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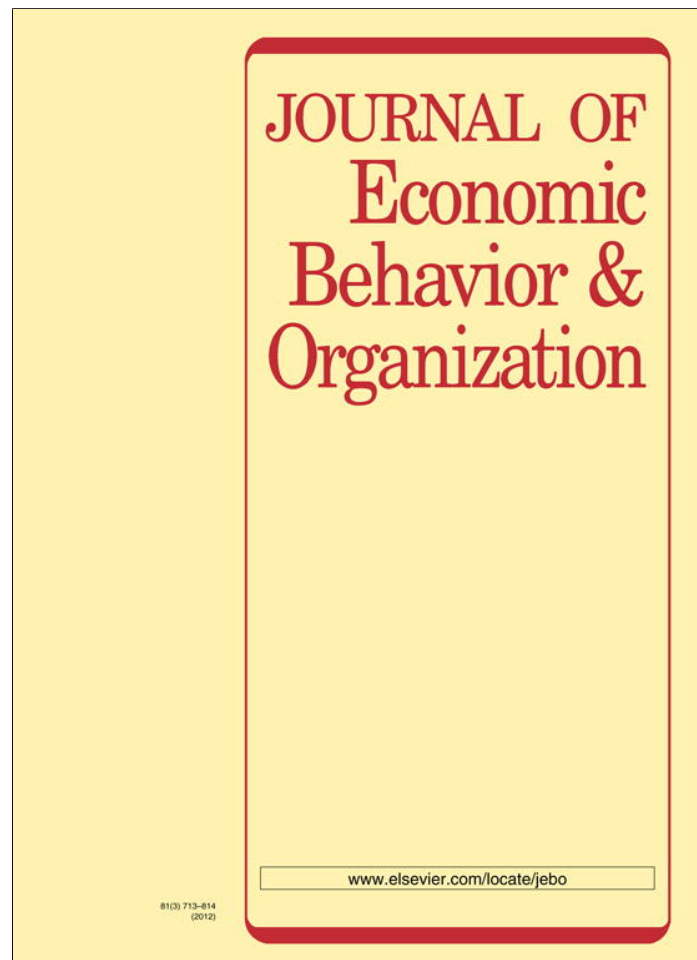
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Does a Protestant work ethic exist? Evidence from the well-being effect of unemployment



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ABSTRACT

Evidence on Weber's original thesis on a Protestant work ethic is ambiguous and relies on questionable measures of work attitudes. We test the relation between Protestantism and work attitudes using a novel method, operationalizing work ethic as the effect of unemployment on individuals' subjective well-being. Analyzing a sample of 150,000 individuals from 82 societies, we find strong support for a Protestant work ethic: unemployment hurts Protestants more and hurts more in Protestant societies. Whilst the results shed new light on the Protestant work ethic debate, the method has wider applicability in the analysis of attitudinal differences.

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1. Introduction

More than a century after its first publication, Max Weber's *The Protestant Ethic and the Spirit of Capitalism* (Weber, 1904/5 [1930]) continues to inspire social scientists in many disciplines. A large stream of work in the social sciences has built on Weber's idea that religious values explain social and economic developments (Tawney, 1926; Huntington, 1993; Landes, 1998; Harrison and Huntington, 2000; Barro and McCleary, 2003; Guiso et al., 2003, 2006; McCleary and Barro, 2006; Rupasingha and Chilton, 2009; Cavalcanti et al., 2007; Arruñada, 2010; Bettendorf and Dijkgraaf, 2010). Ironically, this research has so far failed to provide support for the thesis of Weber that originally inspired the literature. Though some of the results of McCleary and Barro (2006) suggest that Weber may have been right, the empirical link between Protestantism and a work ethic inducing economic development remains tenuous (Lehmann and Roth, 1993; Delacroix and Nielsen, 2001; Sanderson et al., 2011; see Iannaccone, 1998: 1474–1475).¹ Some researchers have even reported evidence that Protestants overall value work less than people from other religions do (Norris and Inglehart, 2004; Weil, 2009).

One reason for this lack of results may be the difficulties inherent in measuring values such as work ethic. Existing measures typically rely on values surveys, focusing on self-professed attitudes toward work, which suffer from a number of methodological problems, particularly social desirability bias and extreme sensitivity to fluctuating circumstances (Clarke et al., 1999; Bertrand and Mullainathan, 2001; Maseland and van Hoorn, 2009).

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¹ The few papers providing support for a link between Protestantism and economic prosperity focus on Protestantism's effects on literacy levels or on social control and institutional development, rather than on the prevalence of a Protestant work ethic (Becker and Woessmann, 2009; Arruñada, 2010).

In this paper, we test the “Weber thesis” using a novel method that provides a most direct measurement of people’s appreciation of work. Building on the rapidly developing literature on the economics of happiness or subjective well-being (SWB), our approach is to estimate inter-religious differences in the happiness loss caused by unemployment. If we find that unemployment has a stronger negative effect on SWB for Protestants or in Protestant societies, we interpret this as an indication that work matters more to Protestants.²

Analyzing a sample of almost 150,000 individuals from 82 societies, we thus find strong and robust support for the existence of a Protestant work ethic at both the individual and the societal level. Individual Protestants and historically Protestant societies appear to value work much more. The societal effect, meaning the effect of living in a Protestant society thereby dominates the individual effect of being Protestant. Robustness checks shows that the findings are not sensitive to different measures or driven by other factors such as differences in formal institutions related to social security. We conclude that the Weber thesis is confirmed; a Protestant work ethic exists.

2. Religion and work ethic: Weber’s thesis

Weber’s *The Protestant Ethic and the Spirit of Capitalism* has spawned an extensive and diverse literature dealing with the effects of religion and religious values on economic outcomes (e.g. Barro and McCleary, 2003; Guiso et al., 2006; McCleary and Barro, 2006; Bettendorf and Dijkgraaf, 2010). Some of this literature has retained Weber’s original focus on a Protestant work ethic. Other contributions have reworked the argument, applying it to Confucianism (Kahn, 1979; Harrison, 1992; Harrison and Huntington, 2000; Kim and Park, 2003) or non-religiously specified sets of values (e.g. Granato et al., 1996). Still others have retained the focus on Protestantism, while stressing other aspects than work ethic, such as literacy or social control (Becker and Woessmann, 2009; Arruñada, 2010). Finally, a growing body of research generalizes from Weber’s focus on religious values to assess the economic consequences of culture more broadly (Gorodnichenko and Roland, 2011; Guiso et al., 2006; Jellema and Roland, 2011). Throughout this literature, Weber’s work is generally referred to as the starting point for the debate about the link between religious culture and economic growth.

2.1. The Weber thesis theoretically

Before we delve into empirical tests of the Weber thesis, it pays to briefly go back to the original argument in *The Protestant Ethic*. The book establishes a historical relation between the emergence of capitalism as a dominant economic system in Western Europe and North America and the Protestant reformation centuries earlier. More in particular, Weber draws attention to the particular ascetic ethical system propagated in specific sub-denominations of Protestantism, namely Calvinism, Pietism, Methodism, and Baptism. Here originated the idea of a “calling,” a perception of one’s work and economic activity as God-given duty. The emphasis on worldly activity as a means to prove one’s faith in these strands of Protestantism eventually evolved, through a process of rationalization, into what Weber calls the “spirit of capitalism;” the idea that working for the purpose of profit is a moral good in itself. Weber writes:

“...one’s duty in a calling, is what is most characteristic of the social ethic of capitalistic culture, and is in a sense the fundamental basis of it. It is an obligation which the individual is supposed to feel and does feel towards the content of his professional activity, no matter in what it consists, in particular no matter whether it appears on the surface as a utilization of his personal powers. Or only of his material possessions (as capital).”

