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Will fertility reduce the decline in Religiosity?
Projections of Spanish Religiosity

INTRODUCTION

The growing stalemate between social theories of religious decline and those of persistence has prompted researchers to explore alternative explanatory factors such as demography. In most instances, people get their religion (or non-religion) through birth, thus the link between religion and population change is important. In spite of growing interest in the demography of religious change, little research has been conducted in this area¹. This is particularly true of projection work. Like standard multivariate models based on retrospective data, projections allow us to use parameters from the past and present to arrive at a model which can generalize into the future. In addition, existing age structures enable demographic projections to offer a stronger degree of predictability than social, economic or political forecasts. Instead of a point prediction of the future, however, cohort-component models produce a set of scenarios centering on a median prediction. These scenarios serve as a heuristic device to advance conceptual understanding by allowing us to think through how demographic change affects the religious landscape in a particular case, namely Spain.

Among the few studies that have undertaken multi-state projections of religion, the focus has been solely on affiliation (Barrett, Kurian, & Johnson, 2001; Johnson & Grim, 2008; PEW, 2011; Skirbekk, Goujon, & Kaufmann, 2010; Statistics Canada, 2005). This paper builds on this work by examining religious intensity in addition to denominational affiliation. Though this is not yet possible in many countries due to data limitations, it is an exciting new field which holds out the possibility that we may be able to specify what the religious landscape may look like in a country in a generation or two. In short, this is one of the first papers to offer a demographic projection of population groups distinguished not only by religion but by their levels of *religiosity*.

¹ Extant work generally focuses on the impact of religion on demography, i.e. Lehrer, 1996; Westoff & Frejka, 2007.

THE PLACE OF DEMOGRAPHY IN THEORIES OF RELIGION

Why might we want to understand the compositional effects, in terms of religious intensity, of a given set of demographic and switching dynamics? Perhaps the most pressing answer concerns the debate over secularization. The sociology of religion has featured a longstanding debate between theorists of secularization (Bruce, 2002; Dobbelaere, 2000; Martin, [1978] 1993; Swatos & Christiano, 1999) and proponents of the supply-side or religious markets model (Grim & Finke, 2007; Stark & Iannaccone, 1994), though there is a growing consensus that religious change is highly context-specific (Greeley, 2002; Hout & Greeley, 1987; Smith, 2008). One variant of secularization theory (Bruce, 2002) predicts a decline in the power of religious belief and practice. Secularization theorists generally argue that religiosity declines as countries achieve higher levels of development. Norris and Inglehart (2004) explain religious decline as a function of rising human development (principally as education and income), which allays individuals' fears of insecurity. Since insecurity is held to power religious belief, its disappearance allows secular alternatives to displace religion. Yet even secularization theory acknowledges that trends vary widely. Indeed, Norris and Inglehart acknowledge that patterns of religious observance map onto both culture zones such as Muslim or Protestant, and universalistic criteria such as income per capita. Naturally, particularist and universalist interpretations of religiosity data point in distinct theoretical directions. Acknowledging the role of particularism in producing wide cultural variation in patterns of religious change, Bruce (2002), for instance, restricts the application of his theory to the West. He argues that social differentiation – driven by both economic specialization and religious pluralism – undermines religion's relevance and truth claims. All told, when it comes to religious change, there is considerable variation between countries and regions. Modernity sometimes takes secular form, but at other times and in other places, it may inject religion with vigor (Davie, 2007). Others claim that we can find 'multiple modernities' even in Europe, where levels of religious change – in terms of attendance and belief – are highly variable between countries (Greeley, 2002).

Finally, several authors argue that demography – notably religious fertility and immigration premiums over the nonreligious – may be as or more important than switching in explaining the future religious makeup of the West (Hout, 2003; Kaufmann, 2010; Kaufmann, Goujon, & Skirbekk, 2011). The demographic approach should be conceived of as informing, but largely orthogonal to the secularization debate mentioned above. It affects the trajectory of religious change at the level of society, but not at the level of individuals. One could conceive of religious decline among individuals, as secularization theory might predict, even as society becomes more religious due to religious population growth. Alternatively, one might find that society is becoming less religious because a young nonreligious population is entering its childbearing years, even as more individuals switch into religion than leave it. Thus, demographic change affects the character of society – and in that sense is important for theory – but does not alter the sociological forces operating on individuals. A projection of a subset of the US population studies whether switching or fertility is more important in determining religious group population growth in the longer term (Scheitle, Kane, and Hook 2011). Their simulations suggest that both switching and fertility are crucial to growth, but groups that do not gain members through switching in the shorter term are doomed through switching.

Two of the main contemporary sources of demographic change that implicate religion are fertility and migration. Mortality, which is important in several historical accounts of religion (i.e. (Stark, 1996)) plays a lesser role today, especially in advanced democracies. Fertility, however, is almost always greater among those who practice their religion than among those without religious affiliation.

RELIGIOSITY AND FERTILITY

Differences in family size between religions are common, but this often has more to do with a group's position on the curve of demographic transition than with the intrinsic characteristics of

the religion itself. The decline of Catholic, and now Muslim, fertility provides evidence of this socio-economic convergence effect relative to Protestants (Westoff & Frejka, 2007; Westoff & Jones, 1979).

The intensity of religiosity (measured in terms of attendance at worship or self-reported belief) often matters more for fertility than religious affiliation (Finns, 1991; Jampaklay, 2008; Philipov & Berghammer, 2007). Practicing members of religions tend to have higher fertility regardless of religious affiliations, for example in France (Regnier-Loilier & Prioux, 2008) and in the US (Skirbekk, et al., 2010). Religiosity, although interconnected with the socio-economic, cultural, and political spheres (Lehrer, 2004; McQuillan, 2004; Philipov & Berghammer, 2007), has been found to be a powerful determinant of family formation patterns, notably marriage, age at first birth and number of children. Deeply religious individuals often argue that their current family beliefs and behavior result mainly from their religion's teachings, rather than being the outcome of other socio-economic traits (Borooah, 2004; McQuillan, 2004).

