Universal Rights in a World of Diversity. The Case of Religious Freedom
Pontifical Academy of Social Sciences, Acta 17, 2012
www.pass.va/content/dam/scienzesociali/pdf/acta17/acta17-lutz.pdf

The Demography of Religions and their Changing Distribution in the World

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1. The demographic approach and religion

Demography studies the changing size and composition of a population in a quantitative way. A population (Greek: 'demos') is usually defined as comprising all the people in a given territory or political entity (from a city to a province to a nation to the world population). A population defined in such a way can only change through three forces: births, deaths and migration. These are called the three fundamental components of demographic change. Since the intensity of these forces differs greatly by age and gender, most demographic studies stratify the populations by these two basic demographic dimensions. This structure by age and gender is well illustrated through population pyramids which plot women on the right and men on the left side, sorted by age (as an example, see Figure 1, p. 681).

Demographic models can also project populations for several decades into the future. This high predictive power in demography – as compared to many other social and economic issues – is due to the fact that the human life span is 70-80 years in most parts of the world and, if we know, e.g., the number of 10-year-old girls today, we have a good basis for projecting the number of 70-year-old women 60 years into the future. We only have to adjust for assumed future mortality and migration rates. To project the size of cohorts that have not yet been born today, we also must make assumptions about future fertility rates. Hence, to forecast total population size we need to make assumptions about likely future trends in age- and gender-specific birth, death and migration rates. This is where a substantive assess-

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ment of the drivers of the demographic components needs to enter the analysis. Since these future trends are uncertain, one cannot make point forecasts with high certainty. One has to specify alternative scenarios which cover what is interpreted as a plausible range or specify probabilistic population projections which give quantitative uncertainty ranges for the resulting demographic variables.

To illustrate these demographic uncertainties, Figure 1 (see p. 681) gives a probabilistic population pyramid for the population of Europe in 2050. It shows that for those cohorts who are already born and who are not yet subject to the major uncertainty about the future of mortality at very high age, the uncertainty is rather minor. For the very high ages assessed uncertainty increases significantly due to a major scientific debate: While one group of scientists thinks that Europe is already close to the maximum life expectancy possible for humans, others believe that – if there is a maximum – it may be above 115-120 years. But the biggest uncertainty concerns the number of children and young adults who are not yet born today and whose number depends on future birth rates.

But populations can and should be stratified by other characteristics of humans than just age and gender. Traditionally, demographers have also distinguished by marital status, place of residence, citizenship, educational attainment level and ethnicity. Religious affiliation is another characteristic that has been included in the censuses of many countries. In some countries, however, it is not considered appropriate for the state to ask about membership in religious organizations. But for many of these countries, information is provided by representative surveys which did ask the question. It should be noted that even in countries where religious affiliation is included in the formal government census, the information is based on a personal statement given by the respondent and is not verified. For this reason the census information often does not fully correspond with the records of the religious organizations. In the past censuses of Austria, for instance, more people stated that they are Roman Catholic than the registers of the church showed. This may include people who have left the church because they did not want to pay church tax or who otherwise feel attachment to the church without being a member in a formal sense. Also in past years in most countries, the proportion of persons who refuse to answer the question about religious affiliation has been increasing.

When it comes to the question of demographic modeling of the changing distribution of the religious composition of a population, differentials in fertility, mortality and migration also need to be considered. Recently, the number and proportion of Muslims in many European countries has

been increasing quite rapidly. This is, in the first instance, a consequence of the fact that many immigrants to Europe have been Muslims, either from Turkey or from Northern Africa. But it is also due to the fact that in most countries, Muslim women had significantly higher birth rates. As we will discuss in the concluding section, there are reasons to assume that these higher birth rates are not directly a consequence of the religious affiliation and the associated traditions, but rather reflect the fact that these immigrant populations have on average lower levels of education and for this reason have higher birth rates. The second generation of immigrants tends to be better educated and shows birth rates which are much closer to those of the non-immigrant population. But independently of the reasons for these differential growth rates, it is a fact that currently the proportions of the religions that are associated with immigrant populations are on an increasing trajectory. This can also be observed with respect to the Orthodox church, e.g., in Austria due to significant Serbian immigration. This immigration factor is also pronounced in the USA, where Latin American immigration enhances the proportion of Roman Catholics, or in Canada and Australia, where Asian religions are becoming more prominent.

Beyond the question of purely formal membership in a specific church or religious group, in many respects the more interesting question concerns the intensity of participation in the religious activities, or simply the question of how important religion is for the life of the people. These kinds of questions have been asked in many surveys and the results show that in many respects, the behavioral differentials (even in terms of birth rates) between the sub-groups of different religious intensity or orientation within one formal religious denomination are stronger than the differences between the denominations. But from a statistical and demographic perspective these kinds of differentials are more difficult to capture because they are not only hard to measure but also tend to be less stable over the life course of individuals.

2. Current global distribution of religions

While for many parts of the world the information about religious affiliation is available from censuses and surveys, for other parts of the world there is little reliable information. Several estimates for relative and absolute composition of religion in the world exist. The *World Christian Encyclopedia* (Barrett *et al*. 2001) suggests that in 2010, Christianity constitutes 33.2 percent of the world population, Islam 22.4 percent, Buddhism 6.8 percent, and Hinduism 13.7 percent. They also estimate that a hundred years ago in 1910 Christianity was at 34.8 percent, Islam 12.6 percent, Buddhism 7.8 percent and Hinduism

12.7 percent. Appendix Table A1 (see p. 102) gives the overall estimated distribution of religion in the world at the country level in 2010 (Johnson and Grim 2008). Figure 2 (see p. 681) gives estimates of the changing size in absolute numbers of the major religious groups at the global level from 1900 to 2000. Figure 3 (see p. 682) gives projections to 2050 as derived from Barrett *et al*. (2001). These very crude estimates are based mainly on national level projections of the total populations of countries.

Figure 4 (see p. 682) takes a closer look at the world region that probably experienced the greatest change in its religious composition over the course of the 20th century: Sub-Saharan Africa. Here the proportion of Christians is estimated to have increased from around 9 percent in 1900 to just below 60 percent today. This coincided with a decline in traditional African religions which fell from 76 percent in 1900 to only 13 percent today. But again there is a serious question of categorization and how the various forms of syncretism are being classified in these studies.

3. Detailed scenarios for the future religious composition

In this section we will present two examples of recent, more sophisticated multi-state projections of the religious composition at the national level. These multi-state studies not only extrapolate proportions of certain religious groups as part of the total national population, but they explicitly consider the population dynamics as described above with different fertility, mortality and migration rates for different religious groups as well as the possibility to move from one religious category to another.

3.1. The example of Spain

The first example of Spain is taken from Stonawski *et al*. (2010) and subdivides the religious categories into two intensity levels: Highly Religious and Moderately Religious. The distinction between the two groups are based on self-assessed religiosity estimated by age, sex and religious denomination using data from European Social Surveys 2002-2008 (IV waves) [11-scale question: *Regardless of whether you belong to a particular religion, how religious would you say you are?*, recoded: 5-10 'Highly Religious', 0-4 'Moderately Religious']. Religious intensity for migrants is assumed to be the same as in country of origin. Data on religious intensity comes from the Gallup WorldView survey[3] [2-scale question (Yes/No): *Is religion an important part of your life?*].

[3] www.gallup.com/se/126848/worldview.aspx.

