign of the point estimate with respect to years of schooling differs from that for obtaining a college degree is that the information on years of schooling in the SOEP includes times spent in vocational training. This can be expected to at least mitigate differences in schooling, despite higher educational attainment for Protestants in a 'formal' sense.
[46] There are no religious differences in occupational prestige or the likelihood of working in the public sector though.
[47] Recall that the preceding analysis shows that, if anything, Protestants earn slightly *lower* wages than Catholics.

Income even changes sign. In contrast, controlling for one's highest educational degree or time spent in church—another candidate explanation for why Protestants work longer hours than Catholics—does little to reduce the estimated effects. Even conditional on educational attainment and time spent in church, Protestants work longer hours (and enjoy higher incomes) than Catholics. It, therefore, appears that the data favor a values-based explanation for the impact of Protestantism.[48]

VI. Conclusion

Ever since Weber's (1904/05) *The Protestant Ethic and the Spirit of Capitalism* has there been controversy about the effect of religion on economic growth and development. Even contemporary data feature a correlation between religious affiliation and economic success. Religious choices, however, are likely endogenous, and observed correlations might, therefore, be spurious.

This paper presents estimates of the effect of Protestantism using micro data from present-day Germany. It exploits the fact that the geographic distribution of Catholics and Protestants is an artifact of a provision in the Peace of Augsburg in 1555 and plausibly exogenous to unobservable factors determining economic outcomes. More specifically, it uses princes' religion in the aftermath of the Peace of Augsburg as an instrumental variable for the religion of individuals living in the respective areas today. Both reduced form and instrumental variables estimates indicate that Protestantism increases hours worked—raising earnings in the process.

[48] Weber (1904/05) also hypothesized about Protestants saving (and investing) more than Catholics. While the raw SOEP data show no differences in wealth between the two groups, the reduced form and two-stage least squares estimates are suggestive of a positive effect. However, the point estimates are very imprecise and do depend on the set of controls. Hence, any conclusion would have to be extremely speculative.

There is also evidence that Protestantism increases self-employment and induces females to work full-time. However, Protestantism does not appear to increase hourly wages.

Neither institutional factors nor differences in human capital acquisition can account for the estimated effects. Instead, the available evidence points to a values-based explanation along the lines of the *Protestant Ethic*. Religion seems to shape social norms and customs, which in turn have important effects on economic outcomes. Therefore, the consequences of princes' choices in the aftermath of the Peace of Augsburg are still detectable in contemporary micro-data.

Technical Appendix

This appendix demonstrates that the simplest possible formalization of Weber's (1904/1905) *Protestant Ethic* as reducing the 'utility from non-work related activities' (or alternatively as reducing the "disutility from work") is capable of explaining the estimated impact of Protestantism as well as the selection patterns apparent in the SOEP data. In doing so it borrows from Doepke and Zilibotti (2008).[49]

Consider a population of two overlapping generations—parents and children. For simplicity, each parent is assumed to have exactly one child. Parents maximize their dynasty's utility; i.e. they are altruistic towards their child, where $\beta \in (0,1)$ denotes the degree of altruism. To improve their offspring's expected well being parents invest in the human capital of their children, $h \in H$, incurring a cost of $f(h)$. $f: H \to \mathbb{R}_+$ is strictly increasing, convex, and twice continuously differentiable on the compact set H. Alternatively, parents can choose to spend their full income $w \in \mathbb{R}_{++}$ on consumption, c, or engage in leisure, $l \in [0,1]$, both of which are normal goods. Utility is assumed to be additively separable in consumption, $u(c)$, and non-market activities, $\delta v(l,s)$, where $\delta \in \mathbb{R}_{++}$ is a dynasty's "taste for non-market activities", and $s \in [0,1]$ denotes time spent in church. Agents who do not spent any time in church, i.e. for whom $s^* = 0$, are said to be atheists. For simplicity the marginal utility of church related activities is assumed to be independent of the amount of leisure time spent outside of church, i.e.

[49] Doepke and Zilibotti (2008) develop a model of preference formation with an endogenous taste for leisure. Their model can explain why the Industrial Revolution coincided with the rise of a new work ethic, and why the landowning aristocracy was replaced by capitalists rising from modest backgrounds.

$\frac{\partial^2 v}{\partial l \partial s} = 0$. Children inherit δ from their parents. Both $u: \mathbb{R}_+ \to \mathbb{R}$ and $v: [0,1]\times[0,1] \to \mathbb{R}$ are strictly increasing, concave, and twice continuously differentiable in each of their arguments. Moreover, u and v satisfy Inada conditions with respect to c and l.

Assuming that children's wages increase on average with their human capital, and letting $\mathbb{E}_{\tilde{w}|h}$ denote the expectation operator over a child's wage conditional on human capital level h, a parent's value function is given by:[50]

$V(w) = \max_{c,h,l,s} u(c) + \delta v(l,s) + \beta \mathbb{E}_{\tilde{w}|h}[V(\tilde{w})]$,

subject to the budget constraint: $c + f(h) = w(1 - l - s)$.

If Protestantism reduces dynasties' taste for non-market activities (see Doepke and Zilibotti 2008 for a micro-model justifying this assumption), then the model above can be interpreted as a formalization of Weber's (1904/05) hypothesis about the Protestant work ethic. Moreover, the model can rationalize the facts described in the previous section. To see this, consider the first order conditions:

(4) $u'(c) = \mu$

(5) $\beta \frac{\partial}{\partial h} \mathbb{E}_{\tilde{w}|h}[V(\tilde{w})] = \mu f'(h)$

(6) $\delta v_1(l,s) = w\mu$

(7) $\delta v_2(l,s) \leq w\mu$

where μ denotes the usual Lagrange multiplier, i.e. the marginal utility of full income, and equation (7) recognizes that a corner solution might obtain with respect to time spent in church. That is, a strict inequality in (7) would imply that $s^* = 0$.

It is easy to see from (6) that by reducing δ Protestantism induces individuals to engage in less leisure, i.e. it decreases l^* for any w. The same holds true for interior solutions of s, as is apparent from (7). The decrease in non-market time increases hours worked and, therefore, raises earnings.

Moreover, individuals with low regard for non-market activities are more likely to opt of church completely, since the inequality in equation (7) is more likely to hold for lower values of δ. Observe that if the marginal utility of income does not decrease 'too fast', or more precisely if $w\mu$ is increasing in w, then economically more successful individuals, i.e. those with higher

[50] To guarantee existence, a child's expected wage is assumed to be bounded for every level of human capital.

opportunity cost, will opt out of religion more frequently.[51] The intuition is simply that for them the cost of participation in church related activities are too high.

Consistent with the results in Table 2 this selection effect mutes observed differences in economic outcomes between self-identified Protestants and self-identified Catholics, despite a causal effect of Protestantism. Given that Protestants spent more time working and less time in church (which is in fact true in the SOEP data) and the positive intergenerational correlation of religiosity introduced through δ, the model sketched out above can also explain why atheists have been disproportionately raised by Protestant parents. For any given level of investment in children's human capital, h, it simply takes a lower wage draw for the children of Protestants to opt out of religion, i.e. for the inequality in equation (7) to be strict. Naturally, higher investments by Protestants in h would be another way to rationalize the selection patterns. Note though that this is not required. Religious differences in δ alone are sufficient.

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[51] The assumption that $w\mu$ increases in w is equivalent to assuming that leisure, l, decreases as wages increase, i.e. that the substitution effect outweighs the income effect.

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Data Appendix to
"The Protestant Ethic and Work:
Micro Evidence from Contemporary Germany"

This appendix provides a description of all data used in the paper as well as precise definitions together with the exact sources of all variables.

A. Mapping Territories' Official Religion after the Peace of Augsburg into Today's Counties

In creating a mapping between present-day counties and the religion of the prince who reigned over the corresponding area in the aftermath of the Peace of Augsburg this paper relies on several historical accounts (e.g., Lutz 1997, Dixon 2002). The primary source of information, however, are Schindling and Ziegler (1992a, 1992b, 1993a, 1993b, 1995, 1996), which summarize the available research on each of the territories of the Holy Roman Empire for the period from 1500 to 1650. While the work of Schindling and Ziegler (1992a, 1992b, 1993a, 1993b, 1995, 1996) is based on a comprehensive body of historical research, the Reformation period has been studied more extensively for some regions than others. Consequently, information on some small independent territories, such as Isenburg, Hoya, or Barby, is relatively scarce.

The primary mapping used in this paper is based on the religious situation around 1624—the 'normal year' for territories' official religion set in the Peace of Westphalia, which ended princes' influence over the religion of their subjects. Since territories' official religion has not been constant from 1555 until 1624, there exists the possibility that the results depend on the choice of base year. To mitigate this possibility a secondary mapping based on the situation directly after the Peace of Augsburg in 1555 has been created as well. As Table A.1 shows both mappings are very similar.

Despite notable differences between and within different Protestant denominations, i.e. Lutherans, Calvinists, and Zwinglians, as a whole their teachings were generally much closer to each other than to the doctrines of the Catholic Church. Moreover, most Protestant denominations today are united in the Evangelical Church in Germany. Therefore, the mapping abstracts from differences between reformed denominations and differentiates only between

Protestant and Catholic territories. Another reason is that during the Second Reformation a number of territorial lords converted from Protestantism to Calvinism, but did not require their subjects to adopt Calvinism. That is, most subjects remained Protestant. A mapping that only differentiates between Protestant and Catholic regions will still capture the most important differences between regions.

In only a few instances does the area of a county or county equivalent today correspond exactly to the area of some state at the beginning of the seventeenth century. Moreover, until the secularization in 1803 abbots and bishops were not only religious but also worldly rulers in the Holy Roman Empire. This entails that a handful of cities were divided between a religious and worldly lord. Multiple rulers make it, of course, more difficult to determine an "official religion," and necessitate the use of guidelines by which to assign a religion to the county corresponding to a given area.

Whenever Catholic and Protestant lords reigned simultaneously over different parts of a county's area, or whenever this area contained an Imperial City, the religion assigned to this county corresponds to the likely religion of the majority of subjects. While Imperial Cities were not bound by princes' *ius reformandi*, political power in these towns often lay in the hands of local elites who would virtually impose the Reformation on residents (Dixon 2002). Therefore, although the mapping is in a strict sense based on the likely religion of the majority of subjects in a given area, most variation stems from the fact that princes or local elites could dictate the religion of ordinary people.

Population estimates are often not available for this time period. In cases in which relative populations cannot be determined with certainty, they are gauged by comparing the size of the areas in question assuming equal population densities. In 53 instances this procedure yielded ambiguous results. The counties in question are all classified as neither historically Protestant nor historically Catholic, but as "mixed". The results are robust to classifying all of these counties as either historically Protestant or historically Catholic.

Absent reliable high-resolution GIS data for the late sixteenth and early seventeenth centuries, the mapping had to be constructed by visually comparing the borders of today's counties with the principalities in the (relatively imprecise) maps in Schindling and Ziegler (1992a, 1992b, 1993a, 1993b, 1995, 1996). Naturally, the information in Schindling and Ziegler's verbal description was used as well, and proved usually much more useful than any

map—especially when a territory's official religion changed multiple times. Given that names of cities and places rarely changed it was feasible to relate whole text passages to modern day areas and counties. The entire process of gathering and analyzing the historical information, as well as the creation of the mapping itself was carried out by a trained German historian (who holds the equivalent of a master's degree).