Weber (1904/5 [1930]: 19)

In contrast to what has become the “common interpretation” (Delacroix and Nielsen, 2001) of *The Protestant Ethic* (e.g. Granato et al., 1996; Becker and Woessmann, 2009; Weil, 2009; Sanderson et al., 2011), there is little in the original text to suggest that Weber claimed a causal relation between being Protestant and enjoying economic prosperity. Rather than that, he was trying to explain the initial origin of modern industrial capitalism in Northwest Europe and North America, relating it to a mindset that could be historically retraced to a specific religious ethics.³

A problem with this common interpretation is that it transforms Weber’s argument into two controversial theses rather than one, rendering testing difficult. First, it argues that Protestantism is associated with a strong work ethic, and second, it claims that a strong work ethic is a main determinant of economic growth and prosperity. Various authors have shown that the latter relation is not that straightforward, citing evidence that people in poor countries attach more importance to work than people in developed countries do (McCleary and Barro, 2006; Weil, 2009). Concerning the claim that a strong work ethic is a main determinant of economic growth and prosperity, it has been shown that the proliferation of this argument in the literature has often been informed more by desires to legitimize income differences than by fact-based explanations

² The same idea has been applied to study partisan differences in the psychic cost of inequality, inflation and unemployment and different preferences for equality between Europe and the US (Alesina et al., 2004; Di Tella and MacCulloch, 2005) and cultural values differences between East and West Germany (van Hoorn and Maseland, 2010).

³ Weber (1904/5 [1930]: 27) writes, for instance, that “the cultural consequences of the Reformation were to a great extent, perhaps in the particular aspects with which we are dealing predominantly, unforeseen and even unwished-for results of the labors of the reformers. They were often far removed from or even in contradiction to all that they themselves thought to attain.”

of income differences (Alatas, 1977). In this context, several authors have pointed out that inhabitants of some of the most rapidly growing economies after WWII – for example Japan, South Korea and Malaysia – have historically been viewed as lacking a strong work ethic (Alatas, 1977; Landes, 1998; Chang, 2007).

2.2. The Weber thesis empirically

The above concerns lead us to adopt a more limited focus here that is closer to the thesis originally advanced by Weber. We deal only with the relation between Protestantism and work ethic without going into possible effects on economic performance. Empirical investigations of the existence of a Protestant work ethic have come up with inconclusive or confusing findings (Furnham, 1984, 1990; Jones, 1997 provide overviews).

For example, Norris and Inglehart (2004) construct a multidimensional measure of work ethic using a selection of items from the World Values Survey (WVS) in order to investigate the Weber thesis. Contrary to their expectations, they find that people living in Protestant societies have a weaker work ethic than individuals from many other religious cultures do. Likewise, Arruñada (2010) investigates the effect of Protestantism on work ethic, measured, among others, as the number of hours worked. Empirical analysis of a sample of 19,246 individuals from 32 countries fails to deliver any support for a relation between Protestantism and his particular measure of work ethic.

The results of McCleary and Barro (2006) and Schaltegger and Torgler (2010) are more ambiguous. The former find a positive link between belief in hell and work ethic, with work ethic measured using a survey item asking people whether they think that valuing hard work is an important trait for children to learn. They subsequently conclude that Weber's thesis is confirmed because religious beliefs indeed turn out matter for work-related values. Weber spoke of a specific Protestant ethic and not a religious ethic in general, however, and the link between belief in hell and work ethic is not specific to Protestants.⁴ Schaltegger and Torgler (2010) consider a questionnaire item asking respondents whether work should always come first, even if it means less spare time, as included in the European Values Survey (EVS). They find that education and religiosity contribute more to work ethic among Protestants than among Catholics, which they interpret as support for the Weber thesis. However, their results also reveal a direct positive effect of Catholicism on work ethic, which goes directly against Weber's argument.

What the above studies have in common is that they are based on respondents' self-professed behavior or attitudes toward work, with lots of measurement error due to, for instance, social desirability bias (Clarke et al., 1999; Bertrand and Mullainathan, 2001; Maseland and van Hoorn, 2009). The failure of this literature to provide unambiguous evidence or clear support for the Weber thesis may be related to the lack of reliability of the measures used. For this reason, we develop an alternative measure of work ethic that is more firmly rooted in economic reasoning.

3. Measuring the work ethic

3.1. The well-being effects of unemployment

Economic theory posits that individuals are confronted with trade-offs between alternatives, each alternative bringing a certain amount of utility to the individual dependent on an individual's utility function. Instead of asking respondents to state which options they deem more utilitarian, an alternative route to measure differences in weights in people's utility functions would be to elicit directly the impact of various alternative outcomes on people's utility levels. For this, we need some kind of measure of "experienced utility" (Kahneman et al., 1997), i.e. the actual hedonic quality of an outcome. Absence of such a measure has long kept economists from exploring this option. Recently, however, the (psychological) literature on subjective well-being has provided a rough proxy for experienced utility. Subjective well-being or SWB refers to "a broad category of phenomena that includes people's emotional responses, domain satisfactions, and global judgments of life satisfaction" (Diener et al., 1999: 277). SWB is typically measured by simply asking people either how satisfied or happy with life they are. A large literature confirms the reliability and validity of these indicators of SWB (see, for example, Diener et al., 1999; Frey and Stutzer, 2002 and references therein). For sure, there are cultural effects in SWB ratings – individualist societies typically have higher mean SWB than collectivist societies, for example – but measures of SWB are comparable across societies (e.g. Diener and Suh, 2000; Helliwell and Wang, 2012). For instance, the evidence refutes that observed differences in SWB are due to language, desirability bias or unfamiliarity with the concept (Veenhoven, 2012).

Levels of SWB depend on a variety of factors. By comparing the level of well-being between groups experiencing different conditions, we are able to measure people's valuation of conditions. For instance, differences in SWB between groups of people have been used to assess the welfare effects of excise taxes on cigarettes (Gruber and Mullainathan, 2005) or the health-state dependence of the utility function (Finkelstein et al., 2009). In a similar manner, Alesina et al. (2004) reveal differences in the impact of inequality on well-being among Europeans relative to Americans, while Di Tella and MacCulloch (2005) provide evidence for partisan differences in the happiness effects of inflation and aggregate unemployment. van Hoorn and Maseland (2010) show differences in the valuation of economic outcomes and activities by East and West Germans.

⁴ McCleary and Barro (2006) also check the effect of religious denomination on economic growth, finding that a larger share of Protestants in society is associated with lower per-capita GDP growth.