Differences in the relation between fertility and religious intensity between orthodox and nominal members of a faith will often exceed the differences between the median members of different faiths. This is most evident in Judaism, where the ultra-Orthodox typically have three or four times the fertility of liberal or secular Jews (Berman, 2000). Yet even in Christianity and Islam, fundamentalist groups typically have twice the fertility of theological liberals, with higher multiples being found in the most zealous religious groups such as the Old Order Amish or Quiverfull movements in Protestant Christianity (Joyce, 2009; Kaufmann, 2010).

Fertility patterns thereby reflect the 'religious restructuring' paradigm whereby differences in religious intensity within religions come to matter more than differences between faith traditions. This effect has been noted most clearly in the American context, where moral conservatives of all religious traditions – notably but not only Catholics and Protestants – have increasingly gravitated

toward the Republican Party while liberals of all faiths support the Democrats. The difference in presidential voting between 1960, when religious tradition was key, and 2004, when religious intensity trumped faith tradition, is stark (Guth, Kellstedt, Smidt, & Green, 2006; Wuthnow, 1989).

At the compositional level, changes in religious affiliation may understate the degree of religious change in a society because religious intensity goes unmeasured. Thus, although religious affiliation may apparently remain stable, beneath the surface great shifts in religious intensity may be occurring, one example being the growth in the proportion of the “belonging without believing” group (Marchisio & Pisati, 1999).

THE SPANISH CASE

Spain has some specificities that make the study of religion and religiosity particularly interesting. The country has shifted in just a few decades, through immigration and religious decline, from being almost exclusively Catholic to becoming religiously diverse. The Spanish religious landscape is still influenced by the Franco regime which invested Roman Catholicism with exclusive legal status. At the time of the Spanish transition to democracy after Franco’s death (1975), the number of non-Catholics was less than 1 percent (Solsten & Meditz, 1990). The return of democracy in Spain was accompanied by a rapid increase in religious decline among youth, and a rapid drop in fertility that witnessed a total fertility rate (TFR) fall from 2.8 in 1975 to 2.1 in 1981 and to 1.2 in 1998 (Goujon & K.C., 2009). The third component influencing religious composition and intensity in Spain is migration. Since the mid-1970s Spain ceased serving as an emigration country and increasingly became a receiving country. It first served as a transit point for migrants heading to Northern countries (especially France and Germany) at the end of the 1980s. From the end of the 1990s it became one of the most important destination countries in Europe, with newcomers arriving mainly from North Africa and South America. More recently, flows have broadened to

include non-traditional sources such as the rest of Africa, Asia and Eastern Europe. The post-2008 economic crisis could, however, drastically reduce immigration, whether formally – through the enforcement of stricter migration policies – or informally – through a lessening of attraction of pull-factors.

METHOD

The importance of religious projections lies in the degree to which they can inform us about the composition of populations in the future, given a set of demographic parameters such as fertility or migration, as well as sociological parameters for intergenerational transfers of religion and switching between religious groups.

It is important to appreciate that most countries of the world do not collect census data on religion. Even among those which do, there is no information on religious intensity (i.e. attendance, theology). It is therefore challenging to compute fertility and migration by levels of religious intensity within a country. Adding to the complexity is the need to generate assumptions about the religious intensity of future immigrants in the absence of data on immigrant religiosity. Yet, despite such limitations, this form of modeling generates important theoretical insights which make the task worthwhile. Moreover, data from a large survey such as the **Spanish module**, as used here, when triangulated with other sources, yields a revealing picture. Especially by incorporating a range of scenarios, projections methodology offers insights that are conceptually and empirically rich. Although our approach involves a significant degree of uncertainty, we argue that projections of religious intensity offer important new insights which add to typical, retrospective approaches. However, imperfections in the data do exist, which is why we seek to do our utmost best with the data available, while being mindful of such limits when interpreting the results.

In this study, we undertake multistate population projections² by religion and religiosity (religious intensity) for Spain for the period 2010-2050. First we estimate the base population for the year 2005 by age, sex, religion and religious intensity. We identify the size and composition of migration flows by denomination and religiosity. Differentials in childbearing patterns by religion and degree of religiosity are then calculated. Age- and sex-specific religious (denomination and religiosity) conversion rates are also taken into account. We further assume that children's religion and religiosity is identical to that of their mother until age 15. This is in line with research suggesting a strong link between parental religious beliefs and the beliefs of their children (Axinn & Thornton, 1993; Barber, 2001; Glass, Bengtson, & Dunham, 1986; Kelley & De Graaf, 1997), following parental socialization, preferences for passing on their own faith and contextual influences such as the religiosity of the neighborhood parents choose to live in. In the absence of compelling evidence to the contrary, this makes most sense as a baseline assumption.

The connection between mother and child, religion and birth, means that fertility differentials between religious groups based on denomination or intensity translate into larger or smaller numbers of offspring attached to each group. This therefore affects the religious (both denomination and intensity) composition of the next generation³.

We assume that there are no mortality differentials by religion as there is not enough evidence to underpin and parameterize an assumption of the causal impact of religion on mortality. Although often a positive association between religiosity and mortality has been found in, it is uncertain to which extent health-related selection and sorting into religion can play a role. Survival differences by religion may largely attributable to cross-sectional and prospective differences in personality traits, social ties, health behaviors, and mental and physical health – and a potential

² Multistate projections is a demographic methodology which is used in projections of populations disaggregated by status – individual characteristics that can change over time – such as education attainment, marital status, or religion and level of religiosity (for more see: Philipov & Rodgers, 1981; Rodgers, 1995; Rogers, 1975).