The study first estimates the age-sex distribution of the base population by religious denomination and intensity. Then it takes into account fertility differentials between individuals of different groups and assumes that religiosity and denomination is transmitted from mother to child. Migration is also included in the analysis, where religion and religiosity are approximated based on the country of origin.

Figure 5 (see p. 683) shows the religious composition of the Spanish population and that of the migrant population. Figures 6 and 7 (see pp. 683-4) show the age and gender distributions for 2004 and the projected distributions for 2020 in the form of an age pyramid, with the color indicating the religious category.

Table 1 shows the different fertility rates that underlie these projections (Total Fertility Rate / TFR = mean number of children per woman). Assuming that the children fall into the same religious category as their mothers, both fertility and migration tend to lead to an increase in the share of the actively religious since the more religious tend to have higher fertility, regardless of their affiliation, and immigrants tend be more religious than the native population. Although fertility differentials and immigration may raise the share of the more religious, they are important mechanisms that are likely to lead to a less religious population. Those without religion have a younger age structure. Population momentum implies that they will gradually grow due to cohort replacement, where the older actively religious die out. Furthermore, changing religious categories results in a substantial net growth in the population share without religion, as secularization is far more common than switching between religious groups or from no religion to a religious group.

If fertility differentials and migration were to continue as of today, the share of those who are highly religious will first decline from a level of 58

Active Catholic	1.84
Non-active Catholic	1.44
Protestant and others	1.53
Muslim	1.76
Buddhist/Hindu	1.53
None	1.00

Table 1. Total Fertility Rates (mean number of children per woman) for different religious categories, Spain, 2004. Source: Stonawski *et al.* (2010).

percent in 2005 to 54 percent in 2035, and from then onwards, in spite of losses through conversion, would rise to more than 55 percent in 2050. On the other extreme, if all groups have the same fertility, there would be a continued decline in the share of highly religious people in Spain to 47 percent in 2050. The other scenarios resulted in intermediate outcomes.

According to these scenarios, Roman Catholics in Spain will remain in the majority over the projection period although their share would diminish from 78 percent to 60-67 percent, depending on the scenario. Migration is especially detrimental to Roman Catholics whose share in the migrant population has been declining. Quite the opposite, the Protestant group is benefiting from the migration; its share rises to almost 8 percent by 2050 with all parameters remaining constant as in the starting year. In 2005, less than 2 percent of the Spanish population was Muslim. According to the stable scenario, the Muslim proportion would increase to 8 percent in 2050. In case of fertility convergence, the share of Muslims would be between 4.5 percent and 5.5 percent depending on the speed of the fertility decline. The share of other groups, such as Hindu/Buddhist, would remain very low, below one percent over the projection period. The population share without religion is likely to experience a growth in all scenarios, particularly when there is no migration and fertility differentials diminish or disappear. In the case where there is no migration and fertility is equal across all groups, the share of *None* increases from 18 percent to 31 percent during 2005-2050. However, if current trends of migration and fertility differentials were to continue, their share is likely to increase to only 23 percent by 2050.

3.2. The example of the USA

Another recent study applies a similar demographic multi-state model to projecting the future religious composition of the United States of America. Figure 8 (see p. 98) gives the shares of the different religious groups for the starting year 2003. Table 2 presents estimated variation in fertility levels. Unlike the above-described calculations for Spain, this study does not distinguish between different degrees of being actively involved in religion, but it is more detailed on the classification of the different Protestant groups in the US.

As Figure 9 (see p. 98) illustrates, almost half of the current immigrants to the US are Roman Catholics with the fast majority of them being Hispanics (35 percent of total migrants). As shown in Table 2, Hispanic immigrants have by far the highest birth rates of all Christian groups in the US. This results in a significant increase in the overall proportion of Hispanic Catholics in the US (according to the constant rates scenario as presented in Figure 10, see p. 99) from less than 10 percent today to almost 18 percent of the total popu-

Religion	TFR
Muslims (MUS)	2.84
Hispanic Catholics (CHI)	2.75
Black Protestants (PBL)	2.35
Fundamentalist Protestants excluding Blacks (PFU)	2.13
Non-Hispanic Catholics (CAT)	2.11
Moderate Protestants excluding Blacks (PMO)	2.01
Liberal Protestants excluding Blacks (PLI)	1.84
Hindu/Buddhist (HBU)	1.73
No religion (NOR)	1.66
Others (OTH)	1.64
Jews (JEW)	1.43
U.S. population average	2.08

Table 2. Total Fertility Rate (TFR) by religion, 2003. Source: Skirbekk *et al.* (2010).

lation in 2043 – almost equal in size to the group of religiously unaffiliated persons. Together with the Catholic non-Hispanic population, which is on a declining trajectory, the total Roman Catholic population in the US is likely to increase to around one-third of the entire US population over the coming three decades.

4. Conclusions: the role of education for convergence among religions and religious tolerance

A growing body of literature deals with education, along with age and gender, as a basic demographic dimension. In a way, this helps to add the 'quality' dimension to the analysis of demographic change. It has been argued that education will be at the heart of 21st century demography (Lutz 2010). Whether this will be true or not, there is no doubt that the level of educational attainment is a key factor in determining the behavior of people in all societies. Based on newly reconstructed data for educational attainment distributions by age and gender for almost all countries in the world, a series of new studies has shown the overriding role of education in issues ranging from health and mortality to economic growth to the transition of societies to modern democracy (Lutz *et al.* 2010, 2008b, 2003, 2001, 1997). Here we will address the question to what extent education matters for the behavioral convergence among members of different religions and even for the spread of tolerance and religious freedom.

In the previous sections we discussed the fact that members of different religions tend to have different levels of fertility and this is an important

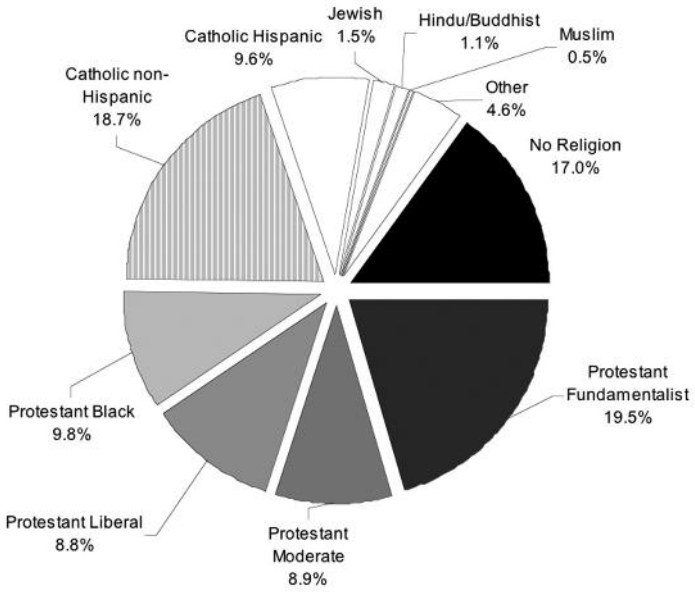

Figure 8. Share of the 2003 population by religious affiliation. Source: Skirbekk *et al.* (2010).

