

Economic Freedom and Religion: An Empirical Investigation

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Abstract

There has been much study of the consequences of economic freedom but, outside of the role of political institutions, there has been little study of the determinants of economic freedom. We investigate whether religion affects economic freedom. Our cross-sectional data set includes 137 countries averaged over the period 2001–2010. Simple correlations show that Protestantism is associated with economic freedom, Islam is not, with Catholicism in between. The Protestant ethic requires economic freedom. Our empirical estimates, which include religiosity, political institutions, and other explanatory variables, confirm that Protestantism is most conducive to economic freedom.

Keywords

economic freedom, Protestant ethic, religion, religiosity, Catholicism, Islam, democracy, autocracy

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The benefits of economic freedom have been widely documented.¹ If economic freedom is beneficial, what determines the economic freedom that a population has? We expect economic freedom to be associated with democracy or political freedom.² In low-income countries, authoritarian rulers and supportive elites have reason to deny economic freedom to preempt emergence of a middle class that would threaten regime security by seeking accountability from government and democracy. The concern of the authoritarian ruler and supportive elites may also be that personal wealth made possible by economic freedom will be used to contest the privileges and rents available through control of authoritarian government.³

We investigate whether economic freedom can be explained by religion independently of political institutions. We consider three religions—Protestantism, Catholicism, and Islam—with origins in Judaism. The principles of Jewish law emphasize ethical behavior in market transactions and also particularly with regard to charity (Tamari 1993, 1996). Wealth in biblical times was viewed as due to good fortune through birth and, because of uncertainties in agricultural societies, as involving the weather and transporting goods and animals. The obligation under Jewish law to act with charity toward those to whom fate has been unkind was included in the doctrines of the Christian Church and Islam.⁴ Protestantism has, however, taken a contrary position in emphasizing productiveness through personal effort rather than charity. Judaism also has a concept of “correcting the world” through personal endeavor. Luther viewed Protestantism as close enough to Judaism to invite the Jews to join him in his reformed religion (the Jews declined).

Protestantism initiated by Luther rejected the claim that souls of the deceased could be trapped in Purgatory between Heaven and Hell and would go to Hell if not released to Heaven for an appropriate payment to the Catholic Church. Such payment was regarded as akin to extortion from living relatives. The basis for extortion was ended through the doctrine of predetermination. If a person’s fate in the afterlife was predetermined at birth, salvation could not be influenced by payments to the Church or by any other means. An essential conservatism associated with Lutheran doctrine maintained that people were to be content with their station in life and should not attempt to progress or consume beyond their place in the society. Predetermination had unfortunate psychological consequences. People were subject to anxiety because of the uncertainty about whether they were predestined for Heaven or Hell. The psychological restart offered by the Catholic Church through confession to a priest was not available. Protestantism perceived of no need for another man to be an intermediary

between a person and God. The solution to the anxiety about whether a person was predestined for Heaven or Hell was given by Zwingli and Calvin and other Protestant reformers, who proposed that believers were obliged to believe that they were among the chosen who would to be saved. Work was pleasing to God and tamed worldly desires. The people who believed themselves to be chosen should therefore devote themselves to productive work even if they were already rich. Weber ([1904] 1958) formulated the concept of the Protestant ethic against the background of certainty in salvation being revealed by being the instrument of God in being productive and creating profits and wealth.

Success in revealing salvation according to the principles of the Protestant ethic requires economic freedom to satisfy a deep emotional need.⁵ People who need to substantiate their belief that they are chosen for salvation will not wish their government to deny them the economic freedom that they require for the productive work that reveals their salvation. Catholicism does not have the same emotional need for economic freedom: salvation comes through belief and the slate of sins can always be wiped clean through confession and repentance. The prediction is therefore that Protestantism is more conducive to economic freedom than Catholicism because of the emotional need under Protestantism for economic freedom to verify being among the chosen for salvation.

There are, however, qualifications. With work in itself the key to self-substantiation of having been chosen for salvation, people will work independently of personal reward. Protestantism is therefore consistent with a welfare state that offers little monetary incentive for personal effort based on personal reward but regards as damned someone who does not work and relies on the welfare state to survive. The question is therefore open as to whether a Protestant population is necessarily associated with greater economic freedom. Different answers are suggested depending on the influence of the doctrine of Luther or other forms of Protestantism that have origins in Zwingli and Calvin.

Kuran (1997, 2004, 2010) has described the impediments to economic freedom under Islam. Rule under Islam has been authoritarian with usually an emphasis on the wealth of the ruler and his tribe rather than the welfare of the general population. Protection of private property rights has been limited, leading to a phenomenon of people hiding their wealth and also men hiding their women.⁶ The institution of a waqf or trust with a designated religious objective has been a traditional means of protecting wealth from appropriation under Islam, but reallocation of resources has been constrained by the complexity of redefining the objectives permissible to the

waqf when needs and opportunities change. Islam has also retained a conservative view of the prohibition on interest. The original Jewish biblical prohibition on interest had a social-justice motivation: people who had fallen on hard times and needed to borrow to survive should not be additionally burdened by payment of interest. The borrowing was for consumption until self-reliance could be restored. Interest payments involving investment and trade were matters that could be accommodated through risk- and profit-sharing arrangements. Christianity initially took the interest prohibition literally.⁷ Whereas Christianity has changed from the original interpretation of a prohibition on interest, Islam has not.⁸