We are interested in the impact of having a job on experienced utility, operationalized as SWB. There is a large literature in psychology showing and theoretically arguing that unemployment is associated with large psychic costs, even when its economic consequences are controlled for (Hayes and Nutman, 1981; Haring et al., 1984; Darity and Goldsmith, 1996; McKee-Ryan et al., 2005). This literature can be traced back to over two centuries ago (Fryer, 2001) – Eisenberg and Lazarsfeld (1938) is an early empirical study. In economics, Clark and Oswald (1994) analyze data from the British Household Panel and find that unemployed people have much lower levels of mental well-being than those in work. Similar results have been reported by Clark (2003) and Winkelmann and Winkelmann (1998), among others. What is more, it is clear that the effect runs from unemployment to SWB. Using longitudinal data, Clark et al. (2008) demonstrate that individuals who lose their job find their level of SWB decreasing substantially upon becoming unemployed, whilst they do not have lower SWB to begin with (see, also, Lucas et al., 2004). Finally, unemployment not only affects the well-being of the people losing their jobs, but also (i.e. simultaneously) has an indirect impact on the population as a whole (e.g. Di Tella et al., 2001; Di Tella and MacCulloch, 2005).

Although the negative effect of unemployment on SWB is a persistent result in the literature, the size of this effect has been shown to differ between groups of people. Notably, there is evidence that being unemployed is easier for people living in a region with high unemployment or for younger people (Clark and Oswald, 1994; Winkelmann and Winkelmann, 1998). Clark (2003) explains these results on basis of reference groups and social norms, arguing that the more common unemployment is among their peers, the weaker the stigma the unemployed suffer (see, also, Darity and Goldsmith, 1996). An alternative interpretation of these findings would be that causality (also) runs the other way around: groups of people for whom the psychic cost of unemployment are lower may be making less effort to find or keep jobs. Clark et al. (2010) report evidence that people experiencing greater falls in well-being due to unemployment indeed engage in job search with more intensity. All this supports the idea that lower psychic costs of unemployment are indicative of a weaker work ethic.

3.2. The Protestant work ethic and the value of having a job

If we define a work ethic as the importance attached to work, differences between groups in the size of the effects of unemployment on well-being may be interpreted as differences in work ethic. People attaching a lot of importance to work are hurt more by losing their job than people who find work unimportant.

Religion has been shown to affect these effect sizes. Apart from direct effects of religiosity on well-being (Ellison, 1995; Diener et al., 1999; Koenig and Larson, 2001; Pargament, 2002; Hackney and Sanders, 2003; DeZutter et al., 2006), there is evidence that the impact of economic factors on well-being differs between religious and non-religious groups. For instance, Clark and Lelkes (2005) suggest that religious beliefs shield against part of the negative well-being effects of stressors such as unemployment (see also Popova, 2009; Smith et al., 2003). Lelkes (2006) reports that the effect of economic variables including income on happiness is smaller among the religious than among the non-religious. Apparently, religious people value work and income less than non-believers do.

Our interest is not in the effect of religion per se, however, nor in factors that shield against the negative well-being effects of unemployment (or other stressors).⁵ Rather, given our aim of testing the Weber thesis, the question is whether we can find such differences between Protestants and non-Protestants as well. Such a finding would allow us to reach a verdict on the Weber thesis. This results in the following hypothesis:

Hypothesis 1. The well-being of Protestants is influenced more by being unemployed (relative to having a job) than is the well-being of people from other denominations.

Hypothesis 1 is useful for testing one of the more common interpretations of the Weber thesis, namely that those being Protestants now are likely to have a stronger work ethic than people currently holding different religious beliefs are. However, we have noted that Weber's original argument did not so much focus on Protestantism in the present but on a Protestant ethic as a historical factor, having evolved into a rational, secular "spirit of capitalism." A hypothesis closer to the original argument is therefore:

Hypothesis 2. The well-being of people from historically Protestant societies is influenced more by being unemployed (relative to having a job) than is the well-being of people from other societies.

We test these two hypotheses below.

4. Empirical analysis

4.1. Data

The data we use in our empirical analysis come from the European and World Values Surveys, waves 1–5 (European Values Study Group and World Values Survey Association, 2006; World Values Survey Association, 2009). The websites of

⁵ Religiosity is not the only factor that may shield against the negative well-being effect of unemployment. Social capital could be another such factor, although the available evidence does not really support this possibility (Winkelmann, 2009).

the WVS and the EVS, <http://www.europeanvalues.nl> and <http://www.worldvaluessurvey.org>, provide more information and have the data available for downloading.

4.1.1. *Dependent variable*

The dependent variable of interest is individuals' life satisfaction, measured by the item asking "All things considered, how satisfied are you with your life as a whole these days?", with the answer scale ranging from "1 – Dissatisfied" to "10 – Satisfied." To facilitate the ease of interpretation of the findings and following a large literature in psychology, we analyze the SWB variable as though it is a cardinal variable (range 1–10), noting that this will not substantially affect our results (see, for example, Clark et al., 2008). In our analyses we include only individuals with non-missing satisfaction scores.

4.1.2. *Key independent variables*

The independent variables of interest in the WVS are individuals' employment status and religious denomination. Concerning employment status, the WVS discerns eight categories, "Full-time employed," "Part time employed," "Self employed," "Retired," "Housewife," "students," "Unemployed," and "Other". We construct dummies for seven of these eight categories, taking full-time employed as the base category. For religious denomination we use the answer to the question whether people belong to a religious denomination and, if yes, to which one they belong. The WVS codes a great number of possible denominations, including being Protestant. Since Weber theorized on a *Protestant* work ethic vis-à-vis other denominations, we consider only individuals who belong to a religious denomination, including Protestantism. We create a dummy with value 1 if the respondent is Protestant and 0 if he or she belongs to another denomination. To test **Hypothesis 1** – Protestants value work higher than individuals from other denominations do – we interact the Protestant dummy with the unemployment dummy. The empirical analysis shows how much more (or less) Protestants suffer from being unemployed (relative to full-time employed) than other denominations do.

For testing **Hypothesis 2** – unemployment hurts more in Protestant societies – we add a classification of countries as either Protestant or not. We draw on Norris and Inglehart's (2004: 14) classification to identify countries in our sample that have historically been Protestant. These countries are: Australia, Estonia, Finland, Germany, Latvia, the Netherlands, New Zealand, Norway, South Africa, Zimbabwe, Sweden, Switzerland, Uganda, the UK, and the US. This set of countries constitutes the Protestant heartland, with the specific religious ethics instilled in the cultures of these countries over several centuries, ever since the Protestant Reformation of the early 16th century. Applied to individuals, respondents get a dummy score of 1 if they live in one of these countries and a score of 0 otherwise. In our robustness checks, we also experiment with a dummy indicating whether a country is Protestant based on a contemporary numerical majority criterion. Using the 50%-benchmark, we identify Finland, Great Britain, Norway, South Africa, Sweden, and the United States as societies in our sample in which Protestantism currently is the dominant religion (classification based on data from the *CIA World Factbook*). As with Hypothesis 1, the empirical model that we use to test Hypothesis 2 includes an interaction term that captures how much more (or less) individual unemployment lowers SWB in Protestant societies compared to in non-Protestant societies.

4.1.3. *Other independent variables*

Our empirical models include several other independent variables. The WVS contains different items probing respondents about their background such as their health status and income. Controlling for these situational factors is important as unemployment is likely to have an indirect impact on SWB through its effect on these individual circumstances. Income and health, for instance, are probably associated both with unemployment and with lower SWB.