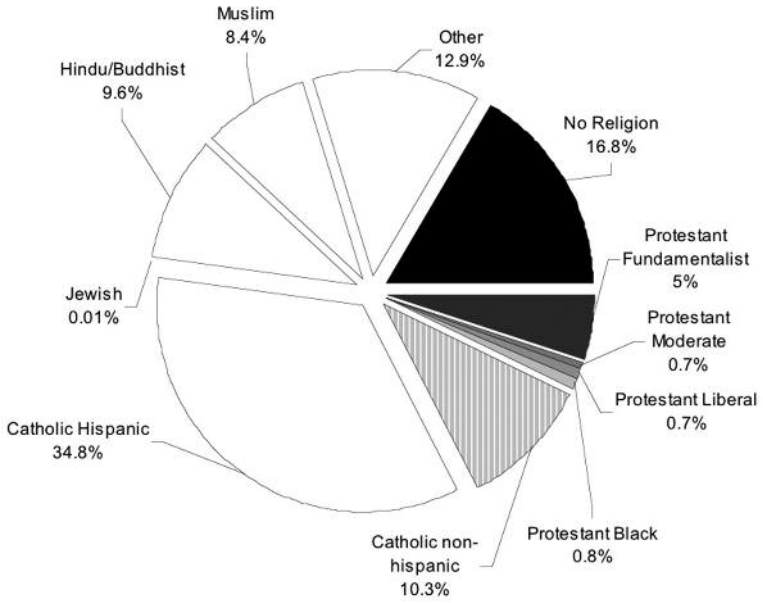

Figure 9. Religious composition of recent migrants to the USA. Source: Skirbekk *et al.* (2010).

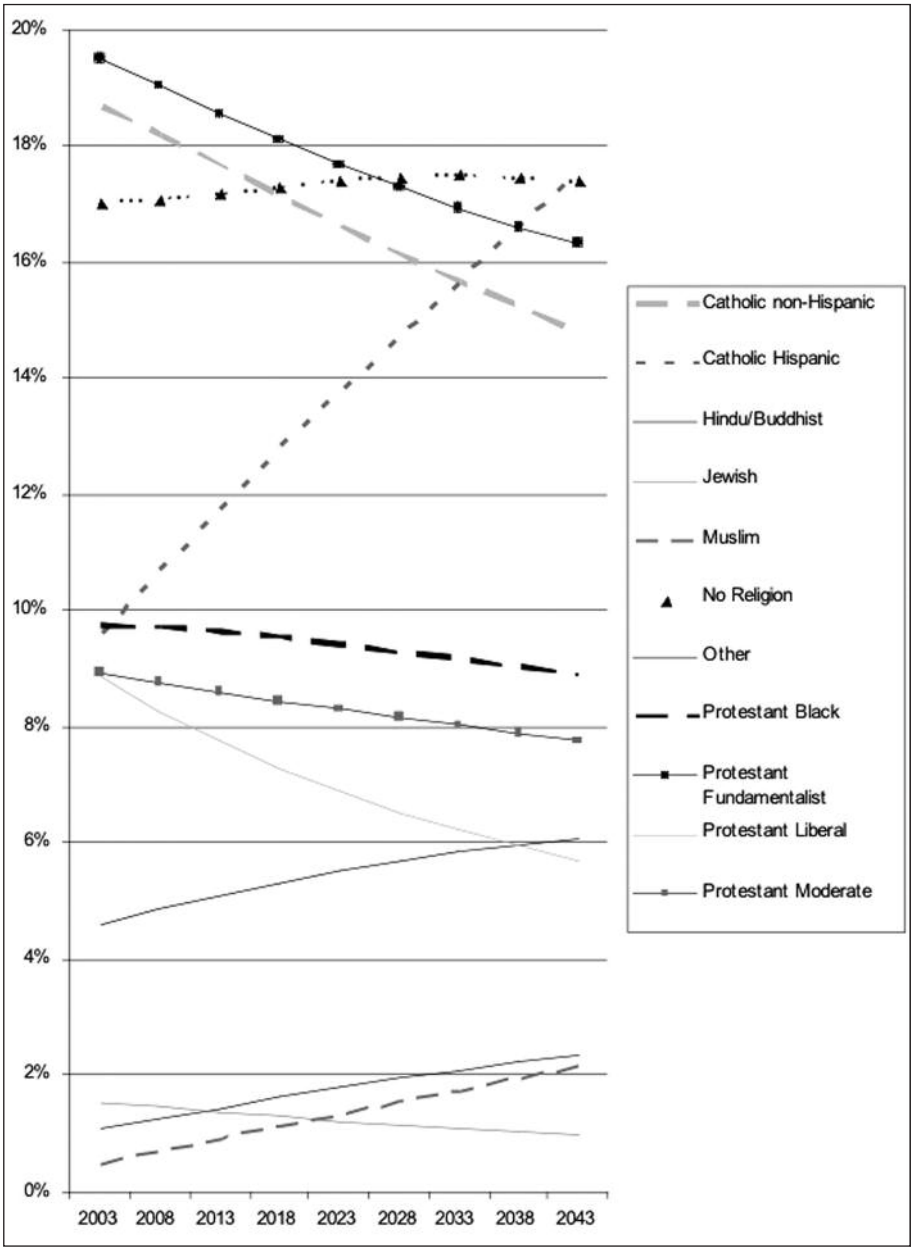

Figure 10. Projections of the share of the total US population for 11 religious categories according to a scenario that keeps current conditions (fertility and migration) constant. Source: Skirbekk *et al.* (2010).

factor in causing different religions to grow at different speeds. The level of fertility is not only the most important driver of differential population growth but also a very sensitive indicator of social, economic and even cultural change. For this reason it is very interesting in the context of studying differentials among religions to analyze the religion-specific data with respect to the level of education. Table 3 gives these data for the case of India, where we distinguish between the three main religions Hinduism, Islam and Christianity. At the aggregate level – across all ages and education categories – the well-known pattern appears that Muslims have the highest fertility and Christians the lowest, with the difference being more than one child on average. Hindus have an intermediate position. But when the pattern is differentiated by the level of education of the woman, a very different pattern appears: Within each religion more highly educated women have significantly lower fertility than less educated women. For women with at least secondary education (high in the Table 3) the difference between Muslim and Christian women practically disappears. And Hindu women in the high education category have even lower fertility than Christian women in that category. The change by level of education is even more dramatic with respect to the age pattern of fertility. Uneducated teenage Hindu women have the highest fertility rate (16 percent have one birth per year) while highly educated Christian teenage women have the lowest rate (0.2 have one birth per year). In other words, education makes the difference and Muslim fertility is mostly higher than Christian because Christian women are on average better educated.

Age	Hindu			Muslim			Christian		
	Low	Medium	High	Low	Medium	High	Low	Medium	High
15-19	159.7	74.1	17.4	126.3	80.1	18.9	122	44.7	2.2
20-24	246.6	211.1	113.3	274.8	203.8	136.9	193.6	169.1	86.7
25-29	144.6	113.7	137.5	197.1	145.3	149.6	126.4	140.3	174.1
30-34	65.1	36.7	66.5	110.2	75.3	100.8	79	54.7	104.7
35-39	25.9	12.8	17	60.1	14	19.6	42	24.5	29.1
40-44	7.7	1.3	0.3	24.5	1	0	25.8	6.8	7.9
45-49	3.3	0	0	11.,9	0	0	5.3	0	0
TFR	3.26	2.25	1.76	4.02	2.60	2.13	2.97	2.20	2.02
TFR		2.59			3.4			2.34	

Table 3. Age-specific fertility rates and Total Fertility Rates (TFR) in India by religion and level of education. Source: Demographic and Health Survey 2005.[4] Births 36 months before survey.