³ For a discussion, see Goujon, Skirbekk, & Fliegenschnee, 2007.

presence of publication biases indicates that results should be interpreted with caution (McCullough et al. 2009; Chida, Steptoe, and Powell 2009; Idler 2011).

We estimate migration flows by age, sex, religious affiliation and level of religiosity. Several scenarios, based on combining different fertility and migration assumptions, are constructed to cover a plausible range of possible outcomes.

The Spanish population, disaggregated by age, sex, religion, and degree of religiosity, is projected to 2050 based on assumptions contained in these scenarios. The results are then analyzed to determine the sensitivity of the projections to different fertility and migration assumptions.

DEFINITION OF RELIGIOSITY

Religiosity has been measured in surveys based on a range of different questions, including Religious Attendance, Religious Practice, and Self-Assessed Religiosity (see, e.g., (Billiet, 2003; Campbell 2005; Skirbekk, et al., 2010; Smith 1998). We focus mainly on the self-assessed religiosity measure because of our trans-religious approach - different religions emphasize different religious practices and activities (Kistler, 1995; Lotz, 1981). For instance, the doctrine of Sola Scriptura in Protestantism implies that Church attendance is not necessarily a requirement to be religiously devout, while for other groups, such as Catholics, church attendance is obligatory. When analyzing religious intensity between religions, the importance of religious attendance may also differ significantly, and comparing religious activities across religions may be more problematic than comparing religious traditions within one religious group.

In effect, while many measures of religiosity are suitable for comparing religiosity within one religion, they may be less suited to assessing religiosity between them, as different religions accord different weight to the importance of attendance, ritual and other practices. We

acknowledge that our primary religiosity measure, self-assessed religiosity, also has clear shortcomings, as different population subgroups might interpret it through local rather than global lenses. However, our belief is that the problems of self-assessed religiosity can be smaller than of alternative measures for raising comparability across religions and religious traditions strengthens this choice. We use a dichotomous definition of religiosity, where individuals are grouped according to whether they view themselves as “low” or “high” religious. For the resident Spanish population, we base our estimates on responses to the European Social Survey questionnaire (ESS, 2012), which includes self-assessed religiosity.

BASELINE ESTIMATES

POPULATION STRUCTURE

The structure of the Spanish population by age, sex, religious denomination, and intensity in 2010 is estimated using information from various sources. We focus on four groups: Christians, (predominantly Roman Catholics), Muslims, Unaffiliated and Others. Data on religion affiliation are not available from the census (IRFR, 2008)⁴. Thus we use data from surveys and municipal registers. To estimate the share of the main religious groups by age and sex, we use microdata from the 2010 Barometro Autonomico II survey (CIS, 2010). Undertaken by the Centro de Investigaciones Sociologicas (CIS) the survey only covers three religious categories – Roman Catholics, Unaffiliated, and Others. The data indicates that Spain is comprised of 75.2% Catholics and 19% Unaffiliated. We distinguish Muslims and Other Christians⁵ from the category ‘Others’ using other sources of data using procedures explained below.

⁴ According to the Spanish constitution no individual is obligated to answer questions regarding his or her religious beliefs.

⁵ Religious group called “Protestants and Others” mostly consists of Protestants, Orthodox, and other Christian groups (e.g., Marginals, Independents).

The substantial increase in the share of Muslims is a recent phenomenon driven mainly by immigration. We use official statistics on stock of migrants by age, sex and country of birth (from the Spanish National Statistical Institute, INE 2011) to estimate shares of religious groups that result mainly from relatively recent migration. For instance, the growth in the number of Muslims began in the early 1990s at which time the size of this group was estimated at just 2,350 people (Peach & Glebe, 1995).

In 2010 there were 6.9 million immigrants in Spain – around 15.2% of the total population (World Bank, 2011), with Moroccans forming the second largest single group (around 0.63 million⁶). We acknowledge that migration has in several cases been selective regarding age, sex, education, and also religion (Ambrosini, Mayr, Peri, & Radu, 2012; Connor, 2012). We use findings from *Pew Research Forum's Faith on the Move Project* (Pew 2012) to account for selection of migrants by religion when data are available. For origin countries where data on religion on migrants are not available assumption the migrant flow is representative of the religious composition of country of origin . Our indirect approach means we need to bear these limits in mind when interpreting the results. Information on religious compositions by country needed in our estimation was collected from Pew Forum's Global Religious Landscape project (Pew, 2012), and the World Religion Database (Johnson & Grim, 2010). These sources estimate that Spain's population was 2.1% Muslim in 2010. The share of Other Christians was estimated to be about 3.4%; According to Johnson and Ross (2009) there were 130,000 Evangelicals and 120,000 other Protestants in Spain in 2010. In recent years population of Orthodox Christians has grown rapidly because of inflow of migrants from Romania – the largest group of migrants in Spain in 2010 (0.76 million; INE 2011)

To assess the degree of religiosity in the population, we categorize each religious denomination in two groups: High and Low Religiosity. The distinction between the two groups is

⁶ Data from the Spanish Municipal Register (Padron) 2010 (INE,2011)

based on self-assessed religiosity estimated using data from European Social Surveys 2006-2010 (ESS, 2012)(wave III to V) [11-scale question: *Regardless of whether you belong to a particular religion, how religious would you say you are?*, recoded as: 6-10 “High Religiosity”, 0-4 “Low Religiosity”]⁷. To estimate the composition for Spain, it was not possible to use only the Spanish ESS data. Thus we pool data on Muslims from Spain, France, Netherlands, Belgium and Italy (countries with large Moroccan diaspora). Religiosity by age and sex of Others are assumed to be the same as in total population of Spain.