Accordingly, we include the following variables as control variables in our analysis: sex, age and age squared, income scale, education, state of health, and marital status. Individuals with missing answers, or "unanswered" or "don't know" responses are excluded. This way we end up with a sample of 149,462 individuals from 82 societies. We use this sample for all our analyses, unless otherwise indicated. Table 1 gives a short description and some summary statistics for the main variables included in our analysis.

An important robustness check involves controlling for institutional context as a factor affecting how much it hurts to be unemployed relative to having a full-time job. Notably we find that social security benefits likely affect the disutility of unemployment. The measure of institutions that we use is Esping-Andersen's (1990) classification of different varieties of capitalism, which provides a broad measure of institutional differences between countries that could be relevant to the psychic cost of unemployment. Table 1 again provides details and descriptive statistics.⁶

4.2. *Model and estimation*

An important feature of the WVS data is that they are structured hierarchically with individual observations nested in countries. We separate variance that is between countries and variance that is between individuals within countries, estimating the models simultaneously. This way we avoid throwing individual-level and country-level predictors together, whilst we also control for the clustering of observations.

⁶ As an alternative to Esping-Andersen's (1990) classification, we also consider moderating effects of the varieties of capitalism as classified by Hall and Soskice (2001) (see below; results not reported).

Table 1
Descriptive statistics.

Variable and description	Mean and standard deviation
Satisfaction (1–10)	6.43 (2.54)
Unemployed (1 = yes)	9.9% (29.9%)
Protestant denomination (1 = yes)	13.5% (34.2%)
Unemployed and Protestant	1.4% (11.7%)
Protestant society (1 = yes)	17.9% (38.3%)
Unemployed in a Protestant society	1.8% (13.2%)
Full-time employed [base category]	32.5% (46.9%)
Part-time employed	7.4% (26.1%)
Self-employed	12.0% (32.5%)
Retired	11.6% (32.0%)
Housewife	16.8% (37.4%)
Student	7.6% (26.5%)
Other	2.1% (14.5%)
Sex (1 = male)	47.7% (49.9%)
Age	40.4 (15.8)
Income scale (1–10)	4.48 (2.36)
State of health (1, very poor–5, very good)	3.81 (.887)
Married [base category]	59.2% (49.1%)
Living together as married	6.2% (24.1%)
Divorced	2.9% (16.7%)
Separated	1.7% (12.8%)
Widowed	6.2% (24.0%)
Never married	23.9% (42.7%)
Inadequately completed elementary education	14.7% (35.4%)
Completed (compulsory) elementary	15.1% (35.8%)
Incomplete secondary: technical/vocational	7.4% (26.1%)
Complete secondary: technical/vocational	16.8% (37.4%)
Incomplete university-preparatory	8.6% (28.1%)
Complete university-preparatory	16.4% (37.0%)
Some university without degree	6.5% (24.7%)
University with degree [base category]	14.5% (35.2%)
Society with present-day Protestant domination (1 = yes)	11.2% (31.5%)
Variety of capitalism/welfare state (Esping-Andersen, 1990)	
Not classified [base category]	86.6% (34.0%)
Liberal	5.7% (23.3%)
Conservative	5.3% (22.4%)
Social democratic	2.4% (15.2%)
Happiness (1–4) [150,867/82]	3.04 (.764)

Notes: Descriptives concern 149,462 individuals from 82 societies, except when otherwise indicated The societies included are: Albania, Andorra, Azerbaijan, Argentina, Australia, Bangladesh, Armenia, Bosnia and Herzegovina, Brazil, Bulgaria, Belarus, Canada, Chile, China, Taiwan, Colombia, Cyprus, Czech Republic, Dominican Republic, El Salvador, Ethiopia, Estonia, Finland, France, Georgia, Germany, Ghana, Guatemala, Hong Kong, India, Indonesia, Iran, Iraq, Italy, Japan, Jordan, South Korea, Kyrgyzstan, Latvia, Lithuania, Malaysia, Mali, Mexico, Moldova, Morocco, Netherlands, New Zealand, Nigeria, Norway, Pakistan, Peru, Philippines, Poland, Puerto Rico, Romania, Russian Federation, Rwanda, Saudi Arabia, Slovakia, Viet Nam, Slovenia, South Africa, Zimbabwe, Spain, Sweden, Switzerland, Thailand, Trinidad and Tobago, Turkey, Uganda, Ukraine, Macedonia, Egypt, UK, Tanzania, US, Burkina Faso, Uruguay, Venezuela, Serbia and Montenegro, Zambia, and Serbia.

For the formal empirical model we have an individual i who resides in country j . The individual's subjective well-being is denoted by SWB_{ij} . The independent variables of interest are the unemployment dummy U_{ij} (1 if yes), a Protestant dummy P_{ij} (1 if yes), and/or a dummy S_j that equals 1 if the society is predominantly Protestant and 0 otherwise. Testing our hypotheses requires inclusion of two interaction terms: $U_{ij} \times P_{ij}$ and $S_j \times U_{ij}$. We also include x_{ij} , the set of other individual determinants of SWB, and z_j , the set of country-level variables. This yields the following general, within-country model:

$$SWB_{ij} = \beta_{0j} + \beta_{1j}U_{ij} + \beta_{2j}P_{ij} + \beta_{3j}(U_{ij} \times P_{ij}) + \beta_{4j}x_{ij} + \varepsilon_{ij}$$

Similarly, the between-country model is given by:

$$\begin{aligned} \beta_{0j} &= \gamma_{00} + \gamma_{01}S_j + u_{0j} \\ \beta_{1j} &= \gamma_{10} + \gamma_{11}S_j + u_{1j} \\ \beta_{2j} &= \gamma_{20} + \gamma_{21}z_j + u_{2j} \\ \beta_{3j} &= \gamma_{30} + \gamma_{31}z_j + u_{3j} \\ \beta_{4j} &= \gamma_{40} + \gamma_{41}z_j + u_{4j} \end{aligned}$$

Table 2

The appreciation of having a job in terms of life satisfaction for Protestants vs. non-Protestants.

	Model 1	Model 2	Model 3	Model 4
Intercept	6.53*** (.124)	4.07*** (.128)	4.06*** (.128)	4.06*** (.128)
Unemployed	-.652*** (.022)	-.343*** (.022)	-.342*** (.022)	-.325*** (.023)
Protestant denomination	-	-	.053** (.021)	.067*** (.021)
Unemployed and Protestant	-	-	-	-.129** (.055)
Part-time employed	-.200*** (.024)	-.082*** (.023)	-.082*** (.023)	-.082*** (.023)
Self-employed	-.151*** (.021)	.003 (.020)	.003 (.020)	.003 (.020)
Retired	-.327*** (.021)	.068*** (.025)	.068*** (.025)	.068*** (.025)
Housewife	-.047** (.018)	.182*** (.020)	.182*** (.020)	.183*** (.020)
Student	.157*** (.024)	.063** (.026)	.063** (.026)	.062** (.026)
Other	-.343*** (.044)	-.048 (.042)	-.048 (.042)	-.048 (.042)
Income scale	-	.170*** (.003)	.170*** (.003)	.170*** (.003)
Health	-	.655*** (.007)	.655*** (.007)	.655*** (.007)
Living together as married	-	-.098*** (.026)	-.098*** (.026)	-.097*** (.026)
Divorced	-	-.384*** (.035)	-.384*** (.035)	-.384*** (.035)
Separated	-	-.555*** (.045)	-.554*** (.045)	-.554*** (.045)
Widowed	-	-.259*** (.026)	-.259*** (.026)	-.259*** (.026)
Never married	-	-.238*** (.018)	-.238*** (.018)	-.238*** (.018)
Further controls	No	Yes	Yes	Yes
-2 Loglikelihood	671,266.4	655,082.0	655,075.4	655,069.9

Notes: Data concern 149,462 individuals from 82 societies. Standard errors in parentheses. Standard errors take clustering into account. Dependent variable is life satisfaction (1–10). All models include country fixed effects. Unreported control variables are education, sex, age and age squared. For “Protestant denomination” the reference category is formed by all other religious denominations. The base category is a married, non-Protestant woman with a university degree who is full-time employed. Results (available on request) are similar when we include income and health dummies rather than continuous measures of health and income. We report intercepts only when analyzing a dependent variable for the first time.