[4] www.measuredhs.com.

Figure 11 (see. p. 685) shows the relationship among the average level of female education and the level of fertility for all countries with Muslim-majority populations. The picture is very pervasive: The higher the level of female education, the lower the level of fertility. This convergence of fertility rates with a higher level of education also fits well with the data that we have about the increasing assimilation of demographic behavior among second generation immigrants in Europe.

The importance of education as the key driver of human behavior goes far beyond the above-described impact on fertility. Throughout the world better educated people have better health, live longer, have higher incomes, are more resilient to natural disasters and are better integrated into new societies should they be migrants. At the individual level better-educated people have better lives by almost any criterion. At the societal level there are many ways in which a better average education of the population contributes to social progress and economic growth. The distribution of the entire population by their level of educational attainment is probably the single most important predictor of the progress of a population in terms of socio-economic and civilisatory progress. This is also likely to matter greatly for religious tolerance and religious freedom. In a recent study Lutz *et al.* (2010) showed through econometric analyses of time series of more than 120 countries around the world that education of broad segments of the population (and in particular high proportions of women with at least junior secondary education) are a key driver of the transition of countries towards modern free democracies.

Such an econometric study still needs to be done with respect to the effects of increasing education – irrespective of the majority religion in the country – on religious freedom. But for the time being, the findings with respect to the transition to democracy are very encouraging and it is a plausible working hypothesis that the pattern with respect to religious freedom in societies is not much different. But there clearly is a need for more studies on religion and religious freedom using demographic approaches of the sort outlined in this paper.

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Appendix

Data on religion, estimates from 2010. Source: Johnson and Grim (2008).

Country	Catholic	Protestant	Jew	Muslim	Hindu/Budd	Other	None
Afghanistan	0.000	0.000	0.000	0.998	0.001	0.002	0.000
Aland Islands	0.000	1.000	0.000	0.000	0.000	0.000	0.000
Albania	0.151	0.003	0.000	0.637	0.000	0.161	0.048
Algeria	0.000	0.000	0.000	0.979	0.000	0.002	0.019
American Samoa	0.223	0.623	0.000	0.000	0.003	0.143	0.007
Andorra	0.883	0.002	0.003	0.009	0.004	0.039	0.060
Angola	0.613	0.291	0.000	0.006	0.000	0.078	0.012
Anguilla	0.063	0.786	0.002	0.006	0.004	0.100	0.039
Antigua and Barbuda	0.101	0.694	0.000	0.006	0.002	0.180	0.018
Argentina	0.859	0.060	0.012	0.020	0.001	0.007	0.042
Armenia	0.079	0.009	0.000	0.023	0.000	0.766	0.123
Aruba	0.791	0.102	0.002	0.004	0.002	0.082	0.018

Australia	0.260	0.295	0.005	0.022	0.032	0.204	0.182
Austria	0.687	0.040	0.001	0.048	0.002	0.068	0.154
Azerbaijan	0.000	0.001	0.003	0.883	0.000	0.031	0.082
Bahamas	0.149	0.751	0.001	0.000	0.000	0.042	0.057
Bahrain	0.057	0.015	0.001	0.837	0.064	0.022	0.004
Bangladesh	0.002	0.001	0.000	0.887	0.101	0.008	0.001
Barbados	0.037	0.625	0.000	0.009	0.004	0.302	0.023
Belarus	0.109	0.023	0.003	0.003	0.000	0.606	0.256
Belgium	0.737	0.013	0.003	0.036	0.003	0.060	0.148
Belize	0.660	0.253	0.010	0.005	0.025	0.040	0.008
Benin	0.221	0.078	0.000	0.255	0.000	0.443	0.002
Bermuda	0.145	0.532	0.000	0.001	0.005	0.252	0.065
Bhutan	0.002	0.003	0.000	0.010	0.932	0.051	0.001
Bolivia	0.812	0.107	0.000	0.000	0.001	0.059	0.021
Bosnia and Herzegovina	0.119	0.001	0.000	0.554	0.000	0.287	0.038
Botswana	0.046	0.108	0.000	0.003	0.002	0.839	0.002
Brazil	0.724	0.157	0.001	0.001	0.003	0.086	0.028
Brunei Darussalam	0.073	0.027	0.000	0.568	0.102	0.218	0.012
Bulgaria	0.010	0.019	0.000	0.121	0.000	0.811	0.039
Burkina Faso	0.112	0.097	0.000	0.516	0.000	0.269	0.007
Burundi	0.612	0.220	0.000	0.015	0.001	0.151	0.001
Cambodia	0.002	0.018	0.000	0.023	0.850	0.081	0.026
Cameroon	0.244	0.201	0.000	0.198	0.000	0.351	0.006
Canada	0.412	0.120	0.013	0.017	0.023	0.261	0.153
Cape Verde	0.873	0.031	0.000	0.029	0.000	0.057	0.010
Cayman Islands	0.087	0.407	0.014	0.002	0.002	0.436	0.051
Central African Republic	0.200	0.150	0.000	0.150	0.000	0.493	0.007
Chad	0.076	0.107	0.000	0.574	0.000	0.242	0.001
Chile	0.700	0.027	0.001	0.004	0.000	0.167	0.100
China	0.011	0.019	0.000	0.016	0.143	0.428	0.383
Christmas Island	0.100	0.107	0.000	0.194	0.141	0.302	0.156
Cocos (Keeling) Islands	0.067	0.146	0.000	0.657	0.000	0.071	0.060
Colombia	0.913	0.028	0.000	0.001	0.000	0.036	0.022
Comoros	0.002	0.002	0.000	0.983	0.000	0.011	0.001
Congo, Republic of	0.620	0.127	0.000	0.015	0.000	0.205	0.033
Congo, The D. Rep. of the	0.516	0.218	0.000	0.011	0.002	0.249	0.004
Cook Islands	0.232	0.699	0.000	0.000	0.000	0.051	0.018
Costa Rica	0.868	0.100	0.001	0.000	0.000	0.011	0.020
Cote d'Ivoire	0.000	0.000	0.000	0.311	0.001	0.685	0.004
Croatia	0.803	0.009	0.000	0.024	0.000	0.105	0.058
Cuba	0.554	0.039	0.000	0.001	0.003	0.174	0.229
Cyprus	0.018	0.012	0.000	0.004	0.010	0.901	0.055
Czech Republic	0.326	0.026	0.001	0.000	0.001	0.211	0.436
Denmark	0.007	0.822	0.001	0.040	0.002	0.028	0.100
Djibouti	0.009	0.001	0.000	0.970	0.000	0.007	0.012