The age structure of the Spanish population, by sex and religion, is given in Figure 1. it reveals that older age groups are dominated by high religious Christians, while those with no religion have a younger age structure, and minority religions are younger still. The figure shows that the high religious tend to be older (regardless of denomination), that women are more religious than men, and that the youngest age groups are somewhat more religious – which follows the greater fertility of the more religious coupled with intergenerational transmission from parents to children.

⁷ The current “6-10” group encompasses 39% of the population 15 and above in Spain , whereas a “5-10” grouping would include 57% of the population. Calculations were based on ESS (2012) 3-5 wave data (2006-2010).

Figure 1. Population Age Structure, by Sex, Religious Denomination and Intensity in Spain in 2010⁸

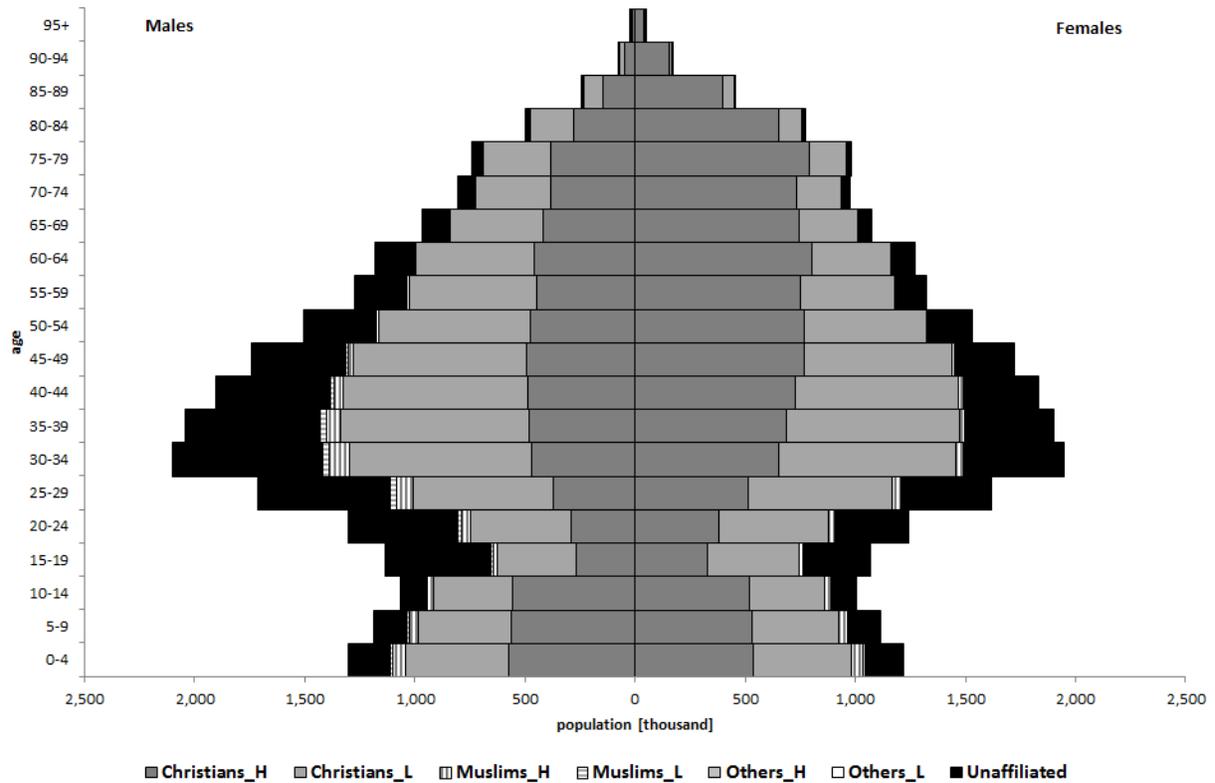


Table 1. Religious and religious intensity composition by age in Spain in 2010 [%]

Age	Christians		Muslims		Others		Unaffiliated	Total	
	High	Low	High	Low	High	Low		High	Low
15-34	27.0	38.3	2.9	0.9	0.2	0.1	30.6	30.2	39.3
35-64	38.2	40.6	1.2	0.5	0.2	0.1	19.2	39.6	41.2
65+	66.2	28.0	0.1	0.1	0.1	0.1	5.4	66.4	28.1

⁸ labels used in graphs: Denomination-H stands for Denomination-High Religious; Denomination-L means Denomination-Low Religious;.

FERTILITY

Estimates of fertility differentials are based on the 1999 Spanish Fertility Survey (INE, 1999) and municipal registrations of births and population by nationality and age of mother⁹ (INE, 2011). Fertility of Muslims is assumed to be equivalent to that of Moroccans, Algerians, and Pakistanis combined; together they constitute about 84% of the estimated Muslim population of Spain.

Differences in Spanish fertility by degree of religiosity are based on results of the average number of children ever born for females 40-49 from the European Social Survey Round 3 survey (ESS, 2012). This estimation was possible only for Christians (and for the overall population) because the sample size was too small for estimations for all other groups. To get a large enough sample to calculate intra-Muslim intensity differences, we use a sample including respondents from all nations participating in the survey (23 European countries). They constitute about 3% of the total ESS sample. For Others we assume (due to a lack of other data) that the differences in fertility between those with high and low religiosity are equal to that observed for the total population of Spain. The TFR estimates by religious intensity are provided in Table 2. The fertility of the high religiosity group is 2.0, the low religiosity 1.4, and for those with no religion, it stands at around 1 child, which supports the notion that the more religious have more children, regardless of faith tradition.