Where Islam is strictly adhered to, women may be denied access to labor markets or may be required to work only where other workers are also female, because of prohibitions on contact with males from outside the family, including being in the unchaperoned presence of nonfamily males. Dress requirements of Islam for women are not consistent with all forms of employment. In contrast, the economic benefits of Protestantism have been proposed to be associated with the requirement of literacy for individual study of the bible including literacy for girls and women.⁹

The supreme values of Islam contradict economic freedom. The lexicographic ordering of objectives requires first achieving the high-priority goals of spreading Islam and liberation of land that was once in the domain of Islam before seeking material objectives. There is, therefore, a religious need to disallow economic freedom to compel a focus on confronting non-believers and acquiring wealth and property, and women, through conquest See Bernholz (1995) and Hillman (2007b).

The prediction for our study is therefore that Islam is associated with low economic freedom.¹⁰ Authoritarian government, however, diminishes economic freedom and Muslim-majority countries tend to be autocratic.¹¹

Religion may be nominal only and differ from the actual practice of religion or religiosity. Our data show religiosity to be high in Muslim-majority countries. Islam therefore provides a direct contemporary connection between religion and economic freedom. In Europe, in particular, Protestant and Catholic religiosity are low. In the Scandinavian countries and also elsewhere in secular but nominally Christian countries, the state has replaced religion and reliance on God as the protector of life and security.¹² Where religiosity is low, the relation between religion and economic freedom reflects intertemporal transmission of priors of past religious belief. Such intergenerational transmission has been found historically in other connections between past and more contemporary behavior.¹³

Our data, which are cross-sectional for 137 countries averaged over the period 2001–2010, show correlations between economic freedom and religion indicating that Protestantism is conducive to economic freedom, Islam is not, and Catholicism is somewhere in between. Economic freedom is positively associated with Protestantism ($r = .27$) and negatively associated with Islam ($r = -.21$). For Catholicism, the correlation is close to 0 ($r = -.06$). The correlation coefficient between the economic freedom index and religiosity is $-.48$, indicating that, on average, where religiosity is high, economic freedom is low.

Our empirical estimates confirm that high economic freedom is explained by the presence of Protestant populations. Results for Catholicism tend to be insignificant. There are indications in the results that Islam is inimical to economic freedom. Democracy is, as expected, conducive to economic freedom and autocracy is not.

The primary conclusion from our empirical results supports Max Weber's claim of a Protestant ethic. Historically and traditionally, the emotional need of Protestantism to overcome the anxiety of personal uncertainty regarding predetermination required economic freedom. Even if religiosity in contemporary Protestant populations is low, the legacy of the Protestant ethic is economic freedom for individuals to be conscientiously productive. Taxes and the conditionality of income transfers, on the other hand, diminish economic freedom. Our empirical results using Scandinavian legal origin as an explanatory variable confirm that the presence of the conditions of the Scandinavian welfare state diminishes economic freedom.¹⁴

Data

Economic Freedom Indices

To measure economic freedom, we use the Economic Freedom of the World (EFW) index by Gwartney et al. (2014). The EFW index by Gwartney et al. (2014) is available for 152 countries over the period 1970–2011. For the period 1970–2000, there are data available every fifth year (1970, 1975, 1980, . . .); from 2000, annual data have been available. Economic freedom is measured in five broad areas: size of government (expenditures, taxes, and enterprises), legal structure and security of property rights, access to sound money, freedom to trade internationally, and regulation of labor, credit, and business. The economic freedom indices take on values between 0 (minimum economic freedom) and 10 (maximum economic freedom).

We use the average of the economic freedom indicators over the period 2001–2010. To avoid transient changes, we do not use the economic freedom indices in individual years. We estimate a cross-sectional model because the data on religion do not vary over time.

Religious Groupings and Religiosity

We use the data on religious groupings from Parker (1997). This database reports for each country the percentage of the population adhering to the most widespread world religions. The data are estimates based on different sources compiled in the calendar year 1994. Countries with a large share of Catholics in the population, for example, include Malta (97 percent), Paraguay (96 percent), and Spain (95 percent). The average Catholic share in the overall sample is 31.40 percent. Countries with a high share of Protestants include, for example, Estonia (100 percent) and Iceland (96 percent). The average Protestant share in the sample is 13.73 percent. With some few exceptions, countries with Muslim majorities do not accommodate significant non-Muslim minorities. Countries with Muslim majorities include Yemen (100 percent), Algeria (99 percent), Mauritania (99 percent), and Morocco (99 percent). The average Muslim share in the sample is 21.45 percent. Protestantism, Catholicism, and Islam account for 66.58 percent of the total world population in our data. We place other religions in a residual “others” category.

