Online Appendix A: Proofs

In what follows, we make frequent use of the theory of monotone comparative statics. For convenience, we refer to all theorems that we utilize by their numbers in Ashworth and Bueno de Mesquita (2006). Citations to the original theorems may be found therein. As noted in the main text, all of our distributions satisfy the monotone likelihood ratio property (MLRP), which implies that they also satisfy a related first-order stochastic dominance (FOSD) relation. Formally, for the distribution of w, MLRP amounts to the condition that $\frac{f(w|e_1)}{f(w|e_2)}$ is not decreasing in w if $e_1 \geq e_2$, and similarly for $g(e|\theta)$ and $h(z|\rho)$. The MLRP implies that $f(w|e_1)$ first-order stochastically dominates $f(w|e_2)$ if $e_1 \geq e_2$, and again likewise for the other two distributions.

Proof of Lemma 1:

The first step in backward induction gives us the optimal $r_i^*(y_i; e_i, z_i, \theta, \rho, \nu, \phi)$ that maximizes Eq. (2) for a given value of y_i. Only u^b depends on both y_i and r_i, so the direct dependence of $r_i^*(y_i)$ on y_i must arise from this term. If $r_i \leq r_i^y(y_i)$, then, by assumption, u^b is increasing in $r^d = r_i^y(y_i) - r_i$, and at an increasing rate, which implies $\frac{\partial^2 u^b}{\partial(r^d)^2} = \frac{\partial^2 u^b}{\partial(r_i^y)^2} = \frac{\partial^2 u^b}{\partial(y_i)^2}\left(\frac{\partial r_i^y}{\partial y_i}\right)^{-2} = -\frac{\partial^2 u^b}{\partial y_i \partial r_i}\left(\frac{\partial r_i^y}{\partial y_i}\right)^{-1} \geq 0$. Since $\frac{\partial r_i^y}{\partial y_i} \geq 0$, $\frac{\partial^2 u^b}{\partial y_i \partial r_i} \leq 0$, and u^b is submodular in r_i and y_i, then this implies that individual *i*'s expected utility, EU_i, is supermodular in r_i and y_i for $r_i \leq r_i^y(y_i)$. Now consider $r_i > r_i^y(y_i)$. There are two cases here. In the first, the case of conformity, the exact same logic applies, switching the order of differentiation: u^b is convex in r^d, and so convex in r_i, and so the cross-partial with r_i and y_i is negative. In the second, the case of social benefits, u^b is negative and increasing in r^d, but at a declining rate. So $\frac{\partial^2 u^b}{\partial(r^d)^2} = \frac{\partial^2 u^b}{\partial(r_i^y)^2} = -\frac{\partial^2 u^b}{\partial y_i \partial r_i}\left(\frac{\partial r_i^y}{\partial y_i}\right)^{-1} \geq 0$, and again the same logic holds. Thus, in all cases and for all relative values of r_i and $r_i^y(y_i)$, EU_i is supermodular in r_i and y_i. By Theorem 1 in Ashworth and Bueno de Mesquita (2006, 218), this implies that r^* is weakly increasing in y_i, giving us Lemma 1. Since u^b depends on no other terms than y_i and r_i, and as Lemma 1 provides the relevant dependence of the first on the second, we need no longer consider the conformity and social benefits cases separately in the proofs that follow.

Proof of Proposition 1:

First, note that only u^a contains e, and that it does not contain y. Thus, y cannot directly affect the marginal effect of e on the individual choice of r_i. Further, altering an individual's e does not affect the set Y