Table 2. Total Fertility Rate by level of religiosity in Spain in 2010-2015

<i>Religion</i>	<i>Christians</i>		<i>Muslims</i>		<i>Others</i>		<i>Unaffiliated</i>	<i>Total</i>		<i>Total</i>
	<i>High</i>	<i>Low</i>	<i>High</i>	<i>Low</i>	<i>High</i>	<i>Low</i>		<i>High</i>	<i>Low</i>	
TFR	1.9	1.3	4.2	3.1	1.8	1.3	1.0	2.0	1.4	1.5

⁹ INE data for the period 1996-2008

The high fertility of the Muslim population is partly likely to be due to the fact that most Muslims in Spain are recent migrants. Many come for marriage-related reasons, which lead to greater fertility in the shorter term after arrival. Further, many Muslims arrive from countries with relatively high fertility, although most originate from the Maghreb, where fertility is close to replacement level. Women in Morocco, for instance, bear 2.4 children on average. Over time, with a longer duration of stay and increased integration, the fertility of this group is likely to at least partially converge with the population average (which would be in line with empirical findings from Germany, the UK, and Canada: Caron Malenfant, Lebel, & Martel, 2010; Coleman & Dubuc, 2010; Schmid & Kohls, 2009).

RELIGIOUS SWITCHING

Conversions between religious groups tend to be concentrated relatively early in life, at ages 15-29. Based on patterns in our survey data, backed by insights from previous work, we assume that religious intensity tends to change less at later ages. This assumption is supported by several theoretical and empirical studies, including longitudinal, retrospective, and age-period-cohort analyses. In particular, conversion and secularization tend to take place in early adulthood in Europe. Beyond early adulthood, switching affiliation and varying one's level of religiosity is less

likely. Thus religious change may, to a significant degree, take place along cohort lines, with cohort replacement driving aggregate religious shifts.

The likelihood that one changes one's denomination may also depend on changes in brain functioning and hormone levels over the life cycle. Archer (2006) shows that as testosterone rises early in life, behavioural changes are facilitated - high testosterone levels may be a reason for fundamental social change and riskier attitudes and behavior. Impressions made early in life can have a stronger imprint on one's value understandings than later experiences (Rubin 1999). Over the life course, there are age expectations, informal sanctions, social timetables and generalized age grades (Ryder 1965, Settersten 1996). Norms and expectations can determine the timing and incidence of life cycle changes. The human capital model of life cycle change suggests that individuals alter their beliefs and religious views in a matching procedure which occurs early in life (Becker, 1981). As an individual matures, he or she increasingly invests in a particular religious community, hence, the cost of religious switching increases as the "capital" specific to that religious community grows. The upshot is that few middle-age adults and even fewer seniors convert (Iannaccone, 1992).

To generate assumptions about transition rates by religious intensity, we cross-tabulate data from ISSP 2008 Religion III survey on a respondent's retrospective attendance at age 11-12¹⁰ with their current religious attendance¹¹. We acknowledge that some studies find that recall bias may affect estimated attendance over the life cycle (Berney & Blane, 1997; Hays, Meador, Branch, & George, 2001; Ploch & Hastings, 1998).

We use attendance at religious services at least once a month as the limiting condition for being highly religious, as using this value yields the highest degree of average religiosity on scale in

¹⁰ Wording of the question: "And what about when you were around 11 or 12, how often did you attend religious services then?"

¹¹ Wording of the question: "How often do you go to mass or other religious services, excluding the occasions related to social ceremonies, such as weddings, first communions, or funerals?"

the ISSP 2008¹². Our estimates are given in Tables 3a and 3b, where transitions from and to religious intensity groups and apostasy rates for these groups are taken into account. Transitions for Others are not taken into account, as data are not available.

Results shown in Table 3a suggest that around 50-70% of Christian males changed their religion and degree of religiosity during their life. For example, among men raised in highly religious Catholic families, only 28% remain high religious, 51% experience lower religiosity but retain an affiliation, and 21% become unaffiliated. In the case of females in our sample, among those raised as high religious Catholics, 59% changed their religious status compared to 72% of men (Table 1b). This suggests that strongly Catholic women in Spain retain their religiosity at higher rates than men. However, females raised as low-intensity Catholics behave similar to males raised the same way.

Table 3 a-b). Switching rates of religion and religiosity [in percentages]

a) Males

Religious group			Current						
			Christians		Muslims		Others		Unaffiliated
			High	Low	High	Low	High	Low	
Former	Christians	High	28	51	0	0	0	0	21
		Low	4	54	0	0	0	0	42
	Muslims	High	0	0	43	39	0	0	18
		Low	0	0	16	43	0	0	41
	Others	High	0	0	0	0	100	0	0
		Low	0	0	0	0	0	100	0
Unaffiliated			0	27	0	0	0	0	70

b) Females

¹² According to the ISSP 2008 among respondents who attend religious services at least once a month, around 82% define themselves as “somewhat religious” or higher.

Religious group			Current						Unaffiliated
			Christians		Muslims		Others		
			High	Low	High	Low	High	Low	
Former	Christians	High	41	48	0	0	0	0	11
		Low	12	57	0	0	0	0	31
	Muslims	High	0	0	37	47	0	0	16
		Low	0	0	12	54	0	0	35
	Others	High	0	0	0	0	100	0	0
		Low	0	0	0	0	0	100	0
	Unaffiliated		0	34	0	0	0	0	66

MIGRATION

Migration data is provided by Table 4 , which shows the distribution of inflow and outflow by religion and religiosity. Estimating religion and religious intensity for immigrants is difficult due to data limitations. Baseline inflow and outflow of migrants for Spain are calculated based on estimates of international migration bilateral flows (Abel, 2013), and data on migrants by nationality and country of birth from Spanish national statistical office (INE). We combine this information with estimates of flow by religion from the Pew Research Forum’s Faith on the Move Project (Pew 2012). We collected information of self-assessed religiosity from several international surveys: ISSP, ESS, EVS and WVS, and use in estimation of religiosity of migrants in Spain. We are aware that there is a significant difference between questions on self-assessed religiosity in these data sources (used in estimation of baseline structure) but we lack comparable data at the world scale. Using our projection model of bilateral flows by age, sex and religion for 199 countries (...) we calculate size and composition of migrants to Spain in 2010-2060.