Table A.1 shows the religion assigned to all German counties by each of the two mappings. Territories that used to belong to the Holy Roman Empire, but lie outside of the borders of the Federal Republic of Germany today, such as Austria, Belgium, the Czech Republic, or parts of Italy, have not been considered.

B. County Level Data

Information on counties' institutional features and infrastructure is taken from *Statistik regional 2007*. *Statistik regional* is an annual publication of the German Federal Statistical Office and the statistical offices of the Länder containing data on various characteristics of 437 counties and county equivalents.

Below follows a description of all county level variables used throughout the analysis.

Total Population is defined as a county's average population (in thousands) during the calendar year 2005. This variable has been taken from *Statistik regional 2007* without changes.

Population per Square Kilometer is defined as a county's average population (in thousands) per square kilometer during the calendar year 2005. This variable has been derived by dividing Total Population by a county's area as of December 2005.

Number of Establishments is defined as the number of firms per thousand residents in the manufacturing sector (including mining) as of September 2005. This variable has been derived by dividing the number of firms, as given in the data, by a county's population.

Employment by Sector is defined as the average number of employees during the calendar year in a given sector as a percentage of all employees in that county. The sectors considered in this

paper are manufacturing (including construction) and services.[1] The variables have been derived by dividing the number of employees in each sector by the total number of employees in all sectors. The necessary information is contained in the raw data.

Hospitals is defined as the number of hospitals in a county per thousand residents. This variable has been derived by dividing the number of hospitals in that county as of December 2005 by Total Population.

Welfare Recipients is defined as the number of recipients of *Hilfe zum Lebensunterhalt* per thousand residents. The variable has been derived by dividing the total number of recipients as of December 2005 by Total Population. In contrast to the U.S. welfare system, eligibility for *Hilfe zum Lebensunterhalt* does not vary by state, but is determined on the basis of federal legislation.

Educational Institutions is defined as the number of schools of a given kind per thousand residents. The kinds of schools considered in this paper are: pre-schools (*Vorschulen*), elementary schools (*Grundschulen*), and academic high schools (*Gymnasien*). Each variable has been derived by dividing the total number of the respective kind of school as contained in *Statistik regional 2007* by Total Population.

C. German Socio-Economic Panel Study (SOEP)

All individual level data used in this paper is from the restricted-use version of the German Socio-Economic Panel Study (SOEP) as of wave Y (2008). The restricted-use version differs from the public-use one in that it contains sensitive regional information, such as county identifiers, and that data files containing sensitive information can only be accessed remotely or on-site in Berlin. Researchers interested in using either version must apply to the DIW Berlin for access. The analysis in this paper has been carried out on SOEPremote.

The SOEP is a representative longitudinal data set of private households in Germany. Starting in 1984 with 5,921 households containing 12,245 individuals living in the Federal Republic of Germany, the SOEP has collected data on a wide range of subjects in every year thereafter. Covered topics include household composition, employment status, occupational and

[1] The overwhelming majority of employees outside these two sectors work in farming and forestry.

family biographies, time allocation, personality traits, as well as physical and mental health, among others.

A random sample of 2,179 households with 4,453 members living in the German Democratic Republic (GDR) was added in 1990—preceding the Reunification; and an immigrant sample with 552 households containing 1,078 individuals was introduced in 1994/95. As in all longitudinal data, some respondents could not be located or contacted after repeated attempts, refused to participate, or were unable to do so. Attrition in the SOEP is rather low, however. After 15 (25) years approximately 50% (25%) of the original sample still participated in the SOEP. Overwhelmingly attrition is due to refusal to reply. In order to maintain, or even expand, the size of the surveyed population, additional samples were drawn in 1998, 2000, 2002, and 2006. Their respective sizes are 1,910, 10,890, 2,671, and 2,616 individuals, with the 2002 sample oversampling high-income households. The average of the available 2000-08 cross-sectional weights, which are supplied with the data and attempt to correct for unequal sampling probabilities as well as observed patterns of non-response, is used throughout the analysis. Additional information on the SOEP, its sample design and size, how to obtain access, etc., can be found in Frick (2006), Haisken-DeNew and Frick (2005), Göbel et al. (2008), or on the SOEP website.[2]

Individuals who were less than 25 or more than 65 years old in 2003, or were born outside of Germany have been excluded from the analysis. Furthermore, the paper restricts attention to self-identified Catholics, Protestants, and atheists; for a final sample of 13,411 observations with non-missing information on county of residence and at least one of the three main outcome variables used in the paper.[3]

The following individual level variables are used throughout the analysis:

Religion is defined as the respondent's self-identified religious affiliation. In 2003 (wave T) the SOEP asked, "Do you belong to a church or religious community? If yes, are you …" The set of possible answers was: "catholic", "evangelical" (i.e. Protestant), "member of another Christian community", "member of another religious community", "No, nondenominational". The relevant variable is contained in the file *TP*. This paper restricts attention to individuals who identify

[2] The SOEP website is currently located at <http://www.diw.de/en/soep>.
[3] To reduce the effect of outliers the top and bottom one percent of wage and earnings observations are not used in the estimation.

either as Catholic, Protestant, or check "No, nondenominational". If feasible, individuals with missing information in wave T, have been assigned their self-identified religion in wave X (2007) or wave N (1997) instead.

Female is defined as an indicator variable equal to one if the respondent is female. The SOEP staff cleans the answers to all waves, and makes information on gender available in the file *PPFAD*.

Age is defined as the respondent's age in 2003. It has been constructed based on his year of birth. The SOEP staff cleans the answers to all waves, and makes information on year of birth available in the file *PPFAD*.

Number of Children is defined as the total number of children identifiable within SOEP by merging all available data. The SOEP staff creates this variable and makes it available in the files *BIOBIRTH* and *BIOBIRTHM* for female and male respondents, respectively.

Marital Status is defined as the respondent's marital status as of 2003. For each wave the SOEP staff generates this variable. It is contained in the file *TPGEN*, and differentiates between "married", "married, but separated", "single", "divorced", and "widowed". Each possibility has been recoded into an indicator variable, combining the first two categories.

Distance to Nearest City is defined as the distance to the center of the nearest city from the respondent's place of residence. The variable used in this paper is based on the answer to the corresponding question on the Household Questionnaire in 2004, which is contained in the file *UH*. The original answer choices were: "Residence is in the city center", "under 10 km", "10 to under 25 km", "25 to under 40 km", "40 to under 60 km", and "60 km or more". Each successive pair of answer choices has been recoded into an indicator variable.

Labor Income is defined as the mean of monthly gross labor income in Euros during 2000-2008. Based on information in the Individual Questionnaire the SOEP staff generates variables indicating the monthly gross labor income of the respondent in each year. These variables are

contained in the files **PGEN*, where * is a placeholder for the respective wave. The variable used in this paper averages all non-missing values for the years 2000 to 2008.

Hours Worked is defined as the mean of actual weekly time spent working (including overtime) during 2000-2008. Based on information in the Individual Questionnaire the SOEP staff generates variables indicating actual weekly working hours of the respondent for each year. These variables are contained in the files **PGEN*, where * is a placeholder for the respective wave. The variable used in this paper averages all non-missing values for the years 2000 to 2008.

Hourly Wage is defined as the ratio of Labor Income to Hours Worked.

Self-Employed is defined as the mean of seven indicator variables equal to one if the respondent reports to have been self-employed in a given year during 2000-2008. On the Individual Questionnaire the respondent is asked to indicate his current position or occupation. For each wave the SOEP staff recodes occupations into Erikson, Goldthorpe Class Categories (IS88), and makes the resulting variable available in the files **PGEN*, where * is a placeholder for the respective wave. Whenever a respondent has been classified as "self-employed with employees" or as "self-employed without employees" according to the Erikson, Goldthorpe Class Categories, he is considered to be self-employed for the purposes of this paper. That is, the indicator variable for the respective year is coded as one, and as zero otherwise.

Educational Attainment encompasses six indicator variables for the highest academic (as opposed to vocational) degree completed by the respondent as of 2003. The five categories considered in this paper are: Drop Out, Lower Secondary School (*Hauptschulabschluss*; usually 9 years of schooling), Intermediate Secondary School (*Realschulabschluss*; usually 10 years of schooling), Academic Secondary School (*Abitur* or *Fachabitur*; usually 12-13 years of schooling), and College/University. The SOEP staff combines the information on education from all waves and makes it available in the file *TPGEN*.

Years of Schooling is defined as the amount of education and further training (in years) at the time of the survey in 2003. In contrast to Educational Attainment, Years of Schooling also

includes formal vocational schooling and training. The variable used in the paper has been generated by SOEP staff, and can be found in the file *TPGEN*.

Religion of Father is defined as the religious affiliation of the respondent's father. This information is provided by the respondent himself in the Biography Questionnaire, or the Youth Questionnaire. Possible answer choices are: Catholic, Protestant, Other Christian Denomination, Islamic Denomination, Other Denomination, No Denomination. The SOEP staff combines the relevant information from all waves and makes it available in the file *BIOPAREN*.

Religion of Mother is defined as the religious affiliation of the respondent's mother. This information is provided by the respondent himself in the Biography Questionnaire or the Youth Questionnaire. Possible answer choices are: Catholic, Protestant, Other Christian Denomination, Islamic Denomination, Other Denomination, No Denomination. The SOEP staff combines the relevant information from all waves and makes it available in the file *BIOPAREN*.

Health Status is defined as a dichotomous variable indicating whether the respondent is in 'good' or 'poor' health at the time of the survey in 2003. In every year the SOEP elicits the respondent's health status. The set of possible answer choices is: "very good", "good", "satisfactory", "poor", and "bad". The variable used in this paper combines the first three categories to mean that the respondent is in 'good' health, and the latter two categories to indicate that he is in 'poor' health. Information on the respondent's health status is contained in the file *TP*.

Desired Hours of Work is defined as the mean of the answers to the following question asked in 2000-08: "If you could choose your own number of working hours, taking into account that your income would change according to the number of hours: How many hours would you want to work?" The relevant information is contained in the files ***P*, where * is a placeholder for the respective wave. The variable used in this paper averages all non-missing values for the years 2000 to 2008.

Time in Church is defined as the answer to the following item in 2003: "Please indicate how often you take part in each activity." The set of possible answer choices is: "daily", "at least once

a week", "at least once a month", "seldom", and "never". The variables used in this paper correspond to five indicator variables equal to one if the respective choice was selected and zero otherwise. The relevant information is contained in the file *TP*.

D. Cross-Country Data

Figure 1 is based on country level data contained in Heston et al. (2006) and Barrett et al. (2001). The Penn World Table 6.2 (Heston et al. 2006) provides data on purchasing power parity and national income accounts (in international prices) for 188 countries from 1950-2004 (with 2000 as base year). Barrett et al. (2001) is a reference work providing detailed information on major and minor religions in 239 countries and regions around the world starting in 1900. The information contained therein is based on official government statistics, where available, church records, and estimates of the authors. It has been found to be highly correlated with that published elsewhere (Hsu et al. 2008).