For religiosity, we use the variable of Berggren and Bjørnskov (2013) based on the Gallup World View question about importance of religion. Respondents were asked: “Is religion an important part of your daily life?” Berggren and Bjørnskov computed the share of respondents of an individual country replying “yes” to this question. The religiosity variable takes on values between 0 (minimum) and 1 (maximum). Previous studies such as Halman and Draulans (2006) have confirmed that the answers to the Gallup World View question are a suitable means by which to measure religiosity. The data compiled by Berggren and Bjørnskov (2013) are based on polls in the years 2009–2012. We acknowledge that ideally religiosity measured over the period 2009–2012 should not be used to explain economic freedom over the period 2001–2010, but we base our use of the data on religiosity changing little within a country in the short run. Variation is likely to arise across countries and not within a country over time. Low-religiosity countries include Sweden (0.17), China (0.16), and Estonia (0.15). High-religiosity countries include Egypt (1), Bangladesh (0.99), and Indonesia (0.99), which are all Muslim-majority. Our full data set includes 137 countries.

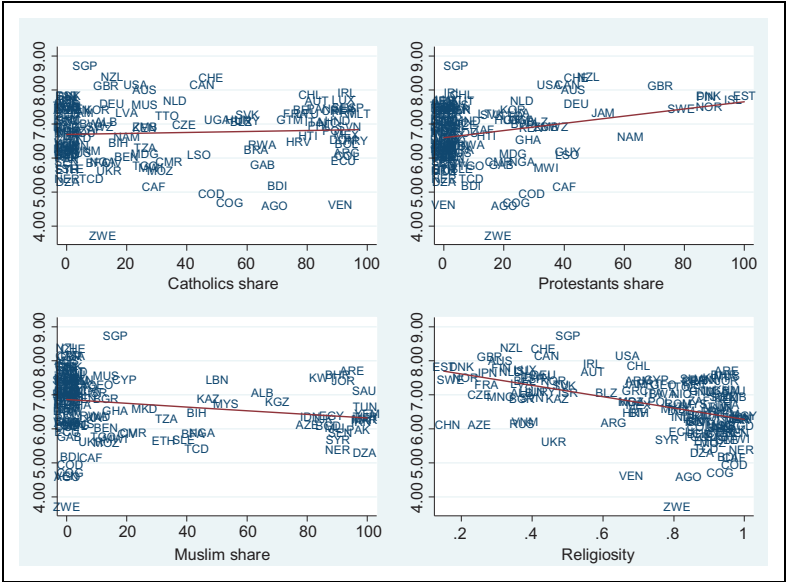


Figure 1. Correlations—Overall economic freedom index (averaged over the period 2001–2010); the share of Catholics, Protestants, Muslims, and religiosity.

Correlations

To illustrate the association between economic freedom, religion, and religiosity, we first present correlations between the overall economic freedom index, Catholic, Protestant, and Muslim majorities, and religiosity. Figure 1 shows the correlations, which we previously indicated in our summary of results. The overall economic freedom index is positively associated with the Protestant population share ($r = .27$), negatively with the Muslim population share ($r = -.21$), and shows almost zero correlation for the Catholic population share ($r = .06$). Countries with Protestant majorities and high economic freedom include, for example, the United Kingdom, Sweden, and Estonia. Economic freedom was less present in Muslim-majority countries such as Niger and Algeria. The correlation coefficient between the overall economic freedom index and religiosity of $-.48$ indicates that economic freedom declined with the proportion of religious citizens in the populations. Countries with low economic freedom and high religiosity include, for example, Myanmar and Zimbabwe. Economic freedom is high and religiosity is low, for example, in Hong Kong, Denmark, and Estonia. Table A1 shows the correlation coefficients.

The Empirical Model

The basic econometric model has the form:

$$\begin{aligned} \text{Economic freedom}_i = & \sum_k \alpha_k \text{religion}_{ik} + \beta \text{religiosity}_i + \sum_k \gamma_k \text{religion}_{ik} \\ & \times \text{religiosity}_i + \sum_l \delta_l \text{continent}_{il} \\ & + \sum_m \epsilon_m \text{legal origin}_{im} + \sum_n \zeta_n x_{in} + u_i, \end{aligned} \quad (1)$$

with $i = 1, \dots, 137$; $k = 1, \dots, 3$; $l = 1, \dots, 4$; $m = 1, \dots, 4$; and $n = 1$ and 2.

The dependent variable *economic freedom*_{*i*} is economic freedom in country *i*. *Religion*_{*ik*} describes the religion variables with distinctions between Catholics, Protestants, Muslims, and others (reference category). *Religiosity*_{*i*} is the religiosity variable. *Religion*_{*ik*} × *religiosity*_{*i*} is the interaction term between the religion and religiosity variables. We include the interaction term to test whether religiosity mitigated or enhanced the association between religion types and economic freedom. *Continent*_{*il*} are continental dummy variables with the value 1 if country *i* belongs to continent *l* and 0 otherwise. We distinguish Africa (reference category), Asia, Europe, America, and Oceania. *Legal origin*_{*im*} are legal origin dummy variables (La Porta et al. 1999). We distinguish five different legal origins: British (reference category), French, German, Scandinavian, and socialist.¹⁵ We expect economic freedom in countries with British legal origin to be more pronounced than economic freedom in countries with French, German, Scandinavian, and socialist legal origin. $\sum_n \zeta_n x_{in}$ contains the logarithm of per capita gross domestic product (GDP) and a democracy variable (Cheibub, Gandhi, and Vreeland 2010). Per capita GDP is the average of the annual data over the period 2001–2010. The democracy variable is the average of the annual data over the period 2001–2008 because the data from Cheibub, Gandhi, and Vreeland (2010) is only available until 2008. Table 1 shows descriptive statistics of all variables. We estimate the model with ordinary least squares and standard errors robust to heteroscedasticity (Huber/white/sandwich standard errors—see Huber 1967; White 1980).