Table 4. Religious Affiliation and Religiosity Composition of migration flows in Spain

<i>Religion</i>	<i>Christians</i>		<i>Muslims</i>		<i>Others</i>		<i>Unaffiliated</i>	<i>Total</i>	
<i>Religiosity</i>	<i>High</i>	<i>Low</i>	<i>High</i>	<i>Low</i>	<i>High</i>	<i>Low</i>		<i>High</i>	<i>Low</i>
Out-migration	29.8	36.7	9.7	3.1	0.7	0.3	19.6	40.3	40.1
In-migration	46.6	23.7	9.5	5.0	2.3	1.2	11.7	58.4	29.9

Spain has experienced the change in migration pattern in 2000s . Until the year 2007 it was dominantly in-migration country with high and growing number of immigrants that reached the peak of around 900 thousand people (2007) and low number of emigrants which was below 100 thousand per year (e.g. Eurostat 2013). After that because of decrease of economic conditions in Spain the trend in immigration and emigration changed. We observe the change towards zero net migration with increasing trend of emigration and decreasing in immigration. According to Eurostat, in 2010 around 403 thousand people left Spain and 465 thousand come to this country. Thus, during five years net migration dropped from 731 thousand in 2007 to 62 thousand people in 2011. Recent provisional data from INE suggest that net migration reached negative values in 2012.

PROJECTION SCENARIOS

To investigate the impact of fertility differentials and migration, we project five different scenarios.

FgMcSn: Fertility differentials gradually converge; migration size and composition is stable; no switching

FgMcSs: Fertility differentials gradually converge; migration size and composition is stable; switching rates are stable

FsMzSn: Fertility differentials are stable; zero migration; switching rates are stable

FsMzSs: Fertility differentials are stable; migration is zero; switching rates are stable

FgMzSs: Fertility differentials gradually converge; migration is zero for the whole projection period; switching rates are stable

In the fertility convergence scenario (*Fg*), all religious faiths and those without religion are assumed to eventually experience the same fertility level (by 2060) – which implies for instance that those with no religion are expected to gradually increase their fertility. The *Fs* scenario considers what the situation would be if fertility would continue as it is today.

We consider both continued migration and (*Mc*) and no migration (*Mz*) scenarios. The main hypothesis behind the five scenarios is that fertility differentials will be greater if high migration levels continue.

Note that in this paper we focus on demographic change and assume a fixed pattern of switching identical to that obtaining in the mid-2000s (*Ss*). The current rate of switching out of religion in Spain is relatively high in historic terms and has substantial effects on the religious composition of the future. We also consider the case where no switching (*Sn*) takes place in order to be able to compare the effects of switching with the situation where no switching occurs.

PROJECTION RESULTS & DISCUSSION

The paper at hand presents what to our knowledge is the first projection of religiosity intensity in a population. This bears strongly on the critical question of the future of religiosity and secularization in Europe. It also informs the debate over religious restructuring, which claims that there is a growing polarization in which a decline of moderate religion is accompanied by the concomitant expansion of the "extremes" of strong religion and secularism. This can have important consequences on for instance politics, social norms, national identity and international relations

(Martin 2012; Roy 2010; Barkey 2011). We explore this question through the prism of the Spanish case, considering three religious intensity groups: "High," "Low" and "Non-religious"—and the religious affiliation categories of Christians and Muslims.

Spain has, in recent decades, simultaneously experienced rapid religious decline and marked demographic change. Fertility has declined sharply while immigration has surged. As a result, its religious-demographic composition is evolving quickly.

Our findings are presented in Figures 6 a-e. Displayed are the changes in the proportion of the Spanish population by religious groups (with intensities nested therein) over 2005-2050. One finding is that fertility differentials and more immigration produces an increase in the share of the high religious in Spain. The more religious tend to have higher fertility, regardless of their affiliation, and immigrants tend to be more religious than the indigenous population.

How is this likely to affect the composition of the Spanish population in the future? Although fertility differentials and immigration may raise the share of the more religious, there are important mechanisms which are likely to reduce religiosity in the population. Those without religion have a younger age structure, which implies that they will grow through cohort replacement even if religious apostasy were to cease tomorrow. The highly religious are older and will therefore decline in the coming decades as highly devout older cohorts die off. Furthermore, religious switching produces a substantial increase in religious "nones", as leaving religion is far more common than switching between religious groups or from no religion to a religious group.

If fertility differentials and migration levels continue at the level of the mid-2000s (FgMcSn) and there is no switching, the share of Christians with high religiosity will decline from 41,4% in 2010 to 40,5% in 2025, but will then *rise* to 42,6% in 2050. The unaffiliated are projected to decline from 18,9% in 2010 to 17,3% by 2050

If switching continues there will be a decrease in the share of Christians with high religiosity (falling to 29,5% in 2050), but a growth among low religiosity Christians (from 37% in 2010 to 39.5% in 2050). There is also likely to be an increase in share without religion (rising to 24,8% in 2050). If fertility differentials should be constant and there would not be any migration but stable switching (FgMzSs) there would be an increase in the share of low religiosity Christians to 43.4% by 2050.