* Significance at the 0.1 level.

** Significance at the 0.05 level.

*** Significance at the 0.01 level.

Combining the two gives our complete model:

$$SWB_{ij} = \gamma_{00} + \gamma_{01}S_j + \gamma_{10}U_{ij} + \gamma_{20}P_{ij} + \gamma_{30}(U_{ij} \times P_{ij}) + \gamma_{40}x_{ij} + \gamma_{11}(S_j \times U_{ij}) + \gamma_{21}Z_jP_{ij} + \gamma_{31}Z_j(U_{ij} \times P_{ij}) + \gamma_{41}Z_jx_{ij} + [u_{0j} + u_{1j}U_{ij} + u_{2j}P_{ij} + u_{3j}U_{ij}P_{ij} + u_{4j}x_{ij} + \varepsilon_{ij}] \quad (1)$$

In this model the moderating effect of Protestantism and living in a historically Protestant society on the SWB effect of unemployment captures the distinct Protestant work ethic (if such a thing exists at all). To test our hypotheses, we look at the coefficients γ_{30} and γ_{11} as these show whether there is a specific Protestant component to the appreciation of work and the size of such an effect.⁷ We have further specified the model broadly to incorporate other cross-level interactions, mainly with an eye to checking the robustness of our basic findings. The terms u_{1j} to u_{4j} thereby capture country-specific deviations from the mean SWB effect of being unemployed, having Protestant denomination, etc. These random slopes are of no concern to us, however, as we are interested in group heterogeneity driven by religious ethics only. We further have a general mean γ_{00} , where u_{0j} denotes country-specific deviations from the average intercept in our sample. These capture the country fixed effects that allow us to control for a variety of country-level influences on SWB, including measurement error. We should thereby emphasize that factors that affect the level of SWB are not of any concern to us, as we are only interested in systematic variation in the well-being effects of having a job. We estimate the model using maximum likelihood procedures. The software used is MLwiN.

4.3. Basic results

Is the SWB effect of unemployment stronger among Protestants (Hypothesis 1)? Our results indicate that this is indeed the case (Table 2). Models 1 and 2 show that, in accordance with the literature, unemployment has a robust, negative effect on well-being. Being of Protestant denomination, as opposed to another denomination, is associated with higher SWB (Model 3). The effect we are primarily interested in, however, is that of being both Protestant and unemployed. Upon including this interaction term, we find it has a negative effect (Model 4), indicating that whereas unemployment reduces well-being regardless of religious denomination, it has an additional negative effect for Protestants of about 40% of the size of the original

⁷ γ_{30} thereby pertains to Hypothesis 1 and γ_{11} to Hypothesis 2. Strictly speaking, γ_{30} and γ_{11} could also be interpreted as showing that the SWB effects of Protestantism are different for employed and unemployed people. If Protestantism is less welcoming to the unemployed, this is also an indication of a stronger valuation of work, making this interpretation theoretically equivalent to the Protestant work ethic. γ_{31} can also be taken as providing evidence on the Weber thesis, but typically we do not consider higher-order interactions in our models unless warranted by empirical evidence.

Table 3

The appreciation of having a job in terms of life satisfaction in Protestant vs. non-Protestant societies.

	Model 5	Model 6	Model 7	Model 8
Unemployed	-.342*** (.022)	-.287*** (.023)	-.297*** (.024)	-.288*** (.024)
Protestant	.052** (.021)	.050** (.021)	.018 (.029)	.049** (.022)
Unemployed and Protestant	-	-	.130* (.079)	.010 (.060)
Protestant society	.376 (.289)	.405 (.289)	.384 (.289)	.406 (.289)
Unemployed in a Protestant society	-	-.329*** (.052)	-.248*** (.066)	-.333*** (.056)
Protestant in a Protestant society	-	-	.073* (.043)	-
Unemployed and Protestant in a Protestant society	-	-	-.288** (.121)	-
-2 Loglikelihood	655,073.8	655,033.3	655,026.6	655,033.3

Note: See Table 2. Data again concern 149,462 individuals from 82 societies. Full set of controls included. The base category is a married, non-Protestant woman with a university degree who is full-time employed and lives in a non-Protestant country.

*Significance at the 0.1 level.

**Significance at the 0.05 level.

***Significance at the 0.01 level.

effect. This effect is statistically significant ($p < 0.05$). It seems that at the individual level unemployment hurts Protestants much more than it does non-Protestants. This is a preliminary confirmation of the Weber thesis.

What about the societal level? As noted, Weber's original thesis refers to a capitalist spirit that has its roots in a Protestant ethic, but which over time has grown into an independent, secular worldview dominating society. We would therefore not expect a link between one's work ethic and currently being a Protestant, so much as a link between one's work ethic and whether one lives in a society historically dominated by Protestantism. Hypothesis 2, stating that there should be a relation between the effect size of unemployment on SWB and living in a society in which Protestantism is the dominant religion, is therefore a more appropriate test of the original Weber thesis.

Table 3 presents the results for our test of Hypothesis 2. As Model 6 shows, being unemployed hurts individuals from Protestant societies significantly more than it does others. Moreover, when this cross-level interaction term is included, we find that individual Protestantism does not increase the psychic cost of unemployment anymore, as reflected by a positive coefficient for the interaction between being unemployed and being a Protestant (Model 7). Protestant societies are the exception, however, as, within Protestant societies, Protestants again suffer more from not having a job than other denominations do. Model 8 shows that this result holds independent of the inclusion of the higher-order interaction terms (being Protestant in a Protestant society, and being unemployed and Protestant in a Protestant society). Knowing that inclusion of higher-order interactions does not affect the results, Model 8 is our preferred model because it is less complex than Model 7.⁸

Model 8 further enables us to assess in more detail the idea that the dominant effect of Protestantism on the value of having a job is at the societal level and not at the individual level. All models estimated thus far are nested, meaning that we can apply likelihood-ratio tests to assess the statistical significance of changes to overall model fit. Doing so, gives us the clearest evidence that the effect of living in a historically Protestant society dominates the effect of individual Protestantism. Allowing individual Protestantism to moderate the negative well-being effect of unemployment (Model 8) in a model that already includes a Protestant society dummy as a moderator (Model 6) does not improve model fit statistically significantly as shown by the very small value for the chi-square test statistic ($\chi^2 = 0.0$ for one degree of freedom; $p = 0.87$). The Weber thesis thus is confirmed, while it is living in a Protestant society rather than being Protestant oneself that matters most.