Results

Baseline Results

Table 2 shows the regression results. Columns 1 and 2 corroborate the simple correlations between the types of religion variables, religiosity, and

Table 1. Data Description and Sources.

Variables	N	M	SD	Minimum	Maximum	Source
Overall economic freedom	137	6.74	0.86	3.73	8.73	Gwartney et al. (2014)
Catholics (share)	137	31.40	35.57	0	97	Parker (1997)
Protestants (share)	137	13.73	22.23	0	100	Parker (1997)
Muslims (share)	137	21.45	34.05	0	100	Parker (1997)
Religiosity	137	0.72	0.25	0.15	1	Gallup World View (Berggren and Bjørnskov 2013)
Africa	137	0.28	0.45	0	1	Own calculation
Asia	137	0.25	0.43	0	1	Own calculation
Europe	137	0.27	0.45	0	1	Own calculation
Americas	137	0.18	0.39	0	1	Own calculation
Oceania	137	0.01	0.12	0	1	Own calculation
British legal origin	137	0.27	0.45	0	1	La Porta et al. (1999)
French legal origin	137	0.45	0.50	0	1	La Porta et al. (1999)
Socialist legal origin	137	0.20	0.40	0	1	La Porta et al. (1999)
German legal origin	137	0.04	0.21	0	1	La Porta et al. (1999)
Scandinavian legal origin	137	0.04	0.19	0	1	La Porta et al. (1999)
Per capita GDP	137	12,434.13	14,197.52	211.24	73,044.70	PENN World Table 7.1 (Summers and Heston 1991)
Democracy	137	0.63	0.47	0	1	Cheibub, Gandhi, and Vreeland (2010)
Religious fractionalization	137	0.44	0.24	0	0.86	Alesina et al. (2003)

Note: SD = standard deviation; GDP = gross domestic product.

economic freedom. Column 3 shows results when the types of religion and the religiosity variable are included. Column 4 also includes the interaction terms between the types of religion variables and the religiosity variable. We discuss marginal effects below. Columns 5–12 indicate that including/excluding individual control variables does not change the inferences regarding the types of religion variables.

The control variables display the expected signs and are statistically significant in several cases. The democracy variable, for example, has the expected positive sign and is statistically significant at the 1 percent level in columns 5 and 6, 5 percent level in column 7, 10 percent level in column 9, and just slightly lacks statistical significance at the 10 percent level in column 12. Economic freedom was about 0.3 to 0.7 points higher in democracies as compared to autocracies.

The Asian continent dummy variable is statistically significant at the 1 percent level in column 10 and 10 percent level in column 12, indicating that the overall economic freedom index was about 0.34 points higher in Asian countries compared to African countries. The Oceania continent dummy variable is statistically significant at the 1 percent level in column 10 and at the 10 percent level in column 12 indicating that the overall economic freedom index was about 0.57 points higher in countries in Oceania compared to African countries. The continent dummy variables for European and American countries have a positive sign and are statistically significant in column 10 but lack statistical significance in column 12. The coefficients of the Scandinavian legal origin variable are statistically significant at the 10 percent level in column 8, at the 5 percent level in column 9 and at the 1 percent level in column 10, and indicate that the economic freedom index was about 0.54 to 0.67 points lower in countries with a Scandinavian legacy compared to countries with a British legal origin. This finding reflects Scandinavian countries having a large size and scope of government. Log per capita income is statistically significant at the 1 percent level in columns 11 and 12 and has the expected positive sign. The numerical meaning of the coefficient in column 12 is that the overall economic freedom index was by 0.0041 points higher than in an otherwise identical country that had a 1 percent larger per capita income.

The marginal effects of the religion variables are interpreted conditionally on the interaction with the religiosity variable. Figures 2–4 show marginal effects of the Catholic, Protestant, and Muslim population share variable as compared to the “other” category of religions evaluated at different levels of religiosity (referring to the regression in column 12). The marginal effects are statistically significant at the 5 percent level when the 95 percent confidence interval does not include the zero line. Figure 2 shows that the Catholic

Table 2. Regression Results: Ordinary Least Squares with Robust Standard Errors (Dependent Variable: Overall Economic Freedom Index).