We focus on Muslims, as it is the largest minority religion, and we find that in the shorter term, the gradual convergence in fertility, but constant migration and stable switching (FgMcSs) implies that the high religious Muslims will grow from 2,4% in 2010 to 5,2% in 2050. However, the scenario with stable fertility differences but zero migration (FsMzSs) implies an initial slower growth of the Muslims, but by 2050 this scenario predicts that they will reach 6%, reflecting that fertility differences has stronger implications for growth than conversion in the longer term. If fertility differentials would converge, there would be zero migration and stable switching (FgMzSs), the high religious Muslim population is projected to stabilize at a level of around 2,1% already by 2020 and remain constant until 2050.

An increase in the non-Christian share of the population, is, however, found in our scenarios where immigration and fertility differences (or one of the two) continue to take place. Migrants in Europe have in many cases shown relatively little tendency to become less religious. Ethnic minorities may use religion as a boundary marker, which reinforces religion. This reflects cultural defense theory in which ethnic difference offers religion "secular" work to do, thereby protecting it from decline in secularizing societies (Bruce, 2002; Martin, [1978] 1993). Moreover, a falling rate of religious decline among the native white Christian population as the core practicing population, increasingly identified as a remnant, is also reflected in some studies (Jenkins, 2007; Kaufmann, et al., 2011). In many Protestant European countries as well as in France religious decline began earlier than in most Catholic countries, and has largely flattened out. Spain, like Ireland, belongs to the wave of

late-declining Catholic countries which are still undergoing swift switching away from organized religion.

Christians will remain in the majority over the projection period although their share is forecast to fall from 78,5% to 67,2%-75,9% depending on the scenario. Stable fertility differences, zero migration and no switching (FsMcSn) implies first a reduction in the share of high religious Christians, from 41% to 24,6%, while a growth in the low religious Christians from 37% to 42,7% by 2050.

However, if migration should continue, the longer-term pattern could more closely conform to the polarization model, with religious "nones" growing, the highly religious stabilizing or increasing slightly, and those with low religiosity declining. With a gradual convergence in fertility, constant migration and stable switching (FgMcSs) there will be a growth in both the high and low religious Christians and Muslims and Others and a slight reduction in the share who are unaffiliated.

The projections suggest a change in the religious landscape in Spain which accords with the religious restructuring paradigm. Seculars and the highly religious are increasing their market share, while moderates are declining. This has parallels in, for example, the United States, where evangelical Protestants and the religiously unaffiliated are growing relative to mainstream Protestants (Hout, Greeley, & Wilde, 2001; Putnam & Campbell, 2010; Skirbekk, et al., 2010). The projections also reveal that religious decline in Spain, despite its continued near-term increase, is likely to be slower in the future than in the decades since the fall of General Franco in 1975.

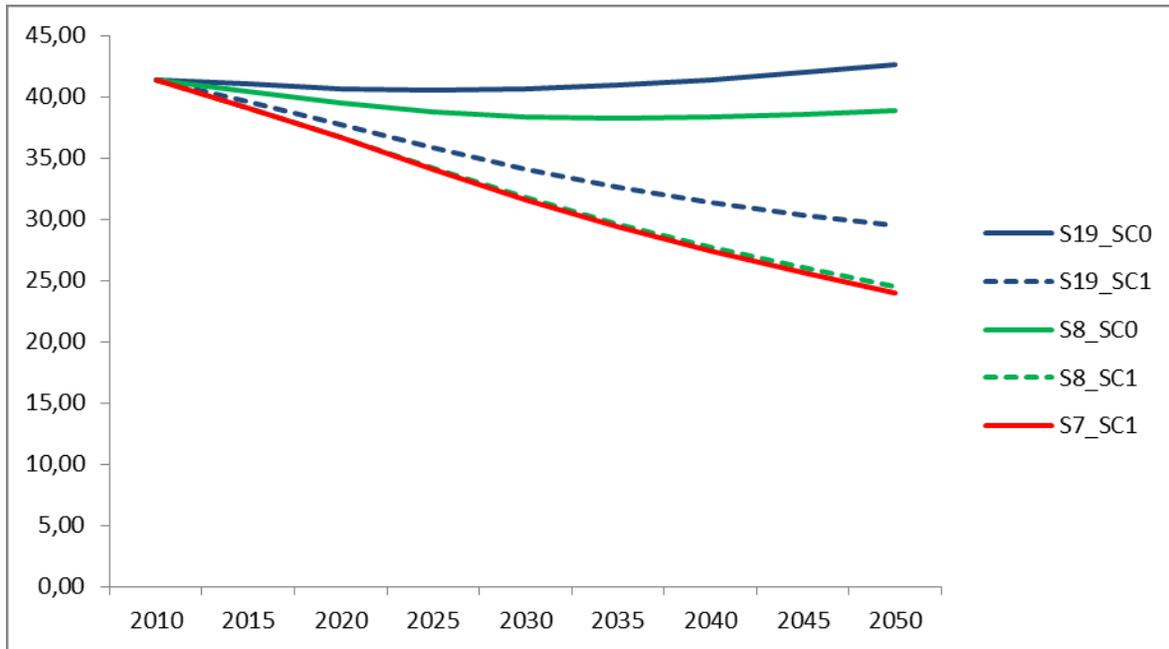
Furthermore, the projected rebound of the highly religious population and the potential peaking of the secular population (under a constant fertility and migration scenario), imply that 'desecularization' may begin to take place after 2050. This echoes similar work focusing on the United States, northwestern Europe, and Israel (Cincotta & Kaufmann, 2009; Kaufmann, 2010; Kaufmann, et al., 2011; Skirbekk, et al., 2010). This suggests that demography is a key factor

mediating change at the aggregate level, and that individual-level dynamics – whether of decline or revival – cannot be simply scaled up to the level of society. It further indicates that the trajectory of European modernity, to say nothing of modernity *tout court*, cannot be assumed to be one of inevitable secularization (Gray, 2003).