nor the set r_{-i} given the assumptions on the size of the population, N, for any positive cost of entry for denominations. This implies that to prove Proposition 1a we need only discern the relationship between r_i^* and e. This relationship will hold for any choice of y_i and any choice of the set Y by the denominations. Consequently, Proposition 1a holds trivially for any assumptions on denominations' utility functions. To obtain the proposition, recall that, by assumption, u^a is supermodular in w and $-r$. Because $f(w|e)$ satisfies the MLRP, we have that $-r^*$ is non-decreasing in e or, more clearly, that r^* is weakly decreasing in e by Theorem 5 in Ashworth and Bueno de Mesquita (2006, 228). Thus, treating e as an individual's potential to produce income, we see that participation is (weakly) decreasing in the degree to which an individual expects to produce income. This gives us Proposition 1a. Because EU_i is supermodular in y_i and r_i by Lemma 1, then $y_i^*(e_i, z_i, \theta, \rho, \nu, \phi) = y_i^*(z_i, r_i^*(e_i, \theta, \rho, \nu, \phi))$ must be weakly decreasing in e as well.

To prove Proposition 1b, first assume that the cost of entry for denominations is 0, and again note that no individual can alter the set r_{-i}. This implies, under a variety of assumptions on denominations' utility functions, that denominations of all strictness levels that have positive support in the distribution of y_i^* enter, where y_i^* is the strictness level a person would choose if all were available. By Lemma 1, r_i^* is weakly increasing in y_i. The only other parameter with which y_i directly interacts is z_i, in the function u^c. By an identical argument to the conformity case in the proof of Lemma 1, EU_i is supermodular in y_i and z_i. Since r_i and z_i do not interact directly in EU_i, this implies that y_i^* is weakly increasing in z_i. As r_i^* is weakly increasing in y_i and does not depend directly on z_i, it must therefore also be weakly increasing in z_i. Now assume a finite, positive cost of entry for denominations, which has the effect of limiting the number of denominations that enter, reducing the set Y. This implies that a more beneficial denomination might not be available to an individual with increased z_i; however, it does not change the result that no individual with an increased z_i would want to choose a denomination with a lower value of y^j. Thus the result continues to hold for any fixed Y. Since no single individual's decisions can alter the set Y, we need not consider the denomination's choice problem. This gives us Proposition 1b.

Propositions 1c, 1d, and 1e are more complex, in that varying the parameters ρ, ϕ, and θ leads to changes in *all* individuals' r_i simultaneously, affecting the sets r_{-i} and possibly Y. Consider θ first. Via v, r and θ are substitutes in u^a, ignoring the indirect effect of θ on p_i. Increasing θ also weakly increases all other individuals' e_k[1] and adds to their s_k via the redistribution inherent in v as well, implying that θ is a substitute for r_k for all other individuals in the denomination as well, again ignoring p_k. There are two cases to consider. Under positive externalities, r_i and p_i are complements, so that a decrease to all others' r_k implies a decrease to r_i^*, and vice versa. Thus all incentives point in the same direction here, and r_i^* and θ are substitutes in the full EU_i, implying that r_i^* is weakly decreasing in θ. What about the set Y? By the proof of Lemma 1, y^* must be weakly decreasing as well if r^* is decreasing. Thus the distribution of ideal y^* shifts weakly lower. The effect this shift has upon the optimal set Y is difficult to specify; there are likely to be multiple equilibria for Y. Shifting the distribution of ideal strictness could render an equilibrium no longer tenable, and in such cases it is not clear into which of its potential equilibria the system would switch. This is a common problem in game theoretic models with multiple equilibria, of course. However, if we assume that the system remains in the same equilibrium with the shift in the distribution of ideal strictness – a fair assumption almost everywhere (in the formal mathematical sense) given a small shift and reasonably dispersed denominations – so that the same number of denominations enter and each (or almost every) individual affiliates with the same denomination, then we can say more. Whether denominations maximize membership or the utility of their members, a shift lower of the distribution of ideal strictness weakly shifts the location choices of the denominations lower as well. This implies a weak shift downward in y_i^*, as individuals choose lower values of y^j in the new set Y. By Lemma 1 this implies a downward shift in r^* as well. Since both shifts are in the same directions as the effects of increasing θ, denominations' choices of locations in periods one and two cannot alter the conclusions of the analysis of periods three and four. This gives the first half of Proposition 1c.