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Catholics (share)	0.00901 (0.39)		0.00248 (1.10)	0.0117* (1.85)	-0.00115 (-0.53)	0.000757 (0.37)	0.00902 (1.63)	0.0110** (2.02)	0.00858* (1.67)	0.00677 (1.12)	-0.000088 (-0.02)	0.00333 (0.60)
Protestants (share)	0.0093*** (3.32)		0.00542* (1.96)	0.0152** (2.60)	0.0081*** (3.35)	0.00528** (2.06)	0.0122*** (2.40)	0.0204*** (3.12)	0.0178*** (2.92)	0.0140*** (2.74)	0.00747* (1.90)	0.0145*** (3.31)
Muslims (share)	-0.00286 (-1.22)		0.00136 (0.53)	-0.00893 (-1.19)	-0.000288 (-0.11)	0.00242 (0.90)	-0.00481 (-0.74)	-0.00331 (-0.43)	-0.000417 (-0.06)	-0.00399 (-0.61)	-0.00222 (-0.34)	-0.000092 (-0.01)
Religiosity		-1.663*** (-6.89)	-1.554*** (-5.26)	-0.839 (-1.48)		-1.275*** (-4.60)	-0.764 (-1.52)	-0.840 (-1.47)	-0.816 (-1.47)	-0.182 (-0.33)	0.483 (1.26)	0.710 (1.48)
Catholics (share) × religiosity				-0.0139 (-1.59)			-0.0119 (-1.51)	-0.00770 (-0.95)	-0.00609 (-0.78)	-0.00769 (-0.87)	-0.00329 (-0.49)	-0.00507 (-0.64)
Protestants (share) × religiosity				-0.0216** (-2.03)			-0.0149 (-1.45)	-0.036*** (-3.27)	-0.030*** (-2.69)	-0.0128 (-1.17)	-0.00883 (-1.18)	-0.0132 (-1.60)
Muslims (share) × religiosity												
Asia							0.00566 (0.70)	0.00481 (0.51)	0.00281 (0.32)	0.00447 (0.53)	-0.00161 (-0.22)	-0.00218 (-0.28)
Europe									0.885*** (4.04)	0.342* (1.87)		
Americas									1.073*** (4.48)	0.0869 (0.32)		
Oceania									0.835*** (3.43)	0.175 (0.68)		
									1.387*** (4.12)	0.566* (1.73)		

(continued)

Table 2. (continued)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
French legal origin								-0.644*** (-3.48)	-0.61*** (-3.22)	-0.337* (-1.71)		-0.179 (-1.06)
Socialist legal origin								-0.537** (-2.49)	-0.526** (-2.35)	-0.547** (-2.49)		-0.00741 (-0.03)
German legal origin								0.235 (1.12)	0.171 (0.82)	0.245 (1.07)		0.125 (0.64)
Scandinavian legal origin								-0.672* (-1.98)	-0.679** (-2.19)	-0.637*** (-2.72)		-0.537** (-2.52)
Log per capita GDP											0.473*** (9.90)	0.406*** (5.35)
Democracy					0.683*** (3.70)	0.482*** (2.68)	0.399** (2.18)		0.321* (1.81)			0.213 (1.54)
Constant	6.645*** (43.08)	7.939*** (43.54)	7.679*** (29.78)	7.286*** (17.51)	6.243*** (30.46)	7.210*** (23.25)	6.974*** (17.45)	7.570*** (16.76)	7.34*** (15.18)	6.334*** (12.04)	2.405*** (4.35)	2.475*** (2.80)
Observations	137	137	137	137	137	137	137	137	137	137	137	137
R ²	.0920	.234	.251	.289	.204	.301	.321	.382	.402	.499	.576	.626

Note: t-statistics are given in parentheses. GDP = gross domestic product.

*p < .10.

**p < .05.

***p < .01.

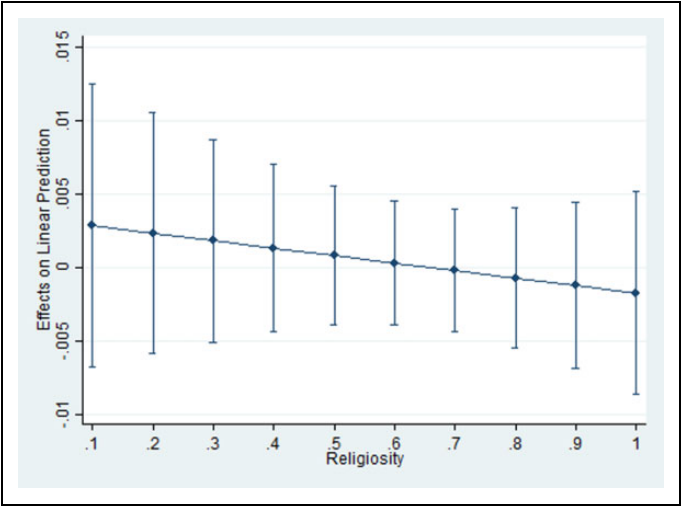


Figure 2. Marginal effect of the *Catholics* share as compared to other religions. Conditioned on religiosity. Effects refer to column 2 of table 2—Overall economic freedom index.