The set of countries depicted in Figure 1 are all countries with available information on GDP per capita in 2000 and which are majoritarian Catholic and Protestant at this point in time; that is, those countries for which the combined share of Catholics and Protestants exceeds 50%.

The definition of Protestant used in this paper includes Anglicans, and in the case of the US those Christians classified as "Independents" by Barrett et al (2001). The correlation depicted in Figure 1 is robust to excluding Anglicans and Independents, and to using different cut-off levels around 50%. The correlation is also robust to excluding all African countries.

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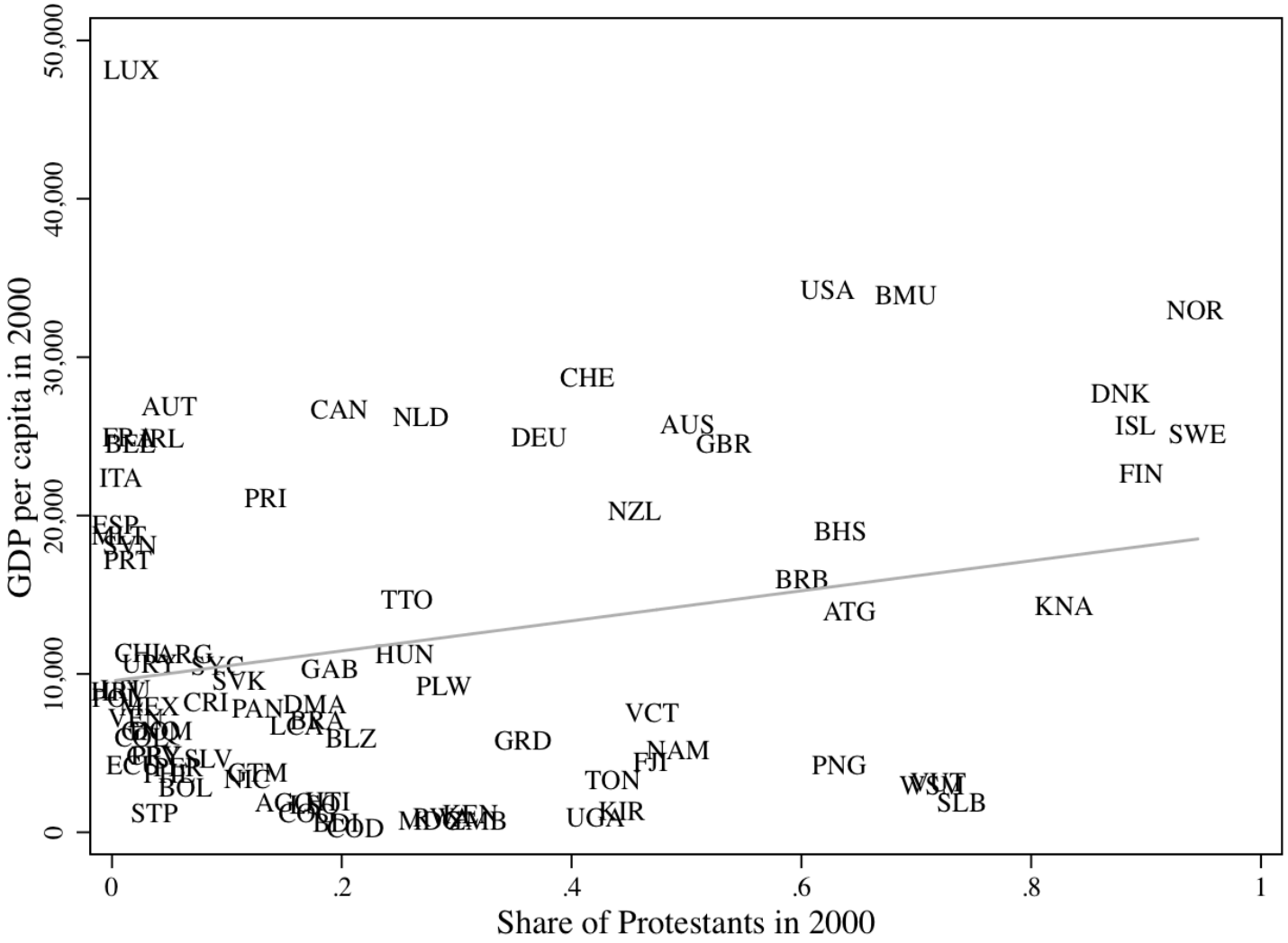
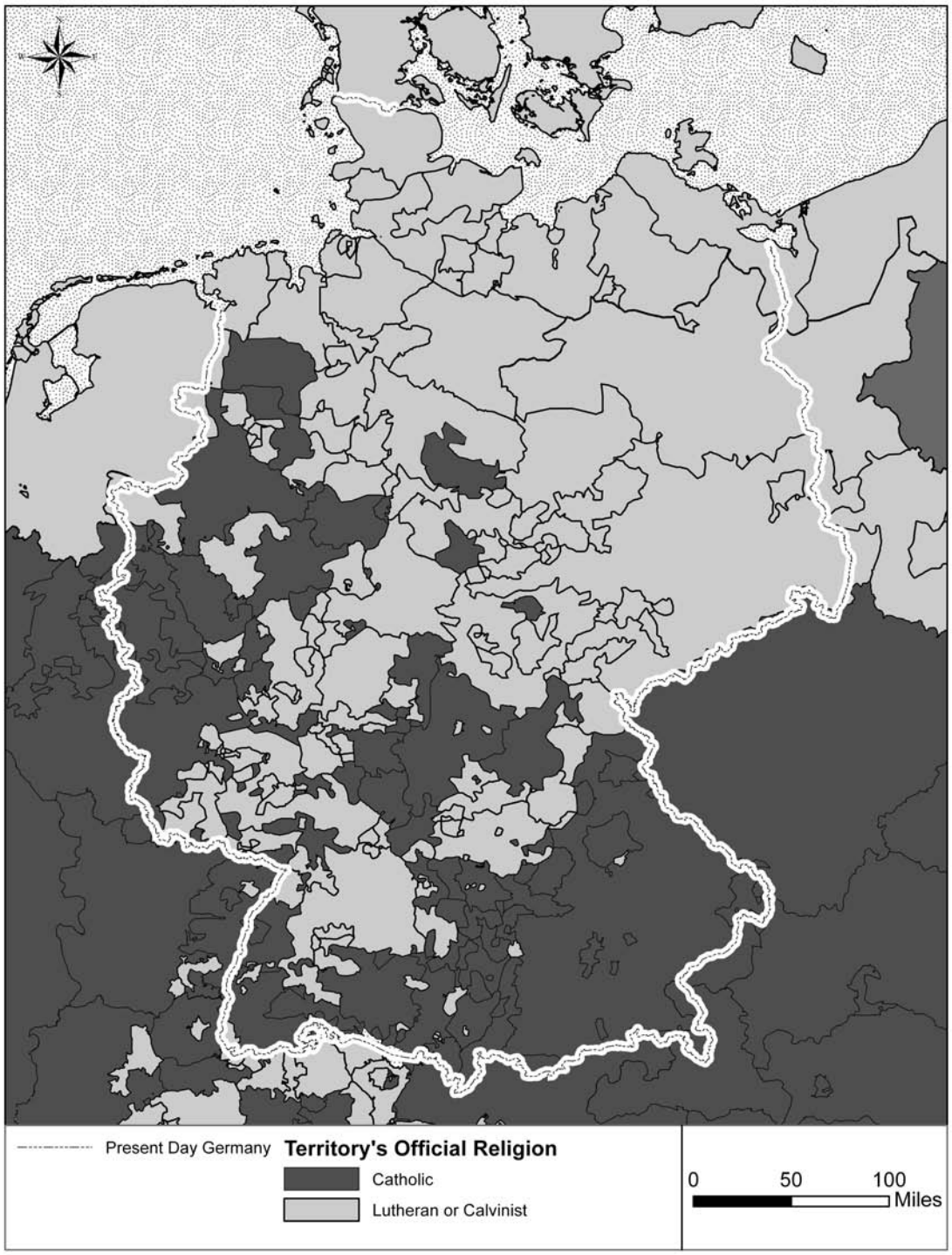
Figure 1: The Correlation between GDP per Capita and Share of Protestants



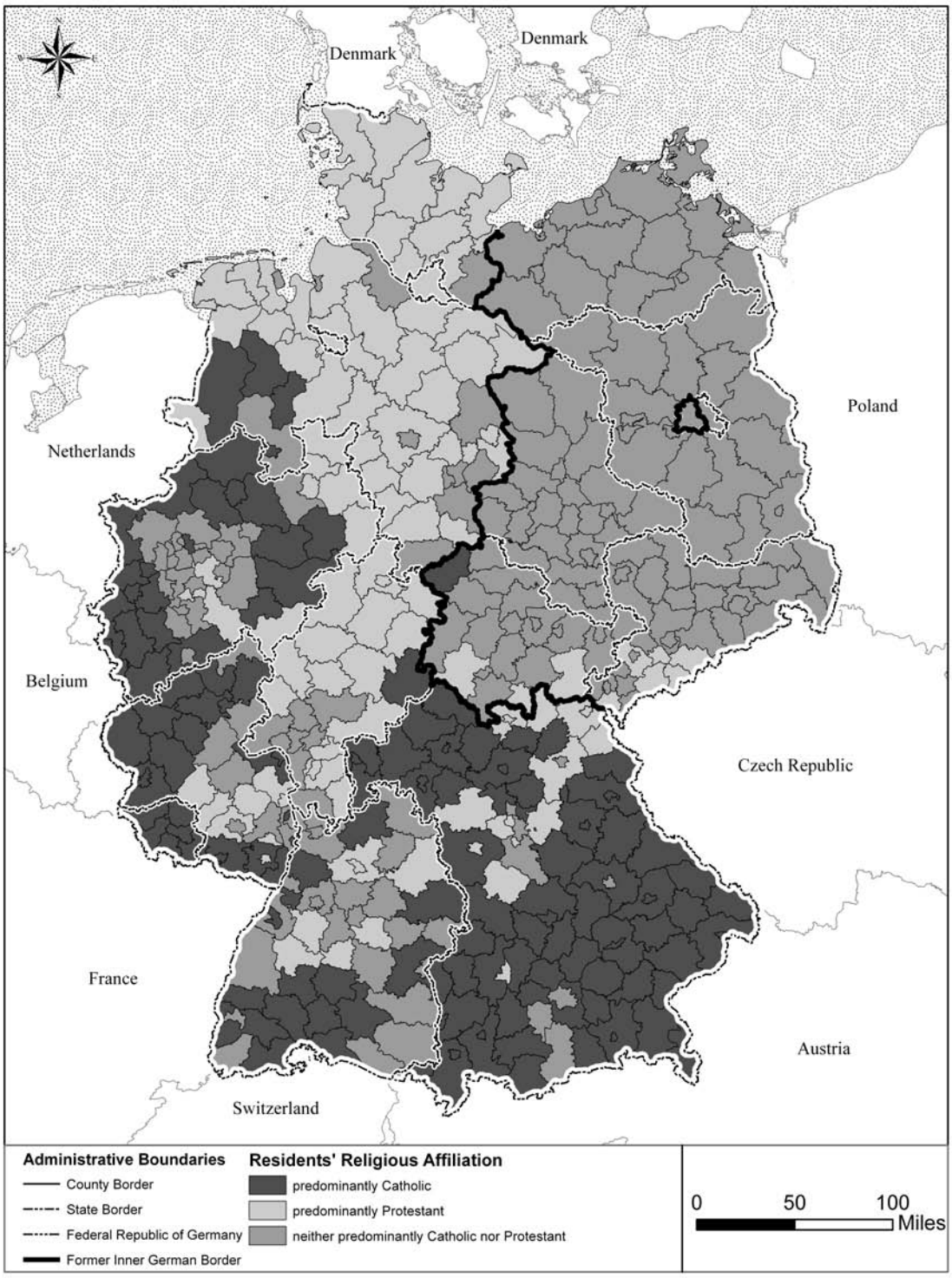
Notes: GDP per capita is measured in purchasing power adjusted 2000 USD. The sources of GDP per capita and Share of Protestants are Penn World Table 6.2 (Heston et al. 2006) and Barrett et al. (2001), repsectively. The Data Appendix provides further detail. See Becker and Wößmann (2009) for a very similar figure with 1900 as base year.