For the second half, consider the club goods case. Now r_i and p_i are substitutes, and a decrease to all others' r_k implies an increase to r_i^*, which is contrary to the direction of the direct effect of θ on r_i^*. This is true for all individuals in the denomination simultaneously. If all individuals were identical we could rely on a symmetry argument to sign the effect of θ, but since they are not, we cannot. Instead, one's response to θ

[1]Since our distributions specify the parameters e and z of all members of the population, we make the natural assumption that a shift in a distributional parameter, which specifies a first order stochastic dominance relationship in the distribution, as θ does in the distribution of e, weakly increases all individuals' values of that parameter. This prevents individuals, who have zero measure in the distribution, from jumping around, which would make it difficult to stay in a particular affiliation equilibrium, and therefore difficult to deal with the problem of multiple equilibria discussed later.

depends on the relative magnitudes of the dependences of EU_i on v and on p, as well as the rates of change of v in θ and p in r_{-i}, for all individuals. Though this does not reduce to anything simple, we can note that if the dependence of EU_i on p_i is sufficiently small, then the behavior of others in the denomination will be insufficient to increase one's r^* more than increasing θ directly decreases it, implying that r^* will be decreasing in θ for this case as well. This occurs when $\left|\frac{\partial^2 u^a}{\partial r_i \partial v}\frac{\partial v}{\partial \theta}\right| >> \left|\frac{\partial^2 u^a}{\partial r_i \partial p_i}\frac{\partial p_i}{\partial r_{-i}}\frac{\partial r_{-i}}{\partial \theta}\right|$, which defines sufficiently weak incentives to free ride.[2]

Increasing regulation of religious activity, ϕ, plays a similar role in individuals' expected utilities as does increasing θ. There is a direct effect on r^* due to the fact that r_i and ϕ are substitutes in u^a, and there is the indirect effect via the incentive for all others in one's denomination to reduce their participation. Thus the same argument applies for ϕ as well, or $-\phi$ for regulation of secular activities, giving us Proposition 1d. The relevant inequality for sufficiently weak incentives to free ride is $\left|\frac{\partial^2 u^a}{\partial r_i \partial \phi}\right| >> \left|\frac{\partial^2 u^a}{\partial r_i \partial p_i}\frac{\partial p_i}{\partial r_{-i}}\frac{\partial r_{-i}}{\partial \phi}\right|$.

Proposition 1e is similar. Though u^a does not directly depend on ρ, increasing ρ does weakly increase all others' z_k, leading to an incentive for all others to raise their r^* by the argument of proposition 1b. If r and p are complements in u^a, as in the positive externalities case, then all incentives move r^* higher. If they are substitutes, as in the club goods case, then the incentives are at odds, and we again cannot sign the comparative static. The "direct" effect on person i here is actually indirect: if the net incentive of raising others' z_k on participation is positive, then the denomination will weakly increase its y^j in response, which forces an increase in y_i^*, which increases r_i^* by Lemma 1. The relevant inequality for sufficiently weak incentives to free ride is $\left|\frac{\partial^2 u^b}{\partial r_i \partial y^j}\frac{\partial y^j}{\partial r_{-i}}\right| >> \left|\frac{\partial^2 u^a}{\partial r_i \partial p_i}\frac{\partial p_i}{\partial r_{-i}}\right|$.

Proof of Remark 1:

The greater w, the weaker the benefit of redistribution *ex post*. Shifting the distribution of w to the right with increasing e thus weakly decreases preferences for redistribution regardless of the initial value of e. (More formally, as we show in the next proof, EU_i is supermodular in $-\nu$ and w_i.) This gives us Remark 1. On the aggregate level, improving human development—increasing θ—both directly increases one's revenue arising from redistribution via the dependence of v on θ, and leads to higher values of e in the population. The former decreases one's need for redistribution in the same manner that increasing e does. The latter has a more complex effect, though, in that shifting the distribution of e higher would, under most reasonable

[2] This is not a necessary condition, but it is sufficient if it holds for all values of the change in r_{-i}.

redistributive rules, alter $\hat{w}$. However, naively holding $\hat{w}$ constant we see that increasing θ increases the number of individuals with higher values of e, thereby decreasing public support for a particular level of redistribution, ν.