Dominica	0.621	0.321	0.000	0.002	0.002	0.048	0.006
Dominican Republic	0.842	0.077	0.000	0.000	0.000	0.054	0.027
Ecuador	0.910	0.039	0.000	0.000	0.001	0.033	0.017
Egypt	0.004	0.007	0.000	0.873	0.000	0.111	0.005
El Salvador	0.812	0.118	0.000	0.000	0.000	0.051	0.018
Equatorial Guinea	0.844	0.046	0.000	0.041	0.000	0.018	0.050
Eritrea	0.032	0.012	0.000	0.494	0.000	0.432	0.030
Estonia	0.005	0.180	0.001	0.003	0.001	0.543	0.267
Ethiopia	0.007	0.161	0.000	0.340	0.000	0.490	0.002
Falkland Islands (Malvinas)	0.213	0.465	0.000	0.000	0.003	0.189	0.130
Faroe Islands	0.003	0.958	0.000	0.000	0.000	0.022	0.017
Fiji	0.113	0.480	0.000	0.061	0.296	0.038	0.011
Finland	0.002	0.847	0.000	0.005	0.001	0.051	0.094
France	0.666	0.020	0.010	0.084	0.008	0.009	0.203
French Guiana	0.774	0.052	0.001	0.009	0.015	0.115	0.035
French Polynesia	0.396	0.381	0.001	0.000	0.001	0.170	0.051
Gabon	0.575	0.124	0.000	0.043	0.000	0.249	0.009
Gambia	0.026	0.007	0.000	0.859	0.000	0.101	0.006
Georgia	0.010	0.003	0.003	0.104	0.000	0.844	0.036
Germany	0.311	0.313	0.003	0.045	0.002	0.082	0.244
Ghana	0.121	0.264	0.000	0.193	0.000	0.418	0.003
Gibraltar	0.776	0.079	0.018	0.046	0.017	0.036	0.027
Greece	0.013	0.002	0.000	0.042	0.002	0.913	0.027
Greenland	0.002	0.674	0.000	0.000	0.000	0.295	0.028
Grenada	0.527	0.379	0.000	0.003	0.007	0.074	0.010
Guadeloupe	0.885	0.074	0.000	0.004	0.005	0.008	0.024
Guam	0.767	0.150	0.000	0.000	0.011	0.054	0.018
Guatemala	0.812	0.161	0.000	0.000	0.000	0.012	0.014
Guinea	0.028	0.009	0.000	0.697	0.001	0.263	0.002
Guinea-Bissau	0.076	0.012	0.000	0.428	0.000	0.471	0.013
Guyana	0.120	0.338	0.000	0.081	0.318	0.123	0.020
Haiti	0.724	0.159	0.000	0.000	0.000	0.099	0.018
Holy See (Vatican City State)	0.981	0.000	0.000	0.000	0.000	0.019	0.000
Honduras	0.800	0.130	0.000	0.001	0.001	0.056	0.012
Hungary	0.604	0.247	0.010	0.003	0.000	0.024	0.112
Iceland	0.023	0.854	0.000	0.001	0.004	0.090	0.028
India	0.018	0.017	0.000	0.139	0.736	0.076	0.014
Indonesia	0.028	0.071	0.000	0.784	0.028	0.074	0.015
Iran	0.000	0.000	0.000	0.986	0.000	0.009	0.004
Iraq	0.008	0.000	0.000	0.974	0.000	0.012	0.006
Ireland	0.788	0.031	0.000	0.007	0.001	0.131	0.041
Isle of Man	0.094	0.559	0.001	0.002	0.002	0.189	0.153
Israel	0.017	0.002	0.729	0.191	0.004	0.009	0.048
Italy	0.803	0.005	0.001	0.025	0.000	0.002	0.164
Jamaica	0.040	0.412	0.000	0.001	0.006	0.498	0.043

Japan	0.004	0.005	0.000	0.001	0.558	0.299	0.132
Jordan	0.005	0.003	0.000	0.939	0.000	0.023	0.030
Kazakhstan	0.012	0.003	0.000	0.518	0.001	0.122	0.344
Kenya	0.226	0.401	0.000	0.070	0.005	0.297	0.001
Kiribati	0.547	0.422	0.000	0.000	0.000	0.025	0.006
Korea, D. People's Rep.	0.002	0.001	0.000	0.000	0.015	0.269	0.713
Korea, Republic of	0.101	0.207	0.000	0.002	0.151	0.523	0.016
Kuwait	0.075	0.003	0.000	0.864	0.035	0.015	0.007
Kyrgyzstan	0.000	0.004	0.000	0.721	0.005	0.059	0.211
Lao People's D. Rep.	0.009	0.022	0.000	0.001	0.539	0.388	0.042
Latvia	0.192	0.132	0.004	0.003	0.001	0.374	0.294
Lebanon	0.272	0.005	0.001	0.597	0.021	0.063	0.042
Lesotho	0.482	0.240	0.000	0.000	0.001	0.275	0.002
Liberia	0.053	0.140	0.000	0.161	0.000	0.629	0.017
Libyan Arab Jamahiriya	0.014	0.001	0.000	0.967	0.004	0.012	0.002
Liechtenstein	0.735	0.091	0.001	0.064	0.000	0.070	0.040
Lithuania	0.791	0.012	0.001	0.002	0.000	0.088	0.105
Luxembourg	0.884	0.016	0.002	0.010	0.000	0.007	0.082
Macedonia	0.009	0.005	0.000	0.289	0.000	0.630	0.067
Madagascar	0.228	0.306	0.000	0.021	0.001	0.440	0.004
Malawi	0.256	0.293	0.000	0.132	0.002	0.314	0.003
Malaysia	0.045	0.035	0.000	0.570	0.114	0.231	0.005
Maldives	0.003	0.001	0.000	0.984	0.010	0.001	0.001
Mali	0.020	0.007	0.000	0.869	0.000	0.103	0.001
Malta	0.930	0.005	0.000	0.003	0.000	0.045	0.017
Marshall Islands	0.075	0.876	0.000	0.000	0.000	0.035	0.015
Martinique	0.885	0.081	0.000	0.002	0.003	0.008	0.022
Mauritania	0.001	0.000	0.000	0.991	0.000	0.007	0.001
Mauritius	0.251	0.084	0.000	0.168	0.432	0.037	0.027
Mayotte	0.004	0.002	0.000	0.988	0.000	0.004	0.002
Mexico	0.893	0.039	0.001	0.001	0.000	0.038	0.027
Micronesia, Fed. State of	0.551	0.394	0.000	0.000	0.005	0.043	0.008
Moldova	0.006	0.024	0.008	0.004	0.000	0.931	0.027
Monaco	0.823	0.030	0.017	0.005	0.000	0.011	0.114
Mongolia	0.000	0.007	0.000	0.044	0.250	0.352	0.346
Montserrat	0.067	0.817	0.000	0.000	0.001	0.085	0.030
Morocco	0.001	0.000	0.000	0.988	0.000	0.001	0.010
Mozambique	0.225	0.130	0.000	0.165	0.002	0.473	0.005
Myanmar	0.013	0.054	0.000	0.038	0.756	0.134	0.005
Namibia	0.213	0.626	0.001	0.004	0.000	0.138	0.018
Nauru	0.278	0.470	0.000	0.000	0.014	0.200	0.038
Nepal	0.000	0.007	0.000	0.044	0.797	0.149	0.003
Netherlands	0.291	0.186	0.002	0.064	0.019	0.176	0.262
Netherlands Antilles	0.764	0.173	0.003	0.002	0.007	0.018	0.033
New Caledonia	0.508	0.149	0.000	0.028	0.007	0.199	0.108