4.4. Robustness

The main objection to our conclusions is that, for some reason, the life satisfaction question that we use is not a good proxy for experienced utility. To address this point, we replace the life satisfaction measure with individuals' happiness ratings as alternative dependent variable in our empirical model (Table 4). Confirming our earlier results, we find the negative effect of unemployment on self-reported happiness to be twice as strong for Protestants compared to non-Protestants (Model 10). At the macro-level, we observe that the impact of unemployment on happiness is significantly stronger in Protestant societies (Model 11). Just as in the original analysis, the effect of individual Protestantism disappears when including Protestantism at the societal level (Model 12). This result again suggests that it is living in a Protestant society rather than being Protestant oneself that matters for the preference for work.

A second key robustness check assesses the sensitivity of our results to the classification of societies as Protestant. Replacing the old classification based on Norris and Inglehart (2004) with a classification based on present-day dominance does not alter our results (Table 5). Unemployment still hurts significantly more in Protestant societies.

In addition to robustness to changes in measures, we explore the possibility that somehow our results are driven by differences in formal institutions such as social security. Institutional arrangements are likely to moderate the well-being effect of unemployment: the extent of the welfare state, for example, might affect the negative economic consequences of

⁸ In addition, for reasons of clarity, in the models with multiple interaction terms that follow we do not include higher-order interaction terms.

Table 4

A robustness check of the differences in the well-being appreciation of having a job using happiness as the dependent variable.

	Model 9	Model 10	Model 11	Model 12
Intercept	2.13*** (.035)	2.13*** (.035)	2.13*** (.035)	2.13*** (.035)
Unemployed	-.068*** (.007)	-.059*** (.007)	-.051*** (.007)	-.049*** (.007)
Protestant	.032*** (.006)	.039*** (.007)	.032*** (.006)	.035*** (.007)
Unemployed and Protestant	-	-.065*** (.017)	-	-.028 (.018)
Protestant society	.072 (.069)	.071 (.068)	.081 (.068)	.080 (.068)
Unemployed in a Protestant society	-	-	-.100*** (.016)	-.089*** (.017)
-2 Loglikelihood	304,795.8	304,780.7	304,756.4	304,754.1

Note: Data concern 150,867 individuals from 82 societies (see Table 1). Table copies parts of Tables 2 and 3 with self-reported happiness (1–4) as the dependent variable.

*Significance at the 0.1 level.
 **Significance at the 0.05 level.
 ***Significance at the 0.01 level.

Table 5

Robustness of the well-being appreciation of having a job in Protestant societies.

	Model 13	Model 14	Model 15
Unemployed	-.342*** (.022)	-.299*** (.023)	-.298*** (.023)
Protestant	.052** (.021)	.051** (.021)	.052** (.022)
Unemployed and Protestant	-	-	-.017 (.059)
Society with present-day Protestant domination	.889** (.410)	.915** (.410)	.914** (.410)
Unemployed in a society with present-day Protestant domination	-	-.308*** (.056)	-.302*** (.060)
-2 Loglikelihood	655,070.8	655,040.3	655,040.2

Note: See Table 3. Data again concern 149,462 individuals from 82 societies.

*Significance at the 0.1 level.
 **Significance at the 0.05 level.
 ***Significance at the 0.01 level.

unemployment. Higher psychic costs of unemployment in one society might then simply reflect objectively higher cost of unemployment in this society, rather than any difference in work ethic. In order to check this possibility, we add Esping-Anderson's (1990) classification of varieties of capitalism to the analysis as a means to proxy for welfare-state institutions (Table 6).

In accordance with our expectations, we observe that the effects of unemployment on SWB differ between various institutional settings. More importantly, however, we find that the effect of Protestantism on the psychic cost of unemployment is not affected by including institutional variables. Protestants and those living in a Protestant society continue to experience higher losses in well-being from unemployment than others do (Models 18 and 19). This result remains when we switch to other proxies for welfare-related institutional context, based on Hall and Soskice (2001) (results available on request). We conclude that differences in welfare-state institutions do not drive our results.

Finally, a potential methodological concern is the possibility of an omitted variable, affecting both unemployment and Protestantism. Theoretically, the rationale for believing that there is a third factor underlying both Protestantism and work ethic is extremely weak. We simply do not know of any factor that is plausibly related to both Protestantism and work ethic. Particularly, we do not see a common characteristic that might have caused such a diverse set of countries as the Protestant

Table 6

The effect of Protestantism on the well-being appreciation of having a job with differences in welfare-state institutions controlled for.

	Model 16	Model 17	Model 18	Model 19
Unemployed	-.342*** (.022)	-.339*** (.022)	-.324*** (.023)	-.295*** (.024)
Protestant	.052** (.021)	.054*** (.021)	.067*** (.021)	.052** (.021)
Unemployed and Protestant	-	-	-.123** (.055)	-
Protestant society	-.405 (.333)	-.404 (.333)	-.405 (.333)	-.371 (.333)
Liberal welfare state	1.17** (.453)	1.16** (.453)	1.15** (.453)	1.15** (.453)
Conservative welfare state	1.16*** (.410)	1.17*** (.410)	1.17*** (.410)	1.16*** (.410)
Social democratic welfare state	1.72*** (.615)	1.72*** (.615)	1.72*** (.616)	1.70*** (.615)
Unemployed in a Protestant society	-	-	-	-.322*** (.056)
Unemployed in a Liberal welfare state	-	.242** (.109)	.263** (.110)	.273** (.109)
Unemployed in a conservative welfare state	-	-.338*** (.118)	-.309*** (.118)	-.120 (.123)
Unemployed in a Social democratic welfare state	-	-.172 (.203)	-.160 (.203)	.105 (.208)
-2 Loglikelihood	655,059.4	655,045.1	655,040.2	655,011.4

Note: See Table 3.

*Significance at the 0.1 level.
 **Significance at the 0.05 level.
 ***Significance at the 0.01 level.

heartland both to become Protestant societies centuries ago and, nowadays, to have a high intrinsic appreciation of work. That being said, we cannot rule out the possibility of an omitted factor in principle.

5. Conclusion

This paper tests, both at the individual and the societal level, Weber's (1904/5 [1930]) famous thesis that Protestantism is associated with a stronger work ethic, using a novel approach that is rooted in the happiness (subjective well-being or SWB) literature. Previous tests of the Weber thesis have come up with ambiguous results for two reasons. First, there has been a tendency to mix up the Weberian thesis that historical Protestantism is associated with a strong work ethic with the non-Weberian thesis that a strong work ethic is associated with high economic growth. Second, empirical measures of a work ethic have usually been based on stated preferences methods (i.e. values surveys), which are suffering from various serious methodological problems. By focusing on the actual Weber thesis – Protestantism causes a stronger work ethic – and by using a more direct measure to elicit people's appreciation of work, we find strong support for Weber's argument.