Figure 2A: The Religious Situation in the Holy Roman Empire Before the Thirty Years' War



Sources: Based on Kunz (1996) and the information in Schindling and Ziegler (1992a, 1992b, 1993a, 1993b, 1995, 1996)

Figure 2B: The Religious Situation in Present Day Germany



Sources: Author's calculations based on SOEP data and Statistsiches Bundesamt (1990)

Table 1A: County Level Summary Statistics

Variable	Full Sample	Official Religion in 1624: Catholic	Protestant	Mixed
Total Population (in 1,000)	163.1	175.1	145.2	228.5
	(140.9)	(164.9)	(123.8)	(150.3)
Population per Square Kilometer (in 1,000)	.462	.427	.414	.789
	(.621)	(.625)	(.536)	(.880)
Number of Establishments (per 1,000 Residents)	1.718	1.768	1.488	2.788
	(7.514)	(8.105)	(5.219)	(13.749)
Employment by Sector (percent):				
Manufacturing	28.24	29.54	27.41	29.74
	(8.67)	(8.48)	(8.70)	(8.57)
Services	68.59	66.91	69.43	67.86
	(9.39)	(9.60)	(9.16)	(9.72)
Hospitals (per 1,000 Residents)	.067	.069	.062	.083
	(.264)	(.297)	(.235)	(.320)
Welfare Recipients (per 1,000 Residents)	7.058	6.47	6.584	10.73
	(27.71)	(25.80)	(19.11)	(55.60)
Educational Institutions (per 1,000 Residents):				
Pre-Schools	.031	.016	.042	.007
	(.078)	(.042)	(.094)	(.015)
Elementary Schools	.565	.637	.519	.644
	(2.032)	(2.677)	(1.559)	(2.557)
High Schools (*Gymnasien*)	.099	.076	.093	.182
	(.423)	(.210)	(.302)	(.961)
Universities	.003	.002	.003	.002
	(.016)	(.007)	(.019)	(.008)
Number of Observations	437	113	271	53

Notes: Entries are unweighted means and standard deviations of county level data for those counties with non-missing information. See the Data Appendix for the precise definition and source of each variable.

Table 1B: Individual Level Summary Statistics

		West Germans			East Germans		
Variable	Full Sample	Catholics	Protestants	Atheists	Catholics	Protestants	Atheists
Demographics:							
Female	.472	.500	493	.374	.520	.539	.459
	(.499)	(.500)	(.500)	(.484)	(.501)	(.499)	(.498)
Age	43.59	43.49	43.80	44.48	42.78	44.26	42.55
	(10.60)	(10.66)	(10.90)	(9.758)	(11.45)	(10.93)	(10.50)
Number of Children	1.324	1.417	1.379	.979	1.506	1.565	1.320
	(1.130)	(1.172)	(1.160)	(1.076)	(1.125)	(1.042)	(1.010)
Marital Status:							
Single	.239	.233	.225	.270	.287	.178	.257
	(.426)	(.423)	(.417)	(.444)	(.454)	(.383)	(.437)
Married	.628	.656	.659	.550	.640	.706	.581
	(.483)	(.475)	(.474)	(.498)	(.482)	(.456)	(.493)
Divorced	.110	.086	.091	.162	.069	.079	.144
	(.313)	(.280)	(.288)	(.368)	(.254)	(.270)	(.351)
Widowed	.023	.025	.026	.018	.004	.036	.018
	(.150)	(.158)	(.158)	(.133)	(.066)	(.187)	(.132)
Residence:							
Distance to Nearest City:							
less than 10 km	.356	.332	.361	.443	.252	.247	.340
	(.479)	(.471)	(.480)	(.497)	(.436)	(.432)	(.474)
10 km to 40 km	.432	.451	.435	.427	.357	.438	.404
	(.495)	(.498)	(.496)	(.495)	(.481)	(.497)	(.491)
more than 40 km	.212	.217	.203	.130	.391	.315	.256
	(.408)	(.412)	(.403)	(.337)	(.490)	(.465)	(.437)
County's Official Religion in 1624:							
Protestant	.574	.289	.646	.527	.549	.849	.892
	(.495)	(.453)	(.478)	(.499)	(.499)	(.358)	(.311)
Catholic	.280	.504	.216	.279	.405	.076	.065
	(.449)	(.500)	(.412)	(.449)	(.492)	(.266)	(.246)
Mixed	.147	.208	.138	.194	.045	.075	.044
	(.354)	(.406)	(.345)	(.395)	(.208)	(.263)	(.205)
Economic Outcomes:							
Net Wealth (EUR)	98,900	117,500	116,700	117,200	60,400	60,600	33,700
	(388,000)	(433,000)	(309,100)	(626,400)	(82,100)	(103,200)	(73,900)
Employed Full-Time	.599	.577	.560	.705	.523	.577	.618
	(.416)	(.436)	(.424)	(.381)	(.409)	(.403)	(.386)
Labor Income (EUR)	2,303	2,325	2,344	2,963	1,792	1,696	1,798
	(1,715)	(1,731)	(1,782)	(2,043)	(1,207)	(980)	(1,099)
Hours Worked	37.34	35.47	35.99	39.71	38.92	38.29	40.19
	(12.62)	(13.46)	(13.19)	(11.27)	(12.41)	(11.36)	(10.68)
Hourly Earnings (EUR)	14.92	15.57	15.58	18.04	11.22	11.24	11.13
	(9.57)	(8.74)	(11.54)	(9.79)	(5.50)	(6.37)	(5.81)
Self-Employed	.062	.053	.063	.079	.051	.075	.059
	(.201)	(.188)	(.201)	(.224)	(.181)	(.217)	(.196)
Desired Hours of Work	34.10	32.38	33.00	35.37	35.39	35.31	37.21
	(9.65)	(10.81)	(10.19)	(8.57)	(8.03)	(7.93)	(6.69)
Educational Attainment:							
Drop Out	.013	.018	.018	.010	.000	.006	.004
	(.115)	(.132)	(.134)	(.100)	(.000)	(.080)	(.065)
Lower Secondary School	.339	.427	.401	.329	.204	.155	.151
	(.473)	(.495)	(.490)	(.470)	(.405)	(.362)	(.358)
Intermediate Secondary School	.332	.266	.261	.285	.464	.520	.544
	(.471)	(.442)	(.439)	(.451)	(.501)	(.500)	(.498)
Academic Secondary School	.107	.108	.126	.137	.114	.080	.056
	(.309)	(.311)	(.329)	(.344)	(.318)	(.272)	(.230)
University Degree	.202	.170	.190	.230	.219	.237	.240
	(.401)	(.376)	(.392)	(.421)	(.415)	(.425)	(.427)
Other	.007	.010	.006	.009	.000	.002	.005
	(.086)	(.102)	(.078)	(.096)	(.000)	(.040)	(.067)
Years of Schooling	12.35	12.14	12.28	12.67	12.39	12.45	12.48
	(2.55)	(2.58)	(2.68)	(2.70)	(2.03)	(2.12)	(2.22)
Religion of Parents:							
Father:							
Catholic	.377	.862	.119	.304	.802	.046	.049
	(.485)	(.345)	(.324)	(.460)	(.400)	(.209)	(.216)
Protestant	.456	.120	.831	.519	.142	.783	.248
	(.498)	(.325)	(.375)	(.500)	(.351)	(.413)	(.432)
Atheist	.155	.015	.036	.139	.056	.153	.700
	(.362)	(.122)	(.186)	(.346)	(.231)	(.361)	(.459)
Mother:							
Catholic	.376	.928	.073	.300	.851	.014	.040
	(.484)	(.258)	(.260)	(.458)	(.357)	(.118)	(.196)
Protestant	.481	.063	.902	.569	.101	.872	.304
	(.500)	(.243)	(.298)	(.495)	(.303)	(.335)	(.460)
Atheist	.135	.006	.021	.100	.047	.111	.651
	(.342)	(.076)	(.145)	(.299)	(.214)	(.315)	(.477)
Number of Observations	13,411	3,785	3,742	1,908	194	798	2,984

Notes: Entries are weighted means and standard deviations of individual level data for those individuals with non-missing information. See the Data Appendix for the precise definition and source of each variable.