New Zealand	0.100	0.334	0.001	0.009	0.044	0.281	0.231
Nicaragua	0.792	0.168	0.000	0.000	0.001	0.022	0.017
Niger	0.001	0.001	0.000	0.926	0.000	0.071	0.001
Nigeria	0.133	0.286	0.000	0.457	0.000	0.121	0.003
Niue	0.100	0.627	0.000	0.000	0.000	0.252	0.021
Norfolk Island	0.114	0.505	0.000	0.000	0.000	0.230	0.151
Norway	0.013	0.871	0.000	0.031	0.007	0.034	0.043
Oman	0.027	0.003	0.000	0.886	0.059	0.022	0.002
Pakistan	0.007	0.012	0.000	0.963	0.013	0.005	0.001
Palau	0.415	0.308	0.000	0.000	0.009	0.241	0.027
Palestinian Territories	0.004	0.002	0.116	0.807	0.000	0.013	0.058
Panama	0.673	0.150	0.001	0.007	0.008	0.116	0.044
Papua New Guinea	0.283	0.642	0.000	0.000	0.002	0.067	0.006
Paraguay	0.869	0.040	0.000	0.000	0.003	0.067	0.021
Peru	0.892	0.074	0.000	0.000	0.002	0.018	0.014
Philippines	0.775	0.053	0.000	0.064	0.001	0.097	0.009
Pitcairn Island	0.000	0.920	0.000	0.000	0.000	0.000	0.080
Poland	0.916	0.004	0.000	0.000	0.000	0.044	0.035
Portugal	0.856	0.012	0.000	0.002	0.006	0.034	0.089
Puerto Rico	0.706	0.156	0.001	0.000	0.001	0.112	0.024
Qatar	0.070	0.011	0.000	0.863	0.026	0.015	0.015
Reunion Island	0.801	0.058	0.000	0.042	0.047	0.031	0.021
Romania	0.089	0.090	0.000	0.004	0.000	0.809	0.008
Russian Federation	0.006	0.009	0.001	0.110	0.004	0.813	0.057
Rwanda	0.457	0.303	0.000	0.053	0.000	0.185	0.002
Saint Helena	0.016	0.775	0.000	0.000	0.000	0.156	0.053
Saint Kitts and Nevis	0.097	0.773	0.000	0.003	0.015	0.096	0.016
Saint Lucia	0.698	0.262	0.000	0.004	0.009	0.023	0.004
Saint Pierre and Miquelon	0.927	0.011	0.000	0.002	0.000	0.019	0.042
Saint Vincent and the Grenadines	0.066	0.632	0.000	0.017	0.038	0.217	0.030
Samoa	0.187	0.596	0.000	0.000	0.000	0.209	0.007
San Marino	0.885	0.000	0.000	0.000	0.000	0.043	0.071
Sao Tome and Principe	0.849	0.036	0.000	0.000	0.000	0.101	0.014
Saudi Arabia	0.038	0.002	0.000	0.929	0.015	0.009	0.007
Senegal	0.046	0.001	0.000	0.879	0.000	0.070	0.004
Serbia	0.049	0.012	0.000	0.069	0.000	0.745	0.124
Seychelles	0.812	0.103	0.000	0.002	0.006	0.052	0.025
Sierra Leone	0.037	0.057	0.000	0.474	0.001	0.416	0.015
Singapore	0.050	0.058	0.000	0.186	0.188	0.469	0.048
Slovak Republic	0.745	0.095	0.000	0.000	0.000	0.015	0.145
Slovenia	0.811	0.015	0.000	0.018	0.000	0.081	0.074
Solomon Islands	0.198	0.737	0.000	0.003	0.003	0.055	0.003
Somalia	0.000	0.000	0.000	0.986	0.000	0.013	0.001
South Africa	0.066	0.260	0.002	0.025	0.026	0.588	0.034

Spain	0.903	0.003	0.001	0.014	0.000	0.001	0.078
Sri Lanka	0.072	0.013	0.000	0.096	0.811	0.003	0.005
Sudan	0.081	0.082	0.000	0.714	0.000	0.111	0.011
Suriname	0.310	0.179	0.002	0.159	0.211	0.094	0.045
Svalbard and Jan Mayen I.	0.000	0.337	0.000	0.000	0.013	0.261	0.389
Swaziland	0.048	0.124	0.000	0.006	0.001	0.808	0.012
Sweden	0.013	0.649	0.002	0.027	0.006	0.005	0.299
Switzerland	0.434	0.331	0.002	0.041	0.007	0.059	0.126
Syrian Arab Republic	0.022	0.002	0.000	0.928	0.000	0.028	0.020
Taiwan	0.013	0.017	0.000	0.004	0.265	0.656	0.044
Tajikistan	0.000	0.001	0.000	0.850	0.001	0.015	0.133
Tanzania	0.273	0.260	0.000	0.316	0.009	0.139	0.003
Thailand	0.005	0.004	0.000	0.063	0.867	0.042	0.019
Timor	0.802	0.041	0.000	0.041	0.002	0.109	0.004
Togo	0.233	0.112	0.000	0.197	0.000	0.455	0.003
Tokelau	0.308	0.617	0.000	0.000	0.000	0.058	0.017
Tonga	0.140	0.462	0.000	0.000	0.002	0.391	0.005
Trinidad and Tobago	0.286	0.267	0.000	0.072	0.247	0.104	0.023
Tunisia	0.002	0.000	0.000	0.995	0.000	0.000	0.002
Turkey	0.000	0.000	0.000	0.974	0.001	0.005	0.020
Turkmenistan	0.000	0.001	0.001	0.886	0.000	0.015	0.097
Turks and Caicos Islands	0.025	0.512	0.000	0.000	0.000	0.425	0.038
Tuvalu	0.013	0.889	0.000	0.001	0.002	0.059	0.037
Uganda	0.403	0.409	0.000	0.114	0.008	0.061	0.005
Ukraine	0.103	0.019	0.004	0.021	0.001	0.720	0.132
United Arab Emirates	0.098	0.005	0.000	0.760	0.088	0.037	0.012
United Kingdom	0.091	0.489	0.005	0.027	0.013	0.233	0.142
United States	0.224	0.191	0.016	0.016	0.015	0.418	0.120
Uruguay	0.609	0.029	0.012	0.000	0.000	0.004	0.345
Uzbekistan	0.000	0.001	0.002	0.848	0.002	0.014	0.134
Vanuatu	0.147	0.788	0.000	0.000	0.002	0.056	0.007
Venezuela	0.856	0.045	0.002	0.003	0.001	0.067	0.025
Vietnam	0.073	0.014	0.000	0.002	0.486	0.231	0.195
Virgin Islands, U.S.	0.269	0.490	0.003	0.001	0.004	0.194	0.039
Wallis and Futuna Islands	0.953	0.008	0.000	0.000	0.000	0.033	0.006
Western Sahara	0.000	0.000	0.000	0.994	0.000	0.002	0.004
Yemen	0.000	0.000	0.000	0.991	0.006	0.002	0.001
Zambia	0.308	0.352	0.000	0.010	0.002	0.326	0.002
Zimbabwe	0.100	0.205	0.001	0.008	0.002	0.672	0.013
Kosovo	0.033	0.001	0.000	0.899	0.000	0.052	0.015
Montenegro	0.041	0.018	0.000	0.158	0.000	0.735	0.048

Table A1. Proportion of population belonging to the listed religions, all countries.