Specifically, we operationalize work ethic by examining the impact of religious denomination on the psychic costs of unemployment. We compare the losses in well-being due to being unemployed between individuals of Protestant and non-Protestant denomination. If the Weber thesis is correct and Protestants/people from Protestant societies indeed have a relatively stronger work ethic, joblessness should hurt these groups more than it does others. For our empirical analysis we use contemporary data from the World Values Survey (WVS), covering 82 societies and comprising almost 150,000 individuals. This makes our assessment of the Weber thesis the most comprehensive test yet. Results show that unemployment has a negative effect on SWB in general, but that Protestantism makes this effect much larger, establishing the contemporary relevance of Weber's insights on a specific Protestant work ethic more than a century after their inception. This result is robust for inclusion of income effects, a moderating effect of welfare-state institutions, and a range of individual-level control variables.

Interestingly, the effect appears stronger at the country level: it is not so much Protestant individuals who are hurt more by being unemployed as it is individuals (both Protestants and non-Protestants) living in Protestant societies. Individual Protestant denomination only aggravates the psychic cost of unemployment for individuals (i.e. Protestants) living in a Protestant society. On basis of this societal effect of Protestantism on work ethic, we find that the channel linking religion to differences in values, specifically work ethic, is very likely a subtle one. Studies exploring religion's economic consequences could benefit from incorporating this nuance and investigating it further.

Although our results strongly support the existence of a Protestant work ethic, we note that our analysis has not explicitly considered the issue of causality. Protestantism may have been the cause of a change in values in the direction of a more intrinsic appreciation of work. Alternatively, our results could reflect a process of self-selection in which people with a stronger work ethic have disproportionately converted to Protestantism because it offered a religious justification for their ethical predispositions. For the purpose of this study, however, it is largely irrelevant whether Protestantism caused the stronger work ethic we observe or whether Protestantism simply allowed work-minded individuals to escape the stifling moral constraints that characterized the attitudes toward work of other religious denominations (specifically Catholicism). Either way, our analysis confirms Weber's point that the ethical changes associated with Protestantism stimulated worldly activity. Future research may seek to disentangle the precise causal mechanism behind this process.

Where does this put us within the debate about the Weber thesis? Any discrepancy between the ambiguous results of previous studies into the Weber thesis and our own conclusions is partially due to the fact that our analysis has stayed much closer to the argument actually made by Weber (1904/5 [1930]). Evidence for a historical relation between Protestantism and income growth may be weak, but we find support for the more limited case that Protestantism is related to a work ethic to be much stronger. What is more, our results lend support to Weber's argument that it is a spirit evolving from a historically Protestant ethic rather than contemporary, individual Protestantism that matters for such a work ethic.

A second reason why our results are much more favorable to Weber's story is that our approach to measure values is arguably more equipped to grasp cultural differences in work ethic than traditional self-professed values methods are. Beyond the Weber thesis, results of this study thus support the use of heterogeneous SWB functions as an effective method to measure cross-cultural variation in values. Given economists' increasing interest in the effects of attitudinal differences and the problems associated with stated preferences data in this area, the approach of comparing well-being effects is a welcome contribution to the methodological toolkit of empirical economists. The approach has a wide range of applications and offers ample opportunities for future research.

References

- Alatas, S.H., 1977. *The Myth of the Lazy Native*. Frank Cass, London.
- Alesina, A., Di Tella, R., MacCulloch, R., 2004. Inequality and happiness: are Europeans and Americans different? *Journal of Public Economics* 88, 2009–2042.
- Arruñada, B., 2010. Protestants and catholics: similar work ethic, different social ethic. *Economic Journal* 120, 890–918.
- Barro, R.J., McCleary, R.M., 2003. Religion and economic growth across countries. *American Sociological Review* 68, 760–781.
- Becker, S.O., Woesmann, L., 2009. Was Weber wrong? A human capital theory of protestant economic history. *Quarterly Journal of Economics* 124, 531–596.