Table 2: OLS Estimates of the Correlation between Religion and Work Related Outcomes

	Hours Worked						Log Hourly Wages						Log Labor Income					
Independent Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
Individual's Religion:																		
Protestant	.709	.600	.553	.539	.579	.454	-.035	.003	.001	-.001	-.010	-.001	-.015	.017	.012	.010	.005	-.001
	(.349)	(.351)	(.315)	(.313)	(.319)	(.331)	(.015)	(.014)	(.014)	(.014)	(.014)	(.014)	(.023)	(.023)	(.022)	(.022)	(.022)	(.023)
Atheist	4.403	3.808	2.292	2.231	2.213	2.059	-.100	.108	.073	.066	.051	.059	.068	.245	.162	.151	.133	.131
	(.323)	(.365)	(.324)	(.327)	(.350)	(.362)	(.021)	(.017)	(.017)	(.017)	(.018)	(.017)	(.024)	(.025)	(.023)	(.024)	(.025)	(.025)
East German		1.167	1.983	2.231	1.978	.665		-.409	-.384	-.376	-.351	-.249		-.348	-.300	-.287	-.270	-.219
		(.336)	(.361)	(.327)	(.387)	(.625)		(.020)	(.020)	(.019)	(.019)	(.025)		(.022)	(.024)	(.023)	(.022)	(.036)
Female			-12.521	-12.522	-12.522	-12.496			-.242	-.242	-.244	-.244			-.648	-.649	-.651	-.650
			(.395)	(.395)	(.395)	(.393)			(.012)	(.012)	(.012)	(.012)			(.023)	(.023)	(.023)	(.023)
Age:																		
30 to 40			-.476	-.433	-.414	-.357			.148	.150	.150	.155			.104	.109	.109	.116
			(.494)	(.492)	(.495)	(.498)			(.017)	(.017)	(.017)	(.017)			(.027)	(.027)	(.028)	(.027)
40 to 50			-.090	-.021	-.021	.038			.195	.198	.198	.206			.153	.159	.159	.168
			(.497)	(.496)	(.495)	(.498)			(.018)	(.017)	(.017)	(.017)			(.028)	(.029)	(.029)	(.029)
50 to 60			-1.386	-1.307	-1.304	-1.244			.185	.189	.186	.197			.113	.120	.118	.130
			(.499)	(.495)	(.495)	(.501)			(.018)	(.018)	(.018)	(.018)			(.029)	(.029)	(.029)	(.029)
> 60			-5.769	-5.630	-5.687	-5.637			.150	.154	.145	.155			-.091	-.085	-.095	-.086
			(.819)	(.815)	(.811)	(.812)			(.025)	(.025)	(.025)	(.024)			(.048)	(.047)	(.046)	(.046)
Distance to Nearest City:																		
10 km to 40 km				-.723	-.212	-.113				-.017	.034	.032				-.045	.024	.028
				(.324)	(.373)	(.383)				(.015)	(.015)	(.014)				(.021)	(.022)	(.021)
> 40 km				-.650	-.074	-.118				-.075	.001	-.000				-.116	-.020	-.023
				(.359)	(.428)	(.429)				(.019)	(.018)	(.018)				(.027)	(.027)	(.026)
Constant	35.57	35.53	42.632	43.01	42.866	42.656	2.628	2.639	2.608	2.630	1.193	1.387	7.483	7.493	7.723	7.763	6.365	6.329
	(.257)	(.255)	(.546)	(.592)	(8.039)	(9.107)	(.011)	(.011)	(.017)	(.020)	(.400)	(.435)	(.017)	(.017)	(.032)	(.035)	(.548)	(.575)
County Level Controls	No	No	No	No	Yes	Yes	No	No	No	No	Yes	Yes	No	No	No	No	Yes	Yes
State Fixed Effects	No	No	No	No	No	Yes	No	No	No	No	No	Yes	No	No	No	No	No	Yes
R-Squared	.024	.025	.276	.277	.279	.282	.007	.103	.184	.187	.199	.212	.003	.031	.229	.232	.239	.246
Number of Observations	13,278	13,278	13,278	13,278	13,278	13,278	12,993	12,993	12,993	12,993	12,993	12,993	13,124	13,124	13,124	13,124	13,124	13,124

Notes: Entries are coefficients and standard errors from estimating equation (1) by weighted least squares. The respective dependent variables are listed at the top of each column. Heteroskedasticity robust standard errors are clustered by county and reported in parentheses. In addition to the variables shown in the table, indicator variables for missing values on each covariate are also included in the regressions. See the Data Appendix for the precise definition and source of each variable.

Table 3: Territories' Religion in 1624 and Protestantism Today

	Protestant					
Independent Variable	(1)	(2)	(3)	(4)	(5)	(6)
County's Religion in 1624:						
Protestant	.159	.251	.252	.258	.239	.198
	(.032)	(.036)	(.036)	(.032)	(.033)	(.035)
Mixed	.061	.066	.067	.075	.078	.050
	(.032)	(.036)	(.036)	(.034)	(.033)	(.029)
East German		-.316	-.316	-.320	-.297	-.227
		(.026)	(.026)	(.025)	(.024)	(.025)
Female			.038	.039	.038	.042
			(.010)	(.010)	(.010)	(.010)
Age:						
30 to 40			-.032	-.034	-.035	-.037
			(.022)	(.022)	(.022)	(.021)
40 to 50			-.039	-.041	-.038	-.032
			(.022)	(.022)	(.021)	(.020)
50 to 60			-.022	-.024	-.023	-.019
			(.022)	(.022)	(.022)	(.020)
> 60			.026	.026	.025	.027
			(.028)	(.028)	(.027)	(.026)
Distance to Nearest City:						
10 km to 40 km				.027	.008	.012
				(.022)	(.024)	(.018)
> 40 km				.044	.025	.016
				(.026)	(.025)	(.022)
Constant	.247	.267	.272	.244	-1.006	-.957
	(.025)	(.027)	(.036)	(.035)	(.563)	(.502)
County Level Controls	No	No	No	No	Yes	Yes
State Fixed Effects	No	No	No	No	No	Yes
R-Squared	.022	.092	.095	.097	.111	.146
Number of Observations	13,411	13,411	13,411	13,411	13,411	13,411

Notes: Entries are coefficients and standard errors from estimating equation (2) by weighted least squares. Heteroskedasticity robust standard errors are clustered by county and reported in parentheses. In addition to the variables shown in the table, indicator variables for missing values on each covariate are also included in the regressions. See the Data Appendix for the precise definition and source of each variable.

Table 4: Reduced Form Estimates of the Effect of Religion on Work Related Outcomes

	Hours Worked						Log Hourly Wages						Log Labor Income					
Independent Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
County's Religion in 1624:																		
Protestant	1.975	1.137	1.148	1.133	1.212	1.194	-.125	-.026	-.031	-.034	-.041	-.026	-.039	.024	.018	.014	.006	.011
	(.391)	(.383)	(.360)	(.345)	(.332)	(.367)	(.023)	(.019)	(.020)	(.019)	(.017)	(.017)	(.028)	(.028)	(.029)	(.027)	(.023)	(.023)
Mixed	.536	.499	.463	.393	.315	.475	-.014	-.009	-.016	-.024	-.030	-.013	.014	.017	.009	-.003	-.014	.011
	(.540)	(.505)	(.467)	(.447)	(.418)	(.414)	(.029)	(.025)	(.025)	(.024)	(.022)	(.024)	(.039)	(.038)	(.038)	(.036)	(.032)	(.033)
East German		2.862	2.800	2.838	2.735	1.537		-.338	-.332	-.327	-.307	-.219		-.216	-.214	-.206	-.196	-.154
		(.324)	(.337)	(.344)	(.383)	(.646)		(.018)	(.017)	(.017)	(.016)	(.023)		(.020)	(.019)	(.019)	(.019)	(.033)
Female			-12.666	-12.664	-12.664	-12.630			-.247	-.247	-.248	-.248			-.659	-.659	-.660	-.154
			(.397)	(.397)	(.396)	(.397)			(.012)	(.012)	(.012)	(.012)			(.023)	(.023)	(.023)	(.033)
Age:																		
30 to 40			-.357	-.308	-.289	-.238			.153	.155	.155	.159			.114	.119	.119	.124
			(.492)	(.491)	(.494)	(.496)			(.017)	(.017)	(.017)	(.017)			(.027)	(.027)	(.027)	(.027)
40 to 50			.013	.089	.080	.147			.200	.204	.203	.210			.162	.169	.168	.176
			(.500)	(.500)	(.498)	(.500)			(.018)	(.018)	(.017)	(.017)			(.029)	(.029)	(.029)	(.029)
50 to 60			-1.305	-1.216	-1.225	-1.151			.191	.195	.191	.200			.121	.128	.126	.136
			(.499)	(.495)	(.494)	(.500)			(.018)	(.018)	(.018)	(.018)			(.030)	(.029)	(.029)	(.029)
> 60			-5.723	-5.659	-5.720	-5.655			.151	.155	.146	.154			-.094	-.086	-.096	-.089
			(.812)	(.808)	(.802)	(.806)			(.025)	(.025)	(.024)	(.024)			(.048)	(.047)	(.046)	(.045)
Distance to Nearest City:																		
10 km to 40 km				-.782	-.150	-.046				-.023	.032	.033				-.053	.024	.031
				(.340)	(.380)	(.387)				(.015)	(.014)	(.014)				(.022)	(.022)	(.021)
> 40 km				-.844	-.097	-.097				-.084	-.002	-.003				-.132	-.024	-.025
				(.371)	(.433)	(.434)				(.019)	(.018)	(.018)				(.028)	(.027)	(.026)
Constant	36.127	35.934	42.687	43.112	42.683	41.635	2.655	2.677	2.639	2.666	1.199	1.392	7.522	7.536	7.750	7.797	6.382	6.314
	(.328)	(.303)	(.535)	(.589)	(8.270)	(9.277)	(.015)	(.014)	(.021)	(.023)	(.403)	(.442)	(.022)	(.022)	(.033)	(.037)	(.566)	(.593)
County Level Controls	No	No	No	No	Yes	Yes	No	No	No	No	Yes	Yes	No	No	No	No	Yes	Yes
State Fixed Effects	No	No	No	No	No	Yes	No	No	No	No	No	Yes	No	No	No	No	No	Yes
R-Squared	.005	.013	.273	.274	.277	.280	.016	.095	.181	.185	.198	.210	.001	.014	.222	.226	.234	.241
Number of Observations	13,278	13,278	13,278	13,278	13,278	13,278	12,993	12,993	12,993	12,993	12,993	12,993	13,124	13,124	13,124	13,124	13,124	13,124

Notes: Entries are coefficients and standard errors from estimating equation (3) by weighted least squares. The respective dependent variables are listed at the top of each column. Heteroskedasticity robust standard errors are clustered by county and reported in parentheses. In addition to the variables shown in the table, indicator variables for missing values on each covariate are also included in the regressions. See the Data Appendix for the precise definition and source of each variable.