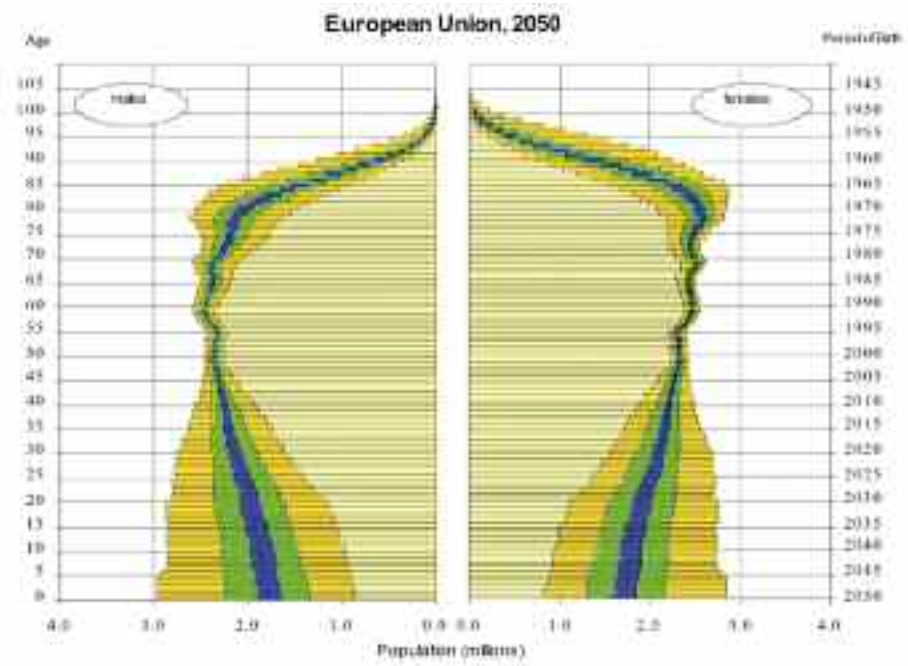

Figure 1. Probabilistic population pyramid for the European Union (EU-27) in 2050. The orange area gives the 95 percent uncertainty range, the green the inner 60 percent and the blue the inner 20 percent range. Source: Lutz *et al.* (2008a).

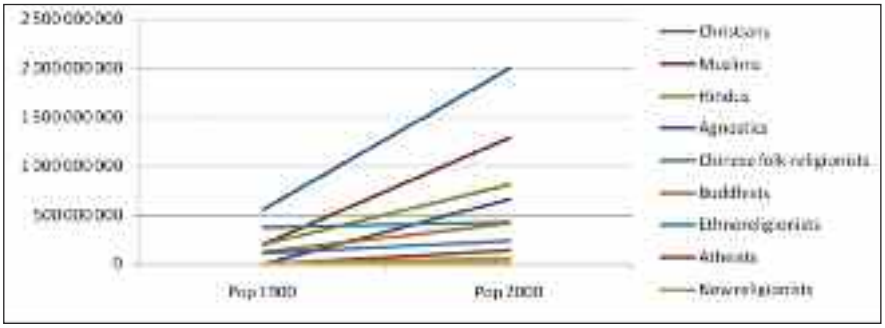

Figure 2. Religious change and estimates, 1900-2000. Source: Barrett *et al.* (2001).

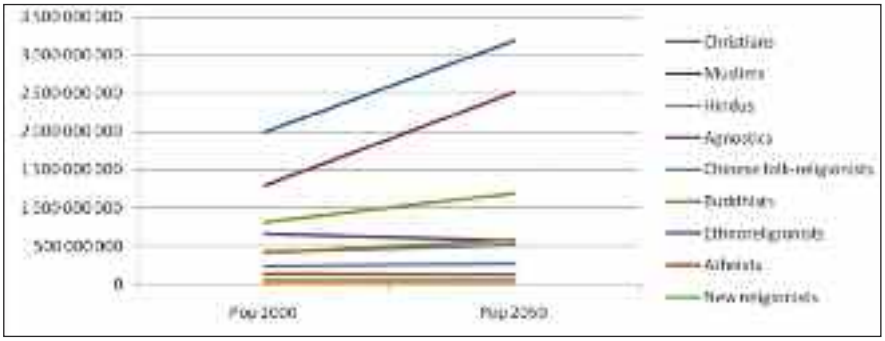

Figure 3. Projections of main religions, 2000-2050. Source: Barrett *et al*. (2001).

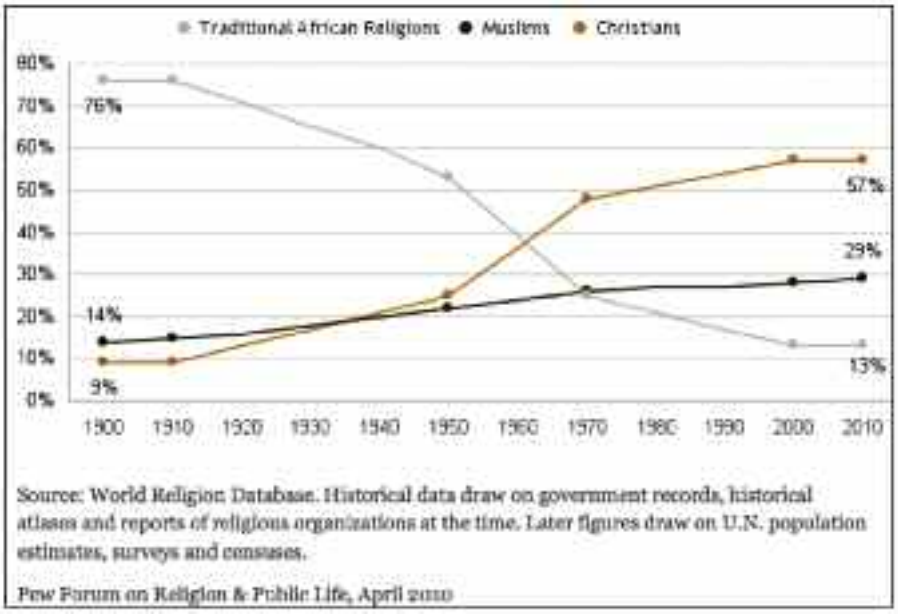

Figure 4. Growth of Islam and Christianity in Sub-Saharan Africa since 1900. Source: Johnson and Grim (2008). Historical data draw on government records, historical atlases and reports of religious organizations at the time. Later figures draw on U.N. population estimates, surveys and censuses.

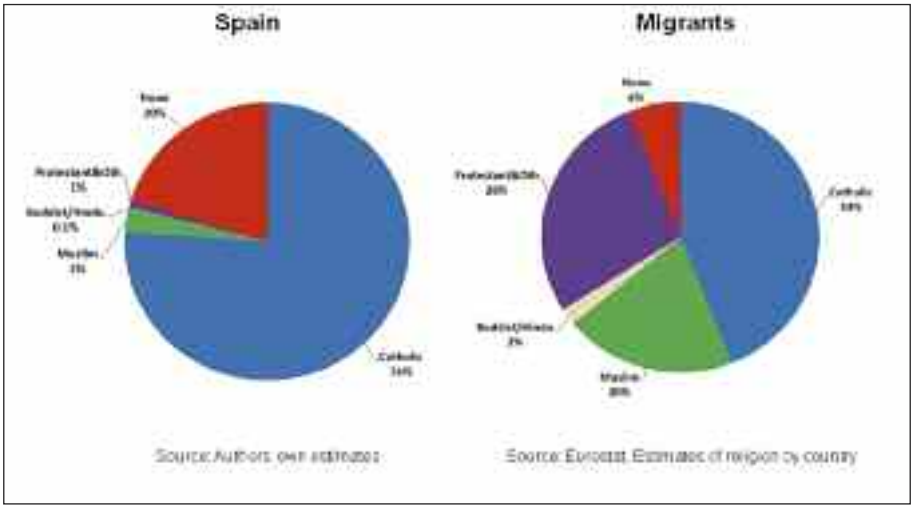

Figure 5. Religious composition of natives and immigrants, 2004. Source for Spain: Authors' estimates. Source for migrants: Eurostat, estimates of religion by country.