Proof of Proposition 2:

Our assumption of boundedly rational individuals with respect to redistribution is equivalent to the assumption of no dependence of u^a on p_i, and a fixed set Y, for the purpose of deriving political preferences. This removes the dependence of u^a on ρ, and on θ outside of v. We define the following three regions: (I) the region in which $\frac{\partial v}{\partial \nu} \geq 0$ for all w_i in the support of $f(w_i|e_i)$; (II) the region in which $\frac{\partial v}{\partial \nu} \leq 0$ for all w_i in the support of $f(w_i|e_i)$; and (III) the region in which the sign of $\frac{\partial v}{\partial \nu}$ changes over w_i in the support of $f(w_i|e_i)$. Note that because $f(w_i|e_i)$ satisfies the MLRP, there exists an e_p such that all individuals with $e_i \leq e_p$ are located in region I and an e_r such that all individuals with $e_i \geq e_r$ are located in region II.[3] Individuals with $e_i \in (e_p, e_r)$ are thus in region III.

Some dependencies are constant across regions. Our definition of v implies that one's marginal benefit arising from increasing the level of redistribution, $\frac{\partial u_i^a(v(w_i,\nu,\theta),r_i,\phi)}{\partial \nu}$, must be weakly decreasing in income, w_i. Thus, the integrand of Eq. (2) is supermodular in $-\nu$ and w_i, a fact that we used in Remark 1. The relationship between r_i and ν, however, varies by region.

Consider region I first. Here, increasing the degree of redistribution also increases v regardless of the realization of pre-tax and pre-social services income. Individuals in this region naturally prefer strictly higher levels of redistribution regardless of their levels of participation. However, because increasing ν in this region has the same directional effect on one's utility as increasing w_i, we can expect participation and redistribution to act as substitutes in this region. Thus, Eq. (2) will be supermodular in $-r_i$ and ν. The math bears out this expectation: $\frac{\partial^2 u_i^a(v(w_i,\nu,\theta),r_i,\phi)}{\partial \nu \partial(-r_i)} = \frac{\partial^2 u_i^a(v(w_i,\nu,\theta),r_i,\phi)}{\partial v \partial(-r_i)} \frac{\partial v(w_i,\nu,\theta)}{\partial \nu} \geq 0$. In this region, then, r^* is weakly decreasing in ν. In words, the more redistributive the tax regime, the less "poor" individuals – those who always benefit from redistribution – will participate.

Now consider region II. The only difference from region I is that in region II $\frac{\partial v(w_i,\nu,\theta),r_i,\phi)}{\partial \nu} \leq 0$. Redistribution always lowers one's net earnings, implying that individuals in this region prefer less redistri-

[3]These cutoffs may be the minimum (e_{min}) and the maximum (e_{max}) e available, implying that all individuals fall into region III.

bution regardless of their levels of participation. Increasing ν in this region has the same effect as decreasing w_i and so participation and redistribution act as complements in this region. Therefore, Eq. (2) is supermodular in r_i and ν; this means that r^* is weakly increasing in ν. In words, the more redistributive the tax regime, the more "rich" individuals – those who never benefit from redistribution – will participate.

Finally, consider region III. As both the integral and the derivative are linear operators, we can separate Eq. (2) – and particularly its cross-partial derivative with respect to $-r_i$ and ν – into two pieces as in Eq. (5):

$$\frac{\partial^2 EU_i}{\partial r_i \partial \nu} = \int_{-\infty}^{\hat{w}} dw_i f(w_i|e_i) \left(\frac{\partial^2 u_i^a(v(w_i, \nu, \theta), r_i, \phi)}{\partial r_i \partial \nu} \right) + \int_{\hat{w}}^{\infty} dw_i f(w_i|e_i) \left(\frac{\partial^2 u_i^a(v(w_i, \nu, \theta), r_i, \phi)}{\partial r_i \partial \nu} \right). \quad (5)$$