- Bertrand, M., Mullainathan, S., 2001. Do people mean what they say? Implications for subjective survey data. *American Economic Review, Papers and Proceedings* 91, 67–72.
- Bettendorf, L., Dijkgraaf, E., 2010. Religion and income: heterogeneity between countries. *Journal of Economic Behavior & Organization* 74, 12–29.
- Cavalcanti, T., Parente, S., Zhao, R., 2007. Religion in macroeconomics: a quantitative analysis of Weber's thesis. *Economic Theory* 32, 105–123.
- Chang, H.-J., 2007. *Bad Samaritans—Rich Nations, Poor Policies, and the Threat to the Developing World*. Random House, London.
- Clark, A.E., 2003. Unemployment as a social norm: psychological evidence from panel data. *Journal of Labor Economics* 21, 323–351.
- Clark, A.E., Diener, E., Georgellis, Y., Lucas, R.E., 2008. Lags and leads in life satisfaction: a test of the baseline hypothesis. *Economic Journal* 118, F222–F243.
- Clark, A.E., Knabe, A., Rätzl, S., 2010. Boon or bane? Others' unemployment, well-being and job insecurity. *Labour Economics* 17, 52–61.
- Clark, A.E., Lelkes, O., 2005. *Deliver Us From Evil: Religion as Insurance*. Unpublished manuscript, Paris School of Economics.
- Clark, A.E., Oswald, A.J., 1994. Unhappiness and unemployment. *Economic Journal* 104, 648–659.
- Clarke, H.D., Kornberg, A., McIntyre, C., Bauer-Kaase, P., Kaase, M., 1999. The effect of economic priorities on the measurement of value change. *American Political Science Review* 93, 637–647.
- Darity, W.A., Goldsmith, A.H., 1996. Social psychology, unemployment and macroeconomics. *Journal of Economic Perspectives* 10 (1), 121–140.
- Delacroix, J., Nielsen, F., 2001. The beloved myth: Protestantism and the rise of industrial capitalism in nineteenth-century Europe. *Social Forces* 80, 509–553.
- Dezutter, J., Soenens, B., Hutsebaut, D., 2006. Religiosity and mental health: a further exploration of the relative importance of religious behaviors vs. religious attitudes. *Personality and Individual Differences* 40, 807–818.
- Di Tella, R., MacCulloch, R.J., Oswald, A.J., 2001. Preferences over inflation and unemployment: evidence from surveys of happiness. *American Economic Review* 91, 335–341.
- Di Tella, R., MacCulloch, R.J., 2005. Partisan social happiness. *Review of Economic Studies* 72, 367–393.
- Diener, E., Suh, E.M. (Eds.), 2000. *Culture and Subjective Well-being*. MIT Press, Cambridge.
- Diener, E., Suh, E.M., Lucas, R.E., Smith, H.L., 1999. Subjective Well-being: Three Decades of Progress. *Psychological Bulletin* 125, 276–302.
- Eisenberg, P., Lazarsfeld, P.F., 1938. The psychological effects of unemployment. *Psychological Bulletin* 35, 358–390.
- Ellison, C.G., 1995. Race, Religious Involvement and Depressive Symptomatology in a Southeastern U.S. Community. *Social Science & Medicine* 40, 1561–1572.
- Esping-Andersen, G., 1990. *The Three Worlds of Welfare Capitalism*. Polity Press, Cambridge.
- European Values Study Group and World Values Survey Association, 2006. *European and World Values Surveys Four-wave Integrated Data File, 1981–2004*. Available electronically from <http://www.jdsurvey.net>
- Finkelstein, A., Luttmer, E.F.P., Notowidigdo, M.J., 2009. Approaches to estimating the health state dependence of the utility function. *American Economic Review, Papers and Proceedings* 99, 116–121.
- Frey, B.S., Stutzer, A., 2002. What can economists learn from happiness research? *Journal of Economic Literature* 40, 402–435.
- Fryer, D., 2001. Unemployment and mental health. In: Smelser, N.J., Baltes, P.B. (Eds.), *International Encyclopedia of the Social & Behavioral Sciences*. Elsevier, Oxford.
- Furnham, A., 1984. The Protestant work ethic: a review of the psychological literature. *European Journal of Social Psychology* 14, 87–104.
- Furnham, A., 1990. *The Protestant Work Ethic: The Psychology of Work-related Beliefs and Behaviours*. Routledge, London.
- Gorodnichenko, Y., Roland, G., 2011. Which dimensions of culture matter for long run growth? *American Economic Review, Papers and Proceedings* 101, 492–498.
- Granato, J., Inglehart, R., Leblang, D., 1996. The effect of cultural values on economic development: theory, hypotheses, and some empirical tests. *American Journal of Political Science* 40, 607–631.
- Gruber, J.H., Mullainathan, S., 2005. Do cigarette taxes make smokers happier. *Advances in Economic Analysis & Policy* 5 (1), Article 4.
- Guiso, L., Sapienza, P., Zingales, L., 2003. People's opium? Religion and economic attitudes. *Journal of Monetary Economics* 50, 225–282.
- Guiso, L., Sapienza, P., Zingales, L., 2006. Does culture affect economic outcomes? *Journal of Economic Perspectives* 20 (1), 23–48.
- Hackney, C.H., Sanders, G.S., 2003. Religiosity and mental health: a meta-analysis of recent studies. *Journal for the Scientific Study of Religion* 42, 43–55.
- Hall, P.A., Soskice, D., 2001. *Varieties of Capitalism: The Institutional Foundations of Comparative Advantage*. Oxford University Press, Oxford.
- Haring, M.J., Okun, M.A., Stock, W.A., 1984. A quantitative synthesis of literature on work status and subjective well-being. *Journal of Vocational Behavior* 25, 316–324.
- Harrison, L.E., 1992. *Who Prospers? How Cultural Values Shape Economic and Political Success*. Basic Books, New York.
- Harrison, L.E., Huntington, S., 2000. *Culture Matters: How Values Shape Human Progress*. Basic Books, New York.
- Hayes, J., Nutman, P., 1981. *Understanding the Unemployed: The Psychological Effects of Unemployment*. Tavistock Publications, London.
- Helliwell, J.F., Wang, S., 2012. The state of world happiness. In: Helliwell, J.F., Layard, R., Sachs, J. (Eds.), *The World Happiness Report*. Earth Institute, Washington, pp. 10–57.
- Huntington, S.P., 1993. The clash of civilizations. *Foreign Affairs* 72 (3), 22–50.
- Iannaccone, L.R., 1998. Introduction to the economics of religion. *Journal of Economic Literature* 36, 1465–1496.
- Jellema, J., Roland, G., 2011. Institutional clusters and economic performance. *Journal of Economic Behavior & Organization* 79, 108–132.
- Jones Jr., H.B., 1997. The Protestant work ethic: Weber's model and the empirical literature. *Human Relations* 50, 757–778.
- Kahn, H., 1979. *World Economic Development: 1979 and Beyond*. Westview Press, Boulder.
- Kahneman, D., Wakker, P.P., Sarin, R., 1997. Back to Bentham? Explorations of experienced utility. *Quarterly Journal of Economics* 112, 375–405.
- Kim, A.E., Park, G., 2003. Nationalism, Confucianism, work ethic and industrialization in the South. *Journal of Contemporary Asia* 33, 37–49.
- Koenig, H.G., Larson, D.B., 2001. Religion and mental health: evidence for an association. *International Review of Psychiatry* 13, 67–78.
- Landes, D., 1998. *The Wealth and Poverty of Nations*. Norton, New York.
- Lehmann, H., Roth, G. (Eds.), 1993. *Weber's Protestant Ethic. Origins, Evidence, Contexts*. German Historical Institute, The Press Syndicate of the University of Cambridge, Cambridge.
- Lelkes, O., 2006. Tasting freedom: happiness, religion and economic transition. *Journal of Economic Behavior & Organization* 59, 173–194.
- Lucas, R.E., Clark, A.E., Georgellis, Y., Diener, E., 2004. Unemployment alters the set-point for life satisfaction. *Psychological Science* 15, 8–13.
- Maseland, R., van Hoorn, A., 2009. Explaining the negative correlation between values and practices: a note on the Hofstede-GLOBE debate. *Journal of International Business Studies* 40, 527–532.
- McCleary, R.M., Barro, R.J., 2006. Religion and economy. *Journal of Economic Perspectives* 20 (1), 49–72.
- McKee-Ryan, F.M., Song, Z., Wanberg, C.R., Kinicki, A.J., 2005. Psychological and physical well-being during unemployment: a meta-analytic study. *Journal of Applied Psychology* 90, 53–76.
- Norris, P., Inglehart, R., 2004. *Sacred and Secular*. Cambridge University Press, Cambridge.
- Pargament, K.I., 2002. The bitter and the sweet: an evaluation of the costs and benefits of religiousness. *Psychological Inquiry* 13, 168–181.
- Popova, O., 2009. Can Religion Insure against Aggregate Shocks to Happiness? The Case of Transition Countries. CERGE-EI Working Paper No. 425.
- Rupasingha, A., Chilton, J.B., 2009. Religious adherence and county economic growth in the US. *Journal of Economic Behavior & Organization* 72, 438–450.
- Sanderson, S.K., Abrutyn, S.B., Proctor, K.R., 2011. Testing the protestant ethic thesis with quantitative historical data: a research note. *Social Forces* 89, 905–911.
- Schaltegger, C.A., Torgler, B., 2010. Work ethic, Protestantism, and human capital. *Economic Letters* 107 (2), 99–101.
- Smith, T.B., McCullough, M.E., Poll, J., 2003. Religiousness and depression: evidence for a main effect and the moderating influence of stressful life events. *Psychological Bulletin* 129, 614–636.
- Tawney, R.H., 1926. *Religion and the Rise of Capitalism*. Harper and Row, New York.

- van Hoorn, A., Maseland, R., 2010. Cultural differences between East and West Germany after 1991: communist values versus economic performance? *Journal of Economic Behavior & Organization* 76, 791–804.
- Veenhoven, R., 2012. Cross-national differences in happiness: cultural measurement bias or effect of culture? *International Journal of Wellbeing* 2, 333–353.
- Weber, M., 1904/5 [1930]. *The Protestant Ethic and the Spirit of Capitalism*. Translated by Talcott Parsons, with an introduction by Anthony Giddens, 1992. Routledge, London and New York.
- Weil, D.N., 2009. *Economic Growth*, 2nd ed. Pearson Addison Wesley, Boston.
- Winkelmann, R., 2009. Unemployment, social capital, and subjective well-being. *Journal of Happiness Studies* 10, 421–430.
- Winkelmann, L., Winkelmann, R., 1998. Why are the unemployed so unhappy? Evidence from panel data. *Economica* 65, 1–15.
- World Values Survey Association, 2009. World Values Survey 1981–2008 Official Aggregate v.20090901, Available electronically from <http://www.jdsurvey.net>