Table 5: 2SLS Estimates of the Effect of Protestantism on Economic Outcomes

	Hours Worked						Log Hourly Wages						Log Labor Income					
Independent Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
Individual's Religion:																		
Protestant	3.648	3.167	3.553	3.482	4.334	4.870	-.100	-.017	-.013	-.012	-.026	-.026	.048	.107	.121	.119	.127	.125
	(.996)	(1.067)	(1.015)	(.978)	(1.151)	(1.773)	(.050)	(.050)	(.051)	(.048)	(.056)	(.072)	(.066)	(.070)	(.070)	(.066)	(.074)	(.096)
East German		1.810	2.284	2.391	1.949	-.277		-.315	-.306	-.301	-.283	-.219		-.229	-.207	-.195	-.197	-.192
		(.639)	(.660)	(.656)	(.719)	(.971)		(.030)	(.031)	(.030)	(.033)	(.039)		(.038)	(.039)	(.038)	(.041)	(.051)
Female			-14.575	-14.579	-14.570	-14.584			-.280	-.281	-.282	-.282			-.765	-.766	-.767	-.768
			(.387)	(.387)	(.386)	(.388)			(.014)	(.014)	(.013)	(.013)			(.024)	(.024)	(.024)	(.024)
Age:																		
30 to 40			-1.519	-1.440	-1.414	-1.438			.142	.146	.146	.150			.054	.061	.062	.065
			(.633)	(.632)	(.641)	(.644)			(.023)	(.023)	(.023)	(.023)			(.036)	(.037)	(.027)	(.036)
40 to 50			-.985	-.845	-.861	-.879			.193	.198	.201	.207			.100	.111	.112	.118
			(.632)	(.623)	(.639)	(.649)			(.024)	(.024)	(.024)	(.023)			(.039)	(.039)	(.039)	(.039)
50 to 60			-2.256	-2.093	-2.105	-2.081			.170	.176	.175	.181			.055	.068	.067	.073
			(.619)	(.618)	(.622)	(.634)			(.024)	(.024)	(.024)	(.024)			(.036)	(.036)	(.036)	(.036)
> 60			-5.562	-5.524	-5.596	-5.596			.141	.145	.138	.141			-.124	-.118	-.125	-.124
			(.946)	(.941)	(.927)	(.936)			(.032)	(.031)	(.031)	(.030)			(.058)	(.057)	(.056)	(.055)
Distance to Nearest City:																		
10 km to 40 km				-1.248	-.484	-.452				-.030	-.002	.022				-.079	-.011	.000
				(.400)	(.483)	(.479)				(.018)	(.021)	(.018)				(.027)	(.030)	(.028)
> 40 km				-.466	-.096	-.055				-.065	.022	.001				-.123	-.033	-.028
				(.533)	(.577)	(.576)				(.020)	(.024)	(.021)				(.033)	(.034)	(.033)
Constant	34.009	34.133	42.802	43.481	42.702	45.959	2.662	2.642	2.634	2.656	1.338	1.396	7.450	7.436	7.762	7.813	6.454	6.370
	(.545)	(.549)	(.735)	(.774)	(10.027)	(11.861)	(.026)	(.025)	(.032)	(.035)	(.465)	(.541)	(.036)	(.037)	(.049)	(.053)	(.650)	(.707)
County Level Controls	No	No	No	No	Yes	Yes	No	No	No	No	Yes	Yes	No	No	No	No	Yes	Yes
State Fixed Effects	No	No	No	No	No	Yes	No	No	No	No	No	Yes	No	No	No	No	No	Yes
First Stage F-Statistic	141.87	119.08	119.53	125.11	91.26	42.49	139.61	117.19	117.61	121.92	88.63	41.25	138.77	117.03	117.52	124.14	91.21	44.10
Number of Observations	8,418	8,418	8,418	8,418	8,418	8,418	8,244	8,244	8,244	8,244	8,244	8,244	8,345	8,345	8,345	8,345	8,345	8,345

Notes: Entries are coefficients and standard errors from estimating equation (1') by weighted two-stage least squares. The respective dependent variables are listed at the top of each column. Individuals' self-identified religion is instrumented for by the official religion in their county of residence in 1624. Heteroskedasticity robust standard errors are clustered by county and reported in parentheses. In addition to the variables shown in the table, indicator variables for missing values on each covariate are also included in the regressions. The sample has been restricted to individuals who self-identify as Protestant or Catholic. See the Data Appendix for the precise definition and source of each variable.

Table 6A: Sensitivity Analysis of Reduced Form Estimates

Specification / Sample	Hours Worked	Log Hourly Wages	Log Labor Income
Controls:			
Baseline Individual Controls	1.133	-.034	.014
	(.344)	(.019)	(.027)
Baseline Individual Controls, Education	1.137	-.044	.033
	(.318)	(.016)	(.023)
Baseline Individual Controls, Education, Marital Status	1.145	-.043	.004
	(.306)	(.016)	(.023)
Baseline Individual Controls, Education, Marital Status, Number of Children	1.118	-.044	.003
	(.302)	(.016)	(.023)
Baseline Individual Controls, Education, Marital Status, Number of Children, Health	1.114	-.044	.002
	(.302)	(.016)	(.023)
Baseline Individual Controls, Education, Marital Status, Number of Children, Health, County Charateristics	1.268	-.047	.002
	(.288)	(.014)	(.019)
Baseline Individual Controls, Education, Marital Status, Number of Children, Health, County Charateristics, State Fixed Effects	1.248	-.024	.016
	(.342)	(.014)	(.020)
Sample:			
Wave N (1997), Age 20-55	.767	.016	.044
	(.776)	(.029)	(.033)
Unweighted	.742	-.023	.002
	(.266)	(.015)	(.020)
West Germans	1.161	-.023	.011
	(.405)	(.018)	(.025)
Protestant or Catholic Parents	1.037	-.026	-.005
	(.485)	(.021)	(.028)
By Gender:			
Males	1.035	-.032	.003
	(.460)	(.020)	(.029)
Females	1.240	-.027	.007
	(.589)	(.024)	(.039)
By Age:			
< 35	-.041	-.031	-.016
	(.769)	(.031)	(.047)
35 to 50	1.358	-.022	.016
	(.538)	(.024)	(.035)
> 50	1.847	-.040	.027
	(.739)	(.031)	(.047)
By Region:			
Northwest	1.308	-.021	.026
	(.589)	(.031)	(.040)
Southwest	.647	.009	.025
	(.565)	(.025)	(.033)

Notes: Entries are coefficients and standard errors on 'Protestant' from estimating the reduced form model, i.e. equation (3), by weighted least squares. Heteroskedasticity robust standard errors are clustered by county and reported in parentheses. The upper panel varies the set of covariates, with the respective controls indicated on the left of each row. The lower panel reports estimates for different subsets of the data (using the baseline individual and county level controls as well as state fixed effects). The respective sample restriction is indicated on the left of each row. All specifications include indicator variables for missing values on each covariate. See the Data Appendix for the precise definition and source of each variable.

Table 6B: Sensitivity Analysis of 2SLS Estimates

Specification / Sample	Hours Worked	Log Hourly Wages	Log Labor Income
Controls:			
Baseline Individual Controls	3.482	-.012	.119
	(.978)	(.048)	(.066)
Baseline Individual Controls, Education	3.296	-.037	.088
	(.925)	(.040)	(.057)
Baseline Individual Controls, Education, Marital Status	3.271	-.033	.091
	(.898)	(.040)	(.057)
Baseline Individual Controls, Education, Marital Status, Number of Children	3.227	-.033	.089
	(.895)	(.040)	(.056)
Baseline Individual Controls, Education, Marital Status, Number of Children, Health,	3.212	-.034	.085
	(.896)	(.040)	(.056)
Baseline Individual Controls, Education, Marital Status, Number of Children, Health, County Charateristics	4.184	-.041	.106
	(1.050)	(.047)	(.061)
Baseline Individual Controls, Education, Marital Status, Number of Children, Health, County Charateristics, State Fixed Effects	4.994	-.016	.141
	(1.697)	(.059)	(.084)
Sample:			
Wave N (1997), Age 20-55	2.407	.027	.100
	(3.287)	(.131)	(.140)
Unweighted	3.015	-.007	.117
	(1.204)	(.066)	(.085)
West Germans	4.903	-.042	.105
	(1.869)	(.076)	(.099)
Including Atheists	5.850	-.126	.046
	(2.264)	(.086)	(.112)
Protestant or Catholic Parents	4.134	-.101	-.032
	(2.221)	(.091)	(.117)
By Gender:			
Males	2.268	-.094	-.003
	(1.910)	(.088)	(.119)
Females	7.318	.011	.202
	(3.323)	(.111)	(.185)
By Age:			
< 35	-.088	-.090	.002
	(3.687)	(.164)	(.239)
35 to 50	4.820	.075	.166
	(2.395)	(.109)	(.159)
> 50	7.596	-.183	.145
	(3.229)	(.127)	(.172)
By Region:			
Northwest	5.155	-.074	.102
	(3.126)	(.123)	(.153)
Southwest	2.418	.031	.072
	(2.154)	(.105)	(.135)

Notes: Entries are coefficients and standard errors on 'Protestant' from estimating equation (1') by weighted two-stage least squares. Individuals' self-identified religion is instrumented for by the official religion in their county of residence in 1624. Heteroskedasticity robust standard errors are clustered by county and reported in parentheses. The sample has been restricted to individuals who self-identify as Protestant or Catholic, except when otherwise noted. The upper panel varies the set of covariates, with the respective controls indicated on the left of each row. The lower panel reports estimates for different subsets of the data (using the baseline individual and county level controls as well as state fixed effects). The respective sample restriction is indicated on the left of each row. All specifications include indicator variables for missing values on each covariate. See the Data Appendix for the precise definition and source of each variable.

Table 7: Additional Evidence on the Effects of Protestantism

A. Reduced Form Estimates

Outcome	without State Fixed Effects	with State Fixed Effects
Years of Education	.107	-.059
	(.117)	(.132)
College Graduate	.022	.013
	(.016)	(.018)
Contractual Hours of Work	.781	.534
	(.275)	(.305)
Desired Hours of Work	.701	.701
	(.254)	(.295)
Employed Full-Time | Female	.019	.026
	(.019)	(.021)
Self-Employed	.016	.016
	(.006)	(.007)

B. 2SLS Estimates

Outcome	without State Fixed Effects	with State Fixed Effects
Years of Education	.235	-.311
	(.345)	(.520)
College Graduate	.060	.037
	(.047)	(.070)
Contractual Hours of Work	3.020	2.655
	(.914)	(1.422)
Desired Hours of Work	2.777	3.047
	(.865)	(1.389)
Employed Full-Time | Female	.134	.201
	(.067)	(.114)
Self-Employed	.042	.059
	(.020)	(.036)

Notes: Entries are coefficients and standard errors on 'Protestant' from estimating the reduced form model by weighted least squares (upper panel), and equation (1') by two-stage least squares (lower panel). Estimates shown in the left column control for the baseline individual and county level covariates; and estimates shown in the right column also include state fixed effects. The respective dependent variable is indicated on the left of each row. Heteroskedasticity robust standard errors are clustered by county and reported in parentheses. All specifications include indicator variables for missing values on each covariate. See the Data Appendix for the precise definition and source of each variable.

Table 8: The Effect of Protestantism Controlling for Education, Time in Church, and a Proxy for Work Ethic

A. Reduced Form Estimates

Controls	Hours Worked	Log Hourly Wages	Log Labor Income
Baseline	1.194	-.026	.011
	(.367)	(.017)	(.023)
Baseline, Education	1.254	-.023	.017
	(.349)	(.014)	(.020)
Baseline, Time in Church	1.122	-.025	.010
	(.362)	(.017)	(.023)
Baseline, Desired Hours of Work	.563	-.031	-.017
	(.268)	(.017)	(.021)
Baseline, Desired Hours of Work,	.599	-.026	-.011
Education, Time in Church	(.254)	(.014)	(.018)

B. 2SLS Estimates

Controls	Hours Worked	Log Hourly Wages	Log Labor Income
Baseline	4.870	-.026	.125
	(1.773)	(.072)	(.096)
Baseline, Education	4.999	-.014	.144
	(1.743)	(.060)	(.085)
Baseline, Time in Church	4.751	-.014	.134
	(1.807)	(.075)	(.099)
Baseline, Desired Hours of Work	2.068	-.047	-.003
	(1.178)	(.074)	(.087)
Baseline, Desired Hours of Work,	2.209	-.027	.025
Education, Time in Church	(1.147)	(.064)	(.075)

Notes: Entries are coefficients and standard errors on 'Protestant' from estimating the reduced form model by weighted least squares (upper panel), and equation (1') by two-stage least squares (lower panel). The respective dependent variable is indicated at the top of each column, and the set of included controls is listed on left of each row. The set of 'baseline' controls includes all individual and county level covariates as well as state fixed effects. Heteroskedasticity robust standard errors are clustered by county and reported in parentheses. All specifications include indicator variables for missing values on each covariate. See the Data Appendix for the precise definition and source of each variable.