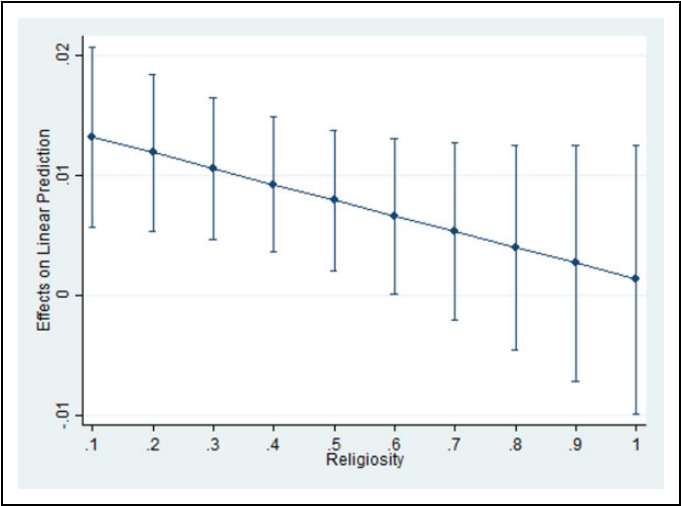


Figure 3. Marginal effect of the *Protestants* share as compared to other religions. Conditioned on religiosity. Effects refer to column 2 of table 2—Overall economic freedom index.

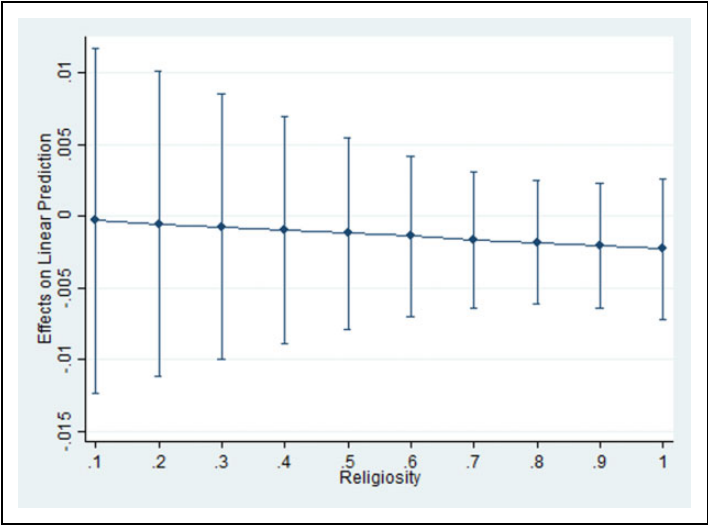


Figure 4. Marginal effect of the *Muslim* share as compared to other religions. Conditioned on religiosity. Effects refer to column 2 of table 2—Overall economic freedom index.

share does not turn out to be statistically significant evaluated at any level of religiosity. Figure 4 shows that the Muslim share has a negative sign but does not turn out to be statistically significant evaluated at any level of religiosity. Consequently, when we control for the explanatory variables per capita GDP and political institutions, there is no evidence to conclude that Muslim-majority countries have less economic freedom than countries with other religious majorities.

By contrast, there are significant marginal effects describing differences in Protestant influence in religious and nonreligious countries (figure 3). Countries with Protestant majorities had significantly greater economic freedom than countries with other religious majorities when the religiosity variable has values smaller than 0.7 (on a scale from 0 to 1 for pure nonreligious and pure religious countries). In pure nonreligious countries, for example, the economic freedom index was by about 0.013 points lower than in an otherwise identical country having a 1-percentage point larger share of Protestants, implying that the economic freedom index in a nonreligious country with no Protestants was 1.3 points lower than in an otherwise identical but purely Protestant nonreligious country. This marginal effect is statistically significant at the 1 percent level. The marginal effect of the Protestant share variable

evaluated for pure religious countries does, however, not turn out to be statistically significant, indicating that Protestantism did not result in greater economic freedom in religious (high religiosity) countries.

Robustness Tests

We tested whether our results are robust in several ways. Religious fractionalization may predict economic freedom, and the effects of the types of religion variables may, as well, depend on religious fractionalization. For religious fractionalization, we use the variable of Alesina et al. (2003). The religious fractionalization variable takes on values between 0 (minimum) and 1 (maximum). Countries with low religious fractionalization include Algeria (0.0091), Turkey (0.0049), and Yemen (0.0023). Countries with high religious fractionalization include Australia (0.8211), South Africa (0.8603), and the United States (0.8241).

Table 3 shows the results when the religious fractionalization variable is included and interacted with the types of religion. Religious fractionalization does not turn out to be statistically significant. Countries with Protestant majorities enjoyed economic freedom when religious fractionalization was low.

We replaced the “types of religion” variables measuring the share of population adhering to an individual religion by dummy variables taking the value 1 when the predominant religion share was 60 percent or larger. Inferences do not change. In countries with Protestant majorities and hardly any religiosity, the EFW index was about 0.98 points higher than in other countries.

Democracies and Dictatorships

Previous studies have shown that the presence of economic freedom is influenced by political institutions. The effects of religion and religiosity on economic freedom may well differ in democracies and autocracies. We therefore split the sample into democracies and autocracies by using the measure of Cheibub, Gandhi, and Vreeland (2010). Because the measure for political institutions is binary and we take averages of economic freedom over the period 2001–2010, we arrive at 81 pure democracies, 10 transition countries, and 46 pure dictatorships when splitting our sample of 137 countries. The EFW index is 7.04 in democracies and 6.35 in dictatorships.

The results show that the effect of Protestantism on economic freedom is strong in democracies. The marginal effect of Protestantism is statistically significant for values of the religiosity variable between 0 and 0.9. This

Table 3. Regression Results: Ordinary Least Squares with Robust Standard Errors
(Dependent Variable: Overall Economic Freedom Index).