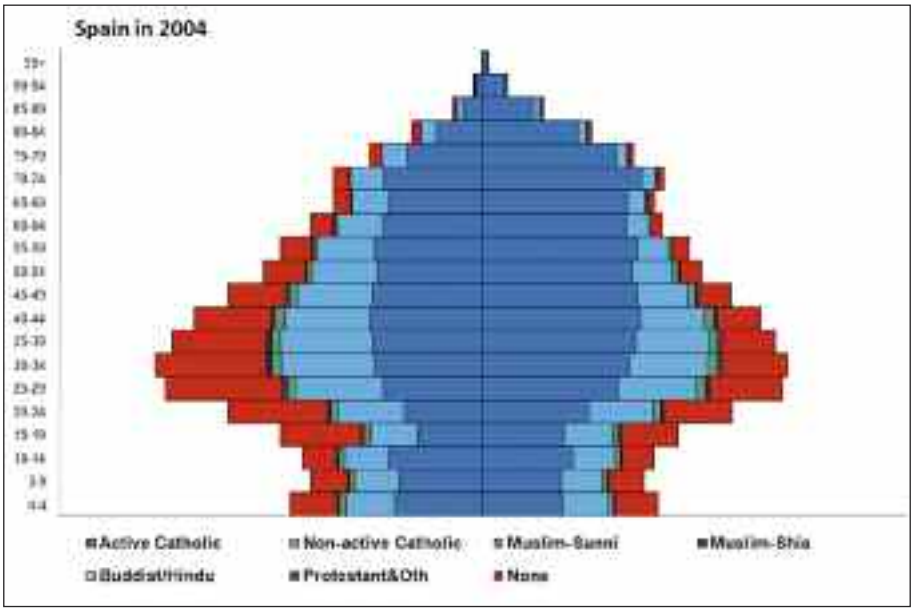

Figure 6. Estimated religious composition by age and gender, Spain, 2004. Source: Authors' estimates.

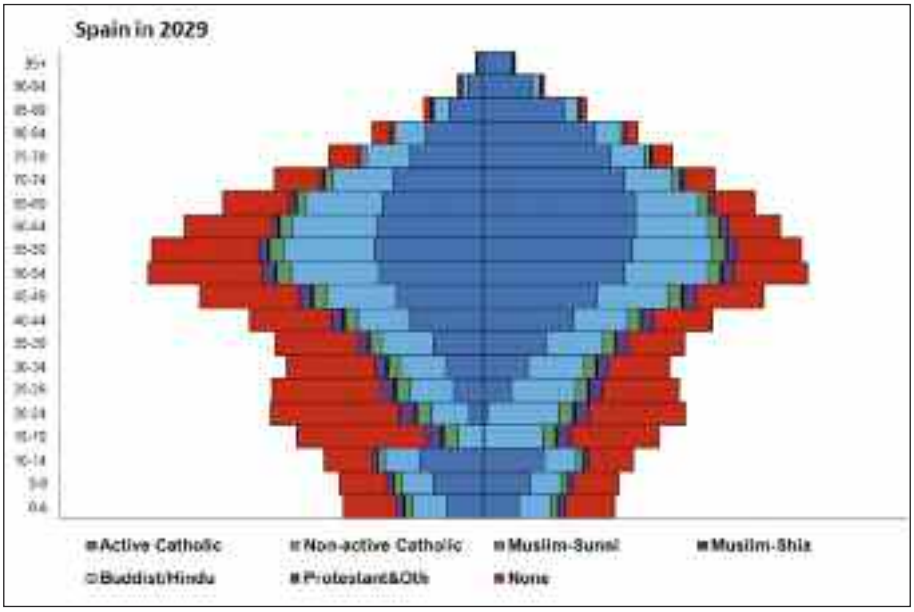

Figure 7. Projected religious composition by age and gender, Spain, 2029. Source: Authors' estimates.

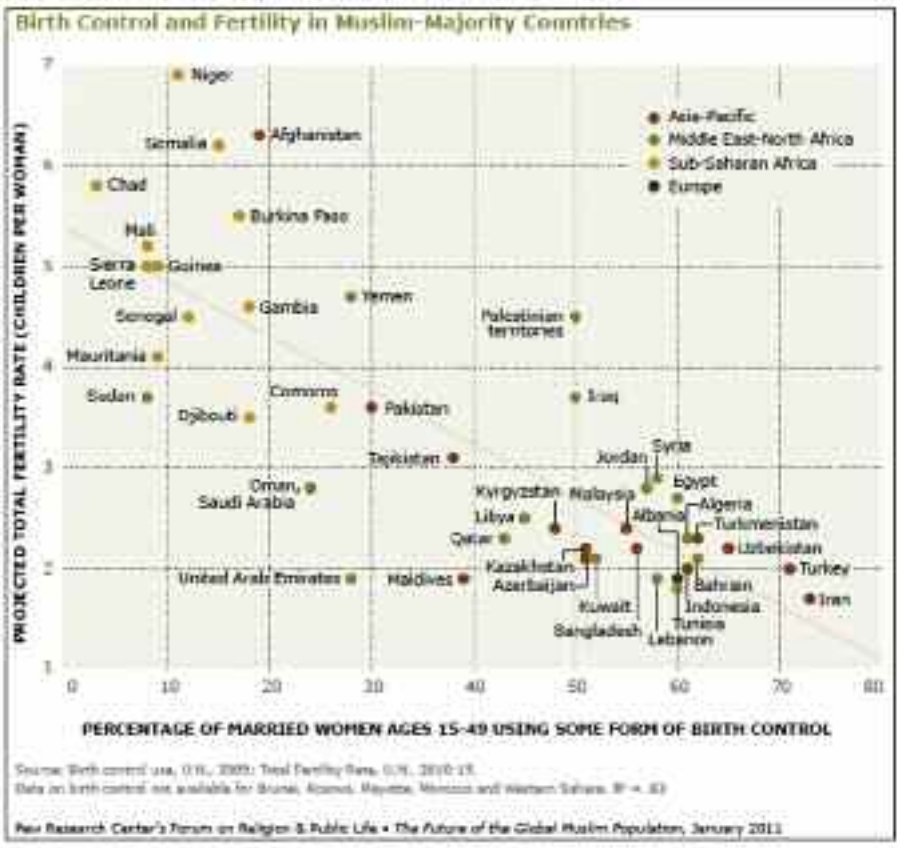

Figure 11. Relationship between female education and level of fertility for countries with Muslim majorities. Sources: Pew Forum on Religion and Public Life (2011); birth control use: UN (2009). Total Fertility Rate projected for period 2010-15. Data on birth control not available for Brunei, Kosovo, Mayotte, Morocco and Western Sahara. $R^2 = 0.63$.