The first term of Eq. (5) falls into region I and the second into region II. Consequently, the first term is negative and the second is positive. Further, if all the probability weight in $f(w_i|e_i)$ were on $\hat{w}$, then Eq. (5) would be exactly zero because altering the level of redistribution would have no effect at all on one's utility. Recall our assumption that $\frac{\partial^2 u_i^a(v(w_i,\nu,\theta),r_i,\phi)}{\partial r_i \partial \nu}$ is weakly increasing in w_i.[4] Because $f(w_i|e_i)$ satisfies the MLRP and so exhibits FOSD relations for increasing e, this implies that the integrand of both parts of Eq. (5) is increasing in e_i. There must therefore exist, for given values of the other parameters, an $\underline{e} \leq e_{max}$ and an $\overline{e} \geq e_{min}$ such that: (i) for all $e \leq \underline{e}$, Eq. (2) is negative and so r^* is weakly decreasing in ν; (ii) for all $e \geq \overline{e}$, Eq. (2) is positive and so r^* is weakly increasing in ν; and (iii) for all $e \in (\underline{e}, \overline{e})$, Eq. (2) is zero and so r^* is unchanging in ν. Identifying lower earners with individuals with $e \leq \underline{e}$ and higher earners with individuals with $e \geq \overline{e}$ gives us Proposition 2. Note that higher earners may include both the "rich" and some who do sometimes benefit from redistribution, while lower earners may include both the "poor" and some who do not always benefit from redistribution.

[4]This amounts to assuming that $\frac{\partial^3 u_i^a(v(w_i,\nu,\theta),r_i,\phi)}{\partial r_i \partial \nu \partial w_i} \geq 0$. In words, this means that the degree to which satiety induces a marginal decrease in the marginal utility of either participation or earnings is itself decreasing with satiety, as one's utility levels off.

Online Appendix B: Key Variables

In what follows, we provide more detail on five of our key variables: *Religious Attendance*, *Income Inequality*, *Government Responsibility*, *Free Market*, and *Human Development Index*.

The first four variables come from the four-wave integrated data file for the World Values Survey-European Values Survey that covers the years 1981-2004. The data (version 20060423) were downloaded from `http://www.worldvaluessurvey.org/WVS/EVS` on May 28, 2009. Technical information about how the surveys were implemented can be found at `http://www.wvsevsdb.com/wvs/WVSTechnical.jsp`.

1. *Religious Attendance* is based on the following question (f028) in the WVS codebook:

> "Apart from weddings, funerals, and christenings, about how often do you attend religious services these days? More than once per week, once a week, once a month, only on special holy days, once a year, less often, or practically never?"

We reversed the original WVS scale for this variable so that higher values indicate higher levels of religious participation. Ultimately, *Religious Attendance* is measured on a 1-8 scale, with 1 meaning that respondents practically never attend religious services and 8 meaning that they attend more than once a week. In terms of summary statistics, $N = 249,063$, $\mu = 4.34$, $\sigma = 2.56$. WVS data for this variable are available for the following countries and years:

> Albania [1998, 2002], Algeria [2002], Argentina [1984, 1991, 1995, 1999], Armenia [1997], Australia [1981, 1995], Austria [1990, 1999], Azerbaijan [1997], Bangladesh [1996, 2002], Belarus [1990, 1996, 2000], Belgium [1981, 1990, 1999], Bosnia and Herzegovina [1998, 2001], Brazil [1991, 1997], Bulgaria [1990, 1997, 1999], Canada [1982, 1990, 2000], Chile [1990, 1996, 2000], China [1990, 2001], Colombia [1997, 1998], Croatia [1996, 1999], Czech Republic [1990, 1991, 1998, 1999], Denmark [1981, 1990, 1999], Dominican Republic [1996], Egypt [2000], El Salvador [1999], Estonia [1996, 1999], Finland [1990, 1996, 2000], France [1981, 1990, 1999], Georgia [1996], Georgia [1996], Germany [1990, 1997, 1999], West Germany [1981], Great Britain [1981, 1990, 1999], Greece [1999], Hungary [1982, 1991, 1998, 1999], Iceland [1984, 1990, 1999], India [1990, 1995, 2001], Indonesia [2001], Iran [2000], Iraq [2004], Ireland [1981, 1990, 1999], Italy [1981, 1990, 1999], Japan [1981, 1990, 1995, 2000], Jordan [2001], Kyrgyzstan [2003], Latvia [1990, 1996, 1999], Lithuania [1997, 1999], Luxembourg [1999], Macedonia [1998, 2001], Malta [1983, 1991, 1999], Mexico [1990, 1996, 2000], Morocco [2001, 2001], Netherlands [1981, 1990, 1999], New Zealand [1998], Nigeria [1990, 1995, 2000], Northern Ireland [1981, 1990, 1999], Norway [1982, 1990, 1996], Pakistan [2001], Peru [1996, 2001], Philippines [1996, 2001], Poland [1990, 1997, 1999], Portugal [1990, 1999], Puerto Rico [1995, 2001], Republic of Korea [1982, 1990, 1996, 2001], Republic of Moldova [1996, 2002],

Romania [1993, 1998, 1999], Russian Federation [1990, 1995, 1999], Saudi Arabia [2003], Serbia and Montenegro [1996, 2001], Singapore [2002], Slovakia [1990, 1991, 1998, 1999], Slovenia [1992, 1995, 1999], South Africa [1996, 2001], Spain [1981, 1990, 1990, 1995, 1999, 2000], Sweden [1982, 1990, 1996, 1999], Switzerland [1989, 1996], Taiwan [1994], Tanzania [2001], Turkey [1990, 1996, 2001, 2001], Uganda [2001], Ukraine [1996, 1999], United States [1990, 1995, 1999], Uruguay [1996], Venezuela [1996, 2000], Vietnam [2001], Zimbabwe [2001].

2. *Income Inequality* is based on the following question (e146) in the WVS codebook:

> "In order to be considered 'just', what should society provide? Please tell me for each statement if it is important or unimportant to you. 1 means very important; 5 means not important at all. Eliminating big inequalities in income between citizens."

Income Inequality is coded on a 1-5 scale, where 1 means that it is very important to reduce income inequality and 5 means that reducing income inequality is not at all important. In terms of summary statistics, $N = 37,839$, $\mu = 2.14$, $\sigma = 1.17$. WVS data for this variable are available for the following countries and years:

Austria [1999], Belarus [2000], Belgium [1999], Bulgaria [1999], Croatia [1999], Czech Republic [1999], Denmark [1999], Estonia [1999], Finland [2000], France [1999], Germany [1999], Great Britain [1999], Greece [1999], Hungary [1999], Iceland [1999], Ireland [1999], Italy [1999], Latvia [1999], Lithuania [1999], Luxembourg [1999], Malta [1999], Netherlands [1999], Northern Ireland [1999], Poland [1999], Romania [1999], Russian Federation [1999], Slovakia [1999], Slovenia [1999], Spain [1999], Sweden [1999], Turkey [2001].

3. *Government Responsibility* is based on the following question (e037) in the WVS codebook:

> "Now I'd like you to tell me your views on various issues. How would you place your views on this scale? 1 means you agree completely with the statement on the left; 10 means you agree completely with the statement on the right; and if your views fall somewhere in between, you can choose any number in between. Sentences: People should take more responsibility to provide for themselves vs. The government should take more responsibility to ensure that everyone is provided for. 1 'People should take more responsibility' ... 10 'The government should take more responsibility'."