	(1)	(2)	(3)	(4)	(5)
Catholics (share)		-0.000546 (-0.24)	0.00450 (0.93)	0.00163 (0.35)	-0.00243 (-0.56)
Protestants (share)		0.00956*** (3.53)	0.00939** (2.05)	0.0348** (2.50)	0.0278** (2.54)
Muslims (share)		-0.00475* (-1.88)	-0.00622* (-1.93)	0.00229 (0.55)	-0.00123 (-0.32)
Religious fractional	-0.0841 (-0.25)	-0.550* (-1.67)	-0.451 (-0.64)	0.440 (0.57)	-0.0825 (-0.13)
Catholics (share) × religious fractional			-0.0151 (-1.02)	-0.00211 (-0.18)	0.00560 (0.49)
Protestants (share) × religious fractional			0.00419 (0.27)	-0.0463* (-1.74)	-0.0355* (-1.74)
Muslims (share) × religious fractional			0.00790 (0.66)	-0.00516 (-0.45)	0.00303 (0.31)
Asia				1.010*** (5.15)	0.329* (1.69)
Europe				1.380*** (6.99)	0.134 (0.47)
Americas				0.946*** (4.27)	0.197 (0.88)
Oceania				2.085*** (6.91)	0.820** (2.35)
French legal origin				-0.355* (-1.90)	-0.233 (-1.52)
Socialist legal origin				-0.633*** (-3.07)	-0.211 (-1.08)
German legal origin				0.241 (1.02)	-0.0243 (-0.13)
Scandinavian legal origin				-1.847** (-2.53)	-1.700*** (-2.96)
Log per capita GDP					0.381*** (5.46)

(continued)

Table 3. (continued)

	(1)	(2)	(3)	(4)	(5)
Democracy					0.242* (1.73)
Constant	6.777*** (47.89)	6.972*** (32.73)	6.908*** (28.87)	5.893*** (16.59)	3.253*** (5.61)
Observations	137	137	137	137	137
R ²	.0005	.110	.131	.493	.627

Note: t-statistics are given in parentheses. GDP = gross domestic product.

* $p < .10$.

** $p < .05$.

*** $p < .01$.

interval for the religiosity variable is much larger than the interval in the full sample. The marginal effects of the Catholics and Muslim variables do not turn out to be statistically significant. In dictatorships, the religion variables do not turn out to be statistically significant.

Conclusions

There has been no prior study of the relation between religion and economic freedom, even though a relation is suggested by Weber's Protestant ethic and in studies by Timur Kuran and others of economic incentives under Islam. Our results add to the literature on the influence of religion on economic behavior and phenomena.¹⁶ Our primary conclusion is that the persistent significance of Protestant populations is an indicator of the presence of economic freedom. Weber's Protestant ethic is supported, even though religiosity in Protestant populations, particularly outside of the United States, tends to be low. Our results substantiate that cultural transmission results in retention of values when past beliefs and circumstances that gave rise to the values are no longer present.

Because economic freedom is a requisite of economic progress, our results imply that the religious composition of a population and religiosity can affect economic development and incomes. The religious composition of a population and religiosity in general change only slowly through differential fertility in different religious groups. Large-scale migration can, however, result in abrupt change in religious composition and religiosity among a country's population. Our results suggest that religion and religiosity of immigrants can have consequences for economic freedom.

Appendix

Table A1. Correlations—Overall Economic Freedom Index (Averaged over the Period 2001–2010) and the Share of Catholics, Protestants, Muslims, Religiosity, and Religious Fractionalization (137 Observations).

	Overall economic freedom	Catholics (share)	Protestants (share)	Muslims (share)	Religiosity	Religious fraction- alization
Overall economic freedom	1.00					
Catholics (share)	.06	1.00				
Protestants (share)	.27	-.15	1.00			
Muslims (share)	-.21	-.49	-.33	1.00		
Religiosity	-.48	.00	-.37	.37	1.00	
Religious fractionalization	-.02	-.16	.27	-.31	-.08	1.00

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Notes

1. Economic freedom results in higher incomes and greater economic growth (Compton, Giedeman, and Hoover 2011; De Haan and Sturm 2000; De Haan, Lundström, and Sturm 2006; Pitlik 2002; Rode and Gwartney 2012; Rode and Coll 2012). Workers benefit through a higher share of national income (Young and Lawson 2014). Benefits have also been reported through increased tolerance (Berggren and Nilsson 2013), greater trust or social capital (Berggren and Jordahl 2006), lower unemployment (Feldmann 2007), policies against human trafficking (Heller et al. 2016), and feelings of “life satisfaction,” “happiness,”

and “perceived life control” (Gehring 2013; Knoll, Pitlik, and Rode 2013a, 2013b; Rode 2013; Pitlik and Rode 2014). Studies have also combined economic freedom with other influences: Williamson and Mathers (2011) find that aspects of culture can substitute for absent economic freedom. Berggren (2003) and Hall and Lawson (2014), in overviews, associate the beneficial effects of economic freedom with protection of property rights, unencumbered domestic and foreign trade, access to credit and productive inputs, and people retaining their incomes for personal spending. Berggren and Nilsson (2016) use data on the individual states of the United States to study how economic freedom affects tolerance for different groups and types of behavior.