Table A.1: Present Day Counties and Official Religion of the Corresponding Territory in the Aftermath of the Peace of Augsburg

County:	Territory's Official Religion 1555	1624
Baden-Württemberg:		
Stuttgart	Protestant	Protestant
Böblingen	Protestant	Protestant
Esslingen	Protestant	Protestant
Göppingen	Protestant	Protestant
Ludwigsburg	Protestant	Protestant
Rems-Murr-Kreis	Protestant	Protestant
Heilbronn	Protestant	Protestant
Heilbronn	Protestant	Protestant
Hohenlohekreis	Protestant	Protestant
Schwäbisch Hall	Protestant	Protestant
Main-Tauber-Kreis	mixed	mixed
Heidenheim	Protestant	Protestant
Ostalbkreis	mixed	mixed
Baden-Baden	mixed	Catholic
Karlsruhe	Protestant	Protestant
Karlsruhe	Protestant	Protestant
Rastatt	mixed	mixed
Heidelberg	Protestant	Protestant
Mannheim	Protestant	Protestant
Neckar-Odenwald-Kreis	Protestant	Protestant
Rhein-Neckar-Kreis	Protestant	Protestant
Pforzheim	Protestant	Protestant
Calw	Protestant	Protestant
Enzkreis	Protestant	Protestant
Freudenstadt	Protestant	Protestant
Freiburg im Breisgau	Catholic	Catholic
Breisgau-Hochschwarzwald	Catholic	Catholic
Emmendingen	Protestant	Protestant
Ortenaukreis	Catholic	Catholic
Rottweil	Catholic	Catholic
Schwarzwald-Baar-Kreis	mixed	mixed
Tuttlingen	Catholic	Catholic
Konstanz	mixed	Catholic
Lörrach	Protestant	Catholic
Waldshut	Catholic	Catholic
Reutlingen	Protestant	Protestant
Tübingen	Protestant	Protestant
Zollernalbkreis	Catholic	Catholic
Ulm	Protestant	Protestant
Alb-Donau-Kreis	Protestant	Protestant
Biberach	mixed	mixed
Bodenseekreis	Catholic	Catholic
Ravensburg	Catholic	Catholic
Sigmaringen	Catholic	Catholic
Bavaria:		
Ingolstadt, Stadt	Catholic	Catholic
München, Landeshauptstadt	Catholic	Catholic
Rosenheim, Stadt	Catholic	Catholic
Altötting	Catholic	Catholic
Berchtesgadener Land	Catholic	Catholic
Bad Tölz-Wolfratshausen	Catholic	Catholic
Dachau	Catholic	Catholic
Ebersberg	Catholic	Catholic
Eichstätt	Catholic	Catholic
Erding	Catholic	Catholic
Freising	Catholic	Catholic
Fürstenfeldbruck	Catholic	Catholic
Garmisch-Partenkirchen	Catholic	Catholic
Landsberg am Lech	Catholic	Catholic
Miesbach	Catholic	Catholic
Mühldorf a.Inn	Catholic	Catholic
München	Catholic	Catholic
Neuburg-Schrobenhausen	mixed	mixed
Pfaffenhofen a.d.Ilm	Catholic	Catholic
Rosenheim	Catholic	Catholic
Starnberg	Catholic	Catholic
Traunstein	Catholic	Catholic
Weilheim-Schongau	Catholic	Catholic
Landshut, Stadt	Catholic	Catholic
Passau, Stadt	Catholic	Catholic
Straubing, Stadt	Catholic	Catholic
Deggendorf	Catholic	Catholic
Freyung-Grafenau	Catholic	Catholic
Kelheim	Catholic	Catholic
Landshut	Catholic	Catholic
Passau	Catholic	Catholic
Regen	Catholic	Catholic
Rottal-Inn	Catholic	Catholic
Straubing-Bogen	Catholic	Catholic
Dingolfing-Landau	Catholic	Catholic
Amberg, Stadt	Protestant	mixed
Regensburg, Stadt	Protestant	Protestant
Weiden i.d.OPf., Stadt	Protestant	mixed
Amberg-Sulzbach	Protestant	mixed
Cham	Protestant	mixed
Neumarkt i.d.OPf.	Protestant	mixed
Neustadt a.d.Waldnaab	Protestant	mixed
Regensburg	mixed	mixed
Schwandorf	Protestant	mixed
Tirschenreuth	Protestant	mixed
Bamberg, Stadt	Catholic	Catholic
Bayreuth, Stadt	Protestant	Protestant
Coburg, Stadt	Protestant	Protestant
Hof, Stadt	Protestant	Protestant
Bamberg	Catholic	Catholic
Bayreuth	Protestant	Protestant
Coburg	Protestant	Protestant
Forchheim	Catholic	Catholic
Hof	Protestant	Protestant
Kronach	Protestant	Protestant
Kulmbach	Protestant	Protestant
Lichtenfels	Catholic	Catholic
Wunsiedel i.Fichtelgebirge	Protestant	Protestant
Ansbach, Stadt	Protestant	Protestant
Erlangen, Stadt	Protestant	Protestant
Fürth, Stadt	Protestant	Protestant
Nürnberg, Stadt	Protestant	Protestant
Schwabach, Stadt	Protestant	Protestant
Ansbach	Protestant	Protestant
Erlangen-Höchstadt	Protestant	Protestant
Fürth	Protestant	Protestant
Nürnberger Land	Protestant	Protestant
Neustadt a.d.Aisch-Bad Windsheir	Protestant	Protestant
Roth	Protestant	Protestant
Weissenburg-Gunzenhausen	Protestant	Protestant
Aschaffenburg, Stadt	Catholic	Catholic
Schweinfurt, Stadt	Protestant	Protestant
Würzburg, Stadt	Catholic	Catholic
Aschaffenburg	Catholic	Catholic
Bad Kissingen	Catholic	Catholic
Rhön-Grabfeld	Catholic	Catholic
Hassberge	Catholic	Catholic
Kitzingen	Catholic	Catholic
Miltenberg	Catholic	Catholic
Main-Spessart	Catholic	Catholic
Schweinfurt	Catholic	Catholic
Würzburg	Catholic	Catholic
Augsburg, Stadt	Protestant	mixed
Kaufbeuren, Stadt	mixed	mixed
Kempten (Allgäu), Stadt	Protestant	Protestant
Memmingen, Stadt	Protestant	Protestant

Table A.1 (continued)

County:	Territory's Official Religion 1555	1624
Aichach-Friedberg	Catholic	Catholic
Augsburg	Catholic	Catholic
Dillingen a.d.Donau	Catholic	Catholic
Günzburg	Catholic	Catholic
Bremen:		
Bremen, Stadt	Protestant	Protestant
Bremerhaven, Stadt	Protestant	Protestant
Hanburg:		
Hamburg, Freie und Hansestadt	Protestant	Protestant
Hesse:		
Darmstadt, Wissenschaftsstadt	Protestant	Protestant
Frankfurt am Main, Stadt	Protestant	Protestant
Offenbach am Main, Stadt	Protestant	Protestant
Wiesbaden, Landeshauptstadt	Protestant	Protestant
Bergstrasse	Protestant	Catholic
Darmstadt-Dieburg	Protestant	Protestant
Gross-Gerau	Protestant	Protestant
Hochtaunuskreis	Protestant	Protestant
Main-Kinzig-Kreis	Protestant	Protestant
Main-Taunus-Kreis	mixed	mixed
Odenwaldkreis	Protestant	Protestant
Offenbach	Protestant	Protestant
Rheingau-Taunus-Kreis	mixed	mixed
Wetteraukreis	Protestant	Protestant
Giessen	Protestant	Protestant
Lahn-Dill-Kreis	Protestant	Protestant
Limburg-Weilburg	Protestant	Protestant
Marburg-Biedenkopf	Protestant	Protestant
Vogelsbergkreis	Protestant	Protestant
Kassel, Stadt	Protestant	Protestant
Fulda	Catholic	Catholic
Hersfeld-Rotenburg	Protestant	Catholic
Kassel	Protestant	Protestant
Schwalm-Eder-Kreis	Protestant	Protestant
Waldeck-Frankenberg	Protestant	Protestant
Werra-Meissner-Kreis	Protestant	Protestant
Lower Saxony:		
Braunschweig, Stadt	Protestant	Protestant
Salzgitter, Stadt	Catholic	Protestant
Wolfsburg, Stadt	Protestant	Protestant
Gifhorn	Protestant	Protestant
Göttingen	Protestant	Protestant
Goslar	Protestant	Protestant
Helmstedt	Catholic	Protestant
Northeim	Protestant	Protestant
Osterode am Harz	Protestant	Protestant
Peine	mixed	Protestant
Wolfenbüttel	Catholic	Protestant
Hannover, Stadt	Protestant	Protestant
Region Hannover	Catholic	Protestant
Diepholz	Protestant	Protestant
Hameln-Pyrmont	Catholic	Protestant
Hannover, Land	Catholic	Catholic
Hildesheim	mixed	Catholic
Holzminden	Catholic	Protestant
Nienburg (Weser)	Catholic	Protestant
Schaumburg	Catholic	Protestant
Celle	Protestant	Protestant
Cuxhaven	Protestant	Protestant
Harburg	Protestant	Protestant
Lüchow-Dannenberg	Protestant	Protestant
Lüneburg	Protestant	Protestant
Osterholz	Protestant	Protestant
Rotenburg (Wümme)	Protestant	Protestant
Soltau-Fallingbostel	Protestant	Protestant
Stade	Protestant	Protestant