We reversed the original WVS scale for this variable so that higher values indicate greater levels of economic conservatism. Ultimately, *Government Responsibility* is coded on a 1-10 scale, where 1 indicates that the government should take more responsibility to ensure that everyone is provided for and 10 means that people should take more responsibility for providing for themselves. In terms of summary statistics, $N = 226,573$, $\mu = 5.65$, $\sigma = 3.06$. WVS data for this variable are available for the following countries and years:

Albania [1998, 2002], Algeria [2002], Argentina [1995, 1999], Armenia [1997], Australia [1995], Austria [1990, 1999], Azerbaijan [1997], Bangladesh [1996, 2002], Belarus [1990, 1996, 2000], Belgium [1990, 1999], Bosnia and Herzegovina [1998, 2001], Brazil [1991, 1997], Bulgaria [1990, 1997, 1999], Canada [1990, 2000], Chile [1990, 1996, 2000], China [1990, 1995, 2001], Colombia [1998], Croatia [1996, 1999], Czech Republic [1990, 1991, 1998, 1999], Denmark [1990, 1999], Dominican Republic [1996], Egypt [2000], El Salvador [1999], Estonia [1990, 1996, 1999], Finland [1990, 1996, 2000], France [1990, 1999], Georgia [1996], Germany [1990, 1997, 1999], Great Britain [1990, 1999], Greece [1999], Hungary [1991, 1998, 1999], Iceland [1990, 1999], India [1990, 1995, 2001], Indonesia [2001], Iran [2000], Iraq [2004], Ireland [1990, 1999], Israel [2001], Italy [1990, 1999], Japan [1990, 1995, 2000], Jordan [2001], Kyrgyzstan [2003], Latvia [1990, 1996, 1999], Lithuania [1990, 1997, 1999], Luxembourg [1999], Macedonia [1998, 2001], Malta [1991, 1999], Mexico [1990, 1996, 2000], Morocco [2001, 2001], Netherlands [1990, 1999], New Zealand [1998], Nigeria [1990, 1995, 2000], Northern Ireland [1990, 1999], Norway [1990, 1996], Pakistan [1997, 2001], Peru [1996, 2001], Philippines [1996, 2001], Poland [1989, 1990, 1997, 1999], Portugal [1990, 1999], Puerto Rico [1995, 2001], Republic of Korea [1990, 1996, 2001], Republic of Moldova [1996, 2002], Romania [1993, 1998, 1999], Russian Federation [1990, 1995, 1999], Saudi Arabia [2003], Serbia and Montenegro [1996, 2001], Singapore [2002], Slovakia [1990, 1991, 1998, 1999], Slovenia [1992, 1995, 1999], South Africa [1990, 1996, 2001], Spain [1990, 1990, 1995, 1999, 2000], Sweden [1990, 1996, 1999], Switzerland [1996], Taiwan [1994], Tanzania [2001], Turkey [1990, 1996, 2001, 2001], Uganda [2001], Ukraine [1996, 1999], United States [1990, 1995, 1999], Uruguay [1996], Venezuela [1996, 2000], Vietnam [2001], Zimbabwe [2001].

4. *Free Market* is based on the following question (e127) in the WVS codebook:

> "Do you personally feel that the creation of a free market that is one largely free from state control is right or wrong for your country's future. 1 'Right', 2 'wrong'."

We recoded the WVS survey so that 1 indicated support for the free market, 0 otherwise. Ultimately, *Free Market* is a dichotomous variable where 1 means that a free market economy without state intervention is desirable and 0 means the opposite. In terms of summary statistics, $N = 13,792$, $\mu = 0.51$, $\sigma = 0.50$. WVS data for this variable are available for the following countries and years:

Armenia [1997], Azerbaijan [1997], Belarus [1996], Estonia [1996], Georgia [1996], Germany [1997], Latvia [1996], Lithuania [1997], Republic of Moldova [1996], Ukraine [1996].