2. On exceptions, particularly in East Asia, see Paldam (2003). See Bjørnskov and Potrafke (2012, 2013) and Potrafke (2013a) on government ideology and economic freedom.
3. On disincentives of authoritarian rulers and elites to allow economic freedom, see Hillman (2007a). Economic freedom has also been found to be negatively associated with foreign aid, which is usually received by autocratic governments (Young and Sheehan 2014), and negatively associated with linguistic and ethnic fractionalization (Heckelman and Wilson 2017), which tends to result in autocracy (see the literature cited in Hillman, Metsuyanin, and Potrafke 2015). Rode and Revuelta (2015) conclude that populist governments also diminish economic freedom. Reforms toward more economic freedom are more likely in democracies (Pitlik 2008).
4. The Jewish scholar Rabbi Moshe Ben Maimon, also known as Moses Maimonides (1135–1204 CE) and by the acronym the Rambam, distinguished eight degrees of charity according to whether there is anonymity and whether giving is sincere, with the highest degree of charity being that which makes the recipient self-sufficient. Anonymity is regarded as virtuous in Islam: Lambarraa and Riener (2012) report experimental evidence from Muslim Morocco showing that anonymity increased the incidence of giving (from 59 percent to 77 percent) and among students at religious schools increased the average amount given (from 8.90 to 13.00 in local currency). Evidence from experiments in Christian societies shows that people tend to give more when their giving is observed by others (see Soetevent 2005, on church giving, although, in repetitions of the experiments, the effect of visible giving diminished but larger coins were used in donations).
5. van Winden (2007) provides an overview of the effect of emotions on behavior and public policy.
6. The inhibitions to economic growth due to the nature of the rule of law under Islam have been described by Facchini (2010), Gouda (2013), and Gutmann and Voigt (2015).

7. Throughout European history, Christian borrowers often relied on Jewish bankers for credit. The role of Jews as lenders often contributed to prejudice against Jews (Carlton 1995; Hillman 2013). Jews were regarded as “unproductive” in earning income through interest. Jews took upon themselves the risk of providing credit that facilitated farmers’ receiving payment for crops that had not yet been harvested and for which the future market price was unknown (Aronson 1990).
8. Islamic law or Sharia requires technical and definitional devices to circumvent the interest prohibition (see Siddiqi 1983). Depending on location, banking in Muslim-majority countries need not, however, be significantly different from banking in western societies (see, e.g., Chong and Liu 2009).
9. On Protestantism and female literacy, see Becker and Woessmann (2008, 2009). Discrimination against women in Muslim-majority countries has been documented in numerous studies (see Donno and Russett 2004; Norton and Tomal 2009; Cooray and Potrafke 2011; Kilby and Scholz 2011; Cooray 2012; Potrafke and Ursprung 2012; Cho 2013; Cooray and Klasen 2014; Gutmann and Voigt 2015; Salahodjaev and Azam 2015; Potrafke 2016). Discrimination against women is more pronounced when Islam is the source of legislation (Gouda and Potrafke 2016).
10. In a comprehensive empirical study, McCleary and Barro (2006) found that Islam among religions is most discouraging of economic growth.
11. See Fish (2002), Karatnycky (2002), Voigt (2005), Borooah and Paldam (2007), Rowley and Smith (2009), and Potrafke (2012, 2013b). For an exception, see Hillman, Metsuyanin, and Potrafke (2015), who studied elections in Muslim-majority local-government constituencies in Israel. Voter turnout in Muslim-majority municipalities in many cases approached 100 percent against a background of decisiveness in voting by extended families in local elections.
12. Buchanan (2005) describes the need for dependence to satisfy individual feelings of insecurity and describes how in some secular societies the state has taken the place assigned to religious belief in previous times.
13. For example, for evidence on sustained prevalence of prejudice against Jews in some European regions over centuries, see Voigtländer and Voth (2012). For a model describing intergenerational transmission of preferences, see Bisin and Verdier (2000).
14. Paldam (2015) has described restrictions on economic freedom in the Scandinavian welfare state through the successful rent seeking of a majority “welfare coalition” that benefits from spending and taxation policies.
15. Legal origin does not predict convergence in economic freedom (as measured as the difference in the Economic Freedom of the World indices in the years 2010 and 1980—see Hall 2016). Economic freedom at the state level in the United

States is lower in states with a civil legal law tradition than in states with common legal law tradition (Nattinger and Hall 2012).

16. On economics and religion, see Iannaccone (1998) and more recently Guiso, Sapienza, and Zingales (2003); Barro and McCleary (2005); Helble (2007); Berggren and Bjørnskov (2013); and Chadi and Krapf (2015). Schneider, Linsbauer, and Heinemann (2015) showed that countries with Protestant majorities have smaller shadow economies. Becker et al. (2015) studied discrimination in voting behavior involving Israel in the United Nations (UN) General Assembly and found that only three Protestant-majority non-European countries consistently do not join in decoy voting to criticize Israel. The decoy voting distracts attention in the UN voting agenda from human rights violations of authoritarian governments.

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