County:	Territory's Official Religion 1555	1624
Uelzen	Protestant	Protestant
Verden	Protestant	Protestant
Delmenhorst, Stadt	Catholic	Protestant
Emden, Stadt	Protestant	Protestant
Oldenburg (Oldenburg), Stadt	Protestant	Protestant
Osnabrück, Stadt	mixed	Catholic
Wilhelmshaven, Stadt	Protestant	Protestant
Ammerland	Protestant	Protestant
Aurich	Protestant	Protestant
Cloppenburg	Protestant	Protestant
Emsland	Protestant	Protestant
Friesland	Protestant	Protestant
Grafschaft Bentheim	Protestant	Protestant
Leer	Protestant	Protestant
Oldenburg	Protestant	Protestant
Osnabrück	mixed	Catholic
Vechta	Protestant	Protestant
Wesermarsch	Protestant	Protestant
Wittmund	Protestant	Protestant
North Rhine-Westphalia:		
Düsseldorf, Stadt	mixed	mixed
Duisburg, Stadt	mixed	mixed
Essen, Stadt	mixed	mixed
Krefeld, Stadt	Catholic	Catholic
Mönchengladbach, Stadt	Catholic	Catholic
Mülheim an der Ruhr, Stadt	mixed	mixed
Oberhausen, Stadt	mixed	mixed
Remscheid, Stadt	mixed	mixed
Solingen, Stadt	mixed	mixed
Wuppertal, Stadt	mixed	mixed
Kleve	mixed	mixed
Mettmann	mixed	mixed
Rhein-Kreis Neuss	Catholic	Catholic
Viersen	mixed	mixed
Wesel	mixed	mixed
Aachen, Stadt	Catholic	Catholic
Bonn, Stadt	Catholic	Catholic
Köln, Stadt	Catholic	Catholic
Leverkusen, Stadt	Catholic	Catholic
Aachen	Catholic	Catholic
Düren	mixed	mixed
Rhein-Erft-Kreis	Catholic	Catholic
Euskirchen	mixed	mixed
Heinsberg	mixed	mixed
Oberbergischer Kreis	mixed	mixed
Rheinisch-Bergischer Kreis	mixed	mixed
Rhein-Sieg-Kreis	mixed	mixed
Bottrop, Stadt	mixed	mixed
Gelsenkirchen, Stadt	mixed	mixed
Münster, Stadt	mixed	Catholic
Borken	Catholic	Catholic
Coesfeld	Catholic	Catholic
Recklinghausen	Catholic	Catholic
Steinfurt	Catholic	Catholic
Warendorf	Catholic	Catholic
Bielefeld, Stadt	mixed	Protestant
Gütersloh	Catholic	Catholic
Herford	mixed	Protestant
Höxter	Catholic	Catholic
Lippe	Protestant	Protestant
Minden-Lübbecke	Protestant	Protestant
Paderborn	Catholic	Catholic
Bochum, Stadt	mixed	mixed
Dortmund, Stadt	mixed	mixed
Hagen, Stadt	mixed	mixed
Hamm, Stadt	mixed	mixed

Table A.1 (continued)

County:	Territory's Official Religion 1555	1624
Herne, Stadt	mixed	mixed
Ennepe-Ruhr-Kreis	mixed	mixed
Hochsauerlandkreis	Catholic	Catholic
Märkischer Kreis	mixed	mixed
Olpe	mixed	mixed
Siegen-Wittgenstein	Protestant	Protestant
Soest	mixed	mixed
Unna	mixed	mixed
Rhineland-Palatinate:		
Koblenz, Stadt	Catholic	Catholic
Ahrweiler	Catholic	Catholic
Altenkirchen (Westerwald)	Catholic	Catholic
Bad Kreuznach	Protestant	Protestant
Birkenfeld	Protestant	Protestant
Cochem-Zell	Catholic	Catholic
Mayen-Koblenz	Catholic	Catholic
Neuwied	Catholic	Catholic
Rhein-Hunsrück-Kreis	Protestant	Protestant
Rhein-Lahn-Kreis	Catholic	Catholic
Westerwaldkreis	Catholic	Catholic
Trier, Stadt	Catholic	Catholic
Bernkastel-Wittlich	Catholic	Catholic
Bitburg-Prüm	Catholic	Catholic
Daun	Catholic	Catholic
Trier-Saarburg	Catholic	Catholic
Frankenthal (Pfalz), Stadt	Protestant	Protestant
Kaiserslautern, Stadt	Protestant	Protestant
Landau in der Pfalz, Stadt	Protestant	Protestant
Ludwigshafen am Rhein, Stadt	Protestant	Protestant
Mainz, Stadt	Catholic	Catholic
Neustadt a. d. Weinstrasse, Stadt	Protestant	Protestant
Pirmasens, Stadt	Protestant	Protestant
Speyer, Stadt	Protestant	Protestant
Worms, Stadt	Protestant	Protestant
Zweibrücken, Stadt	Protestant	Protestant
Alzey-Worms	Protestant	Protestant
Bad Dürkheim	Protestant	Protestant
Donnersbergkreis	Protestant	Protestant
Germersheim	Protestant	Protestant
Kaiserslautern	Protestant	Protestant
Kusel	Protestant	Protestant
Südliche Weinstrasse	Protestant	Protestant
Ludwigshafen	Protestant	Protestant
Mainz-Bingen	Catholic	Catholic
Südwestpfalz	Protestant	Protestant
Saarland:		
Stadtverband Saarbrücken	Protestant	Protestant
Merzig-Wadern	Catholic	Catholic
Neunkirchen	Protestant	Protestant
Saarlouis	Protestant	Protestant
Saarpfalz-Kreis	Protestant	Protestant
St. Wendel	Catholic	Catholic
Schleswig-Holstein:		
Flensburg, Stadt	Protestant	Protestant
Kiel, Landeshauptstadt	Protestant	Protestant
Lübeck, Hansestadt	Protestant	Protestant
Neumünster, Stadt	Protestant	Protestant
Dithmarschen	Protestant	Protestant
Herzogtum Lauenburg	Protestant	Protestant
Nordfriesland	Protestant	Protestant
Ostholstein	Protestant	Protestant
Pinneberg	Protestant	Protestant
Plön	Protestant	Protestant
Rendsburg-Eckernförde	Protestant	Protestant
Schleswig-Flensburg	Protestant	Protestant
Segeberg	Protestant	Protestant
Steinburg	Protestant	Protestant
Stormarn	Protestant	Protestant

Counties in the former German Democratic Republic:

Berlin:		
Berlin, Stadt	Protestant	Protestant
Brandenburg:		
Brandenburg an der Havel, Stadt	Protestant	Protestant
Cottbus, Stadt	Protestant	Protestant
Frankfurt (Oder), Stadt	Protestant	Protestant
Potsdam, Stadt	Protestant	Protestant
Barnim	Protestant	Protestant
Dahme-Spreewald	Protestant	Protestant
Elbe-Elster	Protestant	Protestant
Havelland	Protestant	Protestant
Märkisch-Oderland	Protestant	Protestant
Oberhavel	Protestant	Protestant
Oberspreewald-Lausitz	Protestant	Protestant
Oder-Spree	Protestant	Protestant
Ostprignitz-Ruppin	Protestant	Protestant
Potsdam-Mittelmark	Protestant	Protestant
Prignitz	Protestant	Protestant
Spree-Neisse	Protestant	Protestant
Teltow-Fläming	Protestant	Protestant
Uckermark	Protestant	Protestant
Mecklenburg-West Pomerania:		
Greifswald	Protestant	Protestant
Neubrandenburg	Protestant	Protestant
Rostock	Protestant	Protestant
Schwerin	Protestant	Protestant
Stralsund	Protestant	Protestant
Wismar	Protestant	Protestant
Bad Doberan	Protestant	Protestant
Demmin	Protestant	Protestant
Güstrow	Protestant	Protestant
Ludwigslust	Protestant	Protestant
Mecklenburg-Strelitz	Protestant	Protestant
Müritz	Protestant	Protestant
Nordvorpommern	Protestant	Protestant
Nordwestmecklenburg	Protestant	Protestant
Ostvorpommern	Protestant	Protestant
Parchim	Protestant	Protestant
Rügen	Protestant	Protestant
Uecker-Randow	Protestant	Protestant
Saxony:		
Chemnitz, Stadt	Protestant	Protestant
Plauen, Stadt	Protestant	Protestant
Zwickau, Stadt	Protestant	Protestant
Annaberg	Protestant	Protestant
Chemnitzer Land	Protestant	Protestant
Freiberg	Protestant	Protestant
Vogtlandkreis	Protestant	Protestant
Mittlerer Erzgebirgskreis	Protestant	Protestant
Mittweida	Protestant	Protestant
Stollberg	Protestant	Protestant
Aue-Schwarzenberg	Protestant	Protestant
Zwickauer Land	Protestant	Protestant
Dresden, Stadt	Protestant	Protestant
Görlitz, Stadt	Protestant	Protestant
Hoyerswerda, Stadt	Protestant	Protestant
Bautzen	mixed	mixed
Meissen	Protestant	Protestant
Niederschles. Oberlausitzkreis	Protestant	Protestant
Riesa-Grossenhain	Protestant	Protestant
Löbau-Zittau	Protestant	Protestant

Table A.1 (continued)

County:	Territory's Official Religion 1555	1624
Sächsische Schweiz	Protestant	Protestant
Weisseritzkreis	Protestant	Protestant
Kamenz	Protestant	Protestant
Leipzig, Stadt	Protestant	Protestant
Delitzsch	Protestant	Protestant
Döbeln	Protestant	Protestant
Leipziger Land	Protestant	Protestant
Muldentalkreis	Protestant	Protestant
Torgau-Oschatz	Protestant	Protestant
Saxony-Anhalt:		
Dessau, Stadt	Protestant	Protestant
Anhalt-Zerbst	Protestant	Protestant
Bernburg	Protestant	Protestant
Bitterfeld	Protestant	Protestant
Köthen	Protestant	Protestant
Wittenberg	Protestant	Protestant
Halle (Saale), Stadt	Protestant	Protestant
Burgenlandkreis	Protestant	Protestant
Mansfelder Land	Protestant	Protestant
Merseburg-Querfurt	Protestant	Protestant
Saalkreis	Protestant	Protestant
Sangerhausen	Protestant	Protestant
Weissenfels	Protestant	Protestant
Magdeburg, Landeshauptstadt	Protestant	Protestant
Aschersleben-Stassfurt	Protestant	Protestant
Bördekreis	Protestant	Protestant
Halberstadt	mixed	Protestant
Jerichower Land	Protestant	Protestant
Ohrekreis	Protestant	Protestant
Stendal	Protestant	Protestant
Quedlinburg	Protestant	Protestant
Schönebeck	Protestant	Protestant
Wernigerode	Protestant	Protestant
Altmarkkreis Salzwedel	Protestant	Protestant
Thuringia:		
Erfurt, Stadt	mixed	mixed
Gera, Stadt	Protestant	Protestant
Jena, Stadt	Protestant	Protestant
Suhl, Stadt	Protestant	Protestant
Weimar, Stadt	Protestant	Protestant
Eisenach, Stadt	Protestant	Protestant
Eichsfeld	mixed	Catholic
Nordhausen	Protestant	Protestant
Wartburgkreis	Protestant	Protestant
Unstrut-Hainich-Kreis	Protestant	Protestant
Kyffhäuserkreis	Protestant	Protestant
Schmalkalden-Meiningen	Protestant	Protestant
Gotha	Protestant	Protestant
Sömmerda	Protestant	Protestant
Hildburghausen	Protestant	Protestant
Ilm-Kreis	Protestant	Protestant
Weimarer Land	Protestant	Protestant
Sonneberg	Protestant	Protestant
Saalfeld-Rudolstadt	Protestant	Protestant
Saale-Holzland-Kreis	Protestant	Protestant
Saale-Orla-Kreis	Protestant	Protestant
Greiz	Protestant	Protestant
Altenburger Land	Protestant	Protestant

Notes: Entries are counties and county equivalents (sorted by state) and the official religion of the corresponding area in the reference year assigned to them by each mapping. The reference years of the mappings are 1555 and 1624, respectively. Section A in the Data Appendix describes the construction of the mappings.