The fifth variable is the *Human Development Index (HDI)*. This variable is based on the 2007/2008 HDI index trends for 1975, 1980, 1985, 1990, 1995, 2000, and 2005 from the United Nations Development Programme (`http://hdr.undp.org/en/media/HDR_20072008_Table_2.pdf`). Where necessary, we employ linear interpolations to calculate *HDI* for the intervening years.[1] *HDI* has a 0-1

[1] In previous work, Norris and Inglehart (2004) also use HDI as their measure of societal development. Instead

scale, and is a composite measure (health, knowledge, standard of living) of a country's level of human development. Technical information about exactly how HDI is calculated can be found at http://hdr.undp.org/en/media/HDR_2011_EN_TechNotes.pdf. In terms of summary statistics, $N = 257,484$, $\mu = 0.80$, $\sigma = 0.12$.

of using the HDI index trends, though, they use HDI scores from various annual Human Development Reports. This is problematic because these annual scores are not comparable across time due to data revisions and changes in methodology (UNDP 2007, 222).

Online Appendix C: Concepts and Measures

In what follows, we illustrate the connection between our theoretical and empirical variables. We also indicate the predicted sign of the coefficient on each of the independent variables. We start with our analysis of individual religious participation, and then turn to our analysis of economic conservatism.

Religious Participation

Table 3: Theoretical and Empirical Variables in our Analysis of Religious Attendance

Dependent Variable: *Religious Attendance*, r_i			
	Theoretical Variable	Empirical Variable	Predicted Sign
Individual-Level Variables			
	e_i	*Income*	Negative
		Male	Negative
		Older than 65	Positive
		Education	Negative
		Social Class	Negative
Population-Level Variables			
	θ	*Human Development Index*	Negative
		Urbanization	Negative
		GDP per capita†	Negative
	ϕ	*Government Regulation* (IRF)	Negative
		Government Regulation† (RAS)	Negative
		Government Favoritism	Negative
		Social Regulation	Negative
		Communist	Negative
	$p(r_{-i})$, positive externalities case	*Postcommunist*	Negative
	$h(z\|\rho)$	*Income Inequality*	Positive
	$g(e\|\theta)$	*Income Inequality*	Positive
	ρ	*Percent Catholic*	—-
		Percent Protestant	—-
		Percent Muslim	—-
		Country-year random effects	—-
		Regional Fixed effects†	—-
		WVS Wave Fixed Effects†	—-

Note: † indicates that this variable was used in a robustness test. IRF indicates that the *Government Regulation* variable comes from the International Religious Freedom dataset (Grim & Finke 2006). RAS indicates that the *Government Regulation* variable comes from the Religion and State dataset (Fox 2008). '—-' indicates that our theoretical model provides no specific prediction about the sign of the effect of these variables. Since we cannot observe, and hence measure, an individual's ideal level of doctrinal strictness, our empirical analysis does not include an empirical measure of z_i.

Religious Participation and Economic Conservatism

Table 4: Theoretical and Empirical Variables in our Analysis of Economic Conservatism

	Theoretical Variable	Empirical Variable
Dependent Variables		
	ν	Economic Conservatism (i) *Income Inequality* (ii) *Government Responsibility* (iii) *Free Market*
Independent Variables		
	r_i	*Religious Attendance*
	e_i	*Income*
Control Variables		
		Male *Age* *Education* *Social Class*† Country-year random effects Regional Fixed effects† WVS Wave Fixed Effects†

Note: † indicates that this variable was used in a robustness test.

$$\begin{aligned} \textit{Economic Conservatism}_{ij} = f(\beta_0 &+ \beta_1 \textit{Religious Attendance}_{ij} + \beta_2 \textit{Income}_{ij} \\ &+ \beta_3 \textit{Religious Attendance} \times \textit{Income}_{ij} \\ &+ \beta_4 \textit{Individual-Level Controls}_{ij} + \epsilon_{ij}) \end{aligned} \quad (6)$$

Table 5: Predictions

Coefficient/Marginal Effect	Prediction
β_1	Positive
β_2	Positive
β_3	Negative
$\beta_1 + \beta_3 \textit{Income}$	Negative once *Income* is sufficiently high.
$\beta_2 + \beta_3 \textit{Religious Attendance}$	Always positive.