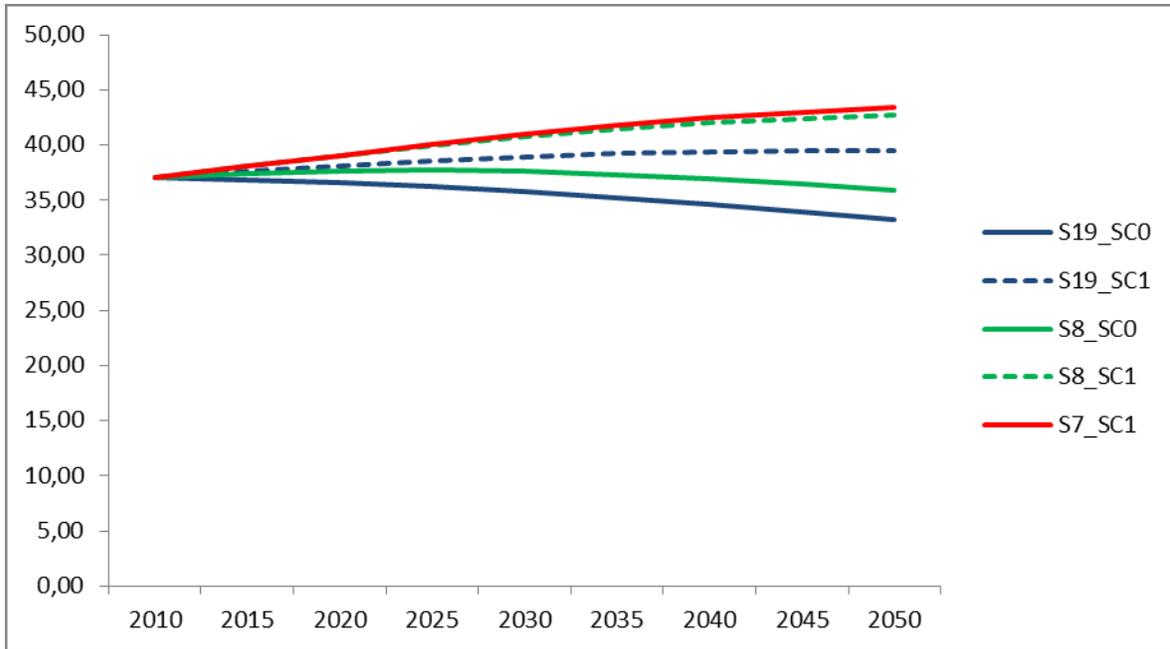
Our findings suggest that in the longer term (2050) there can be growth in the no-religion population, a decline among those with low religiosity, and stabilization or eventual growth among the highly religious. The growth of religious “nones”, a decline among those with low religiosity and an increase among the highly religious could, as noted, produce increasing religious polarization. Why? In part because those with low religiosity may function as “bridge-builders” between the non-religious and the highly religious. In Britain, for instance, Anglican bishops, especially the Archbishop of Canterbury, play a public role in balancing the concerns of committed religious people with those of the nonreligious. The “theology-lite” offered by such figures presents a moderate face of religion to seculars and vice-versa, resulting in a relatively favorable view of religion among even the nonreligious (Bruce, 2002). A decrease in this segment may therefore portend increased social division.

Figure 6 a-e) Projections of religions and religiosity by scenario

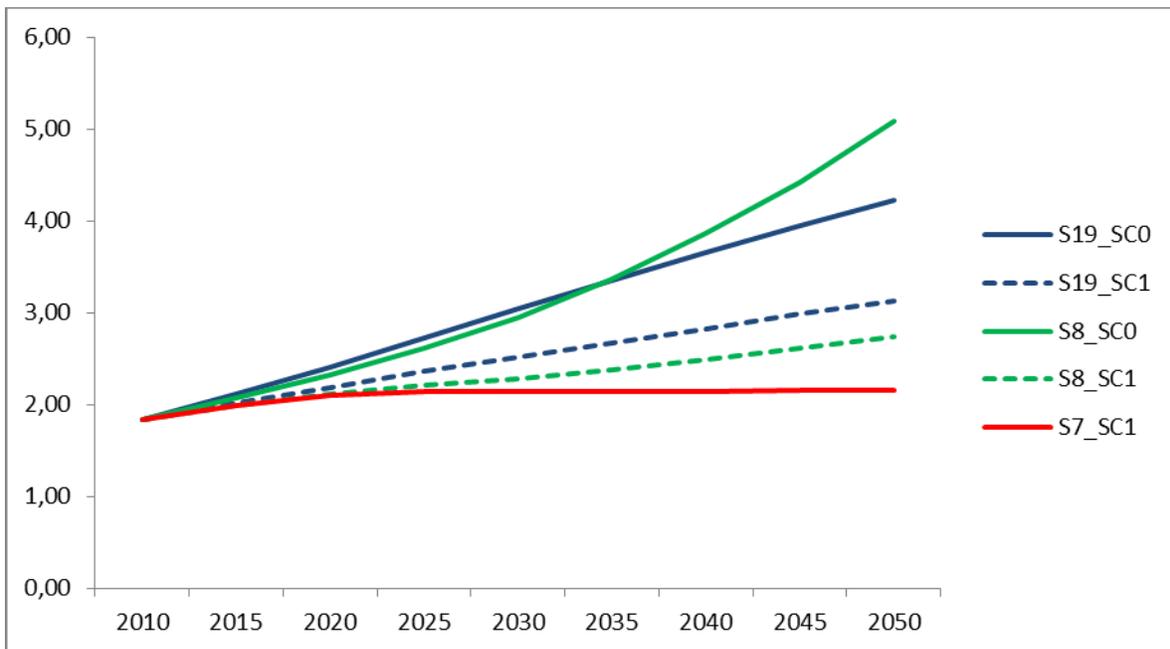
a) Christians with high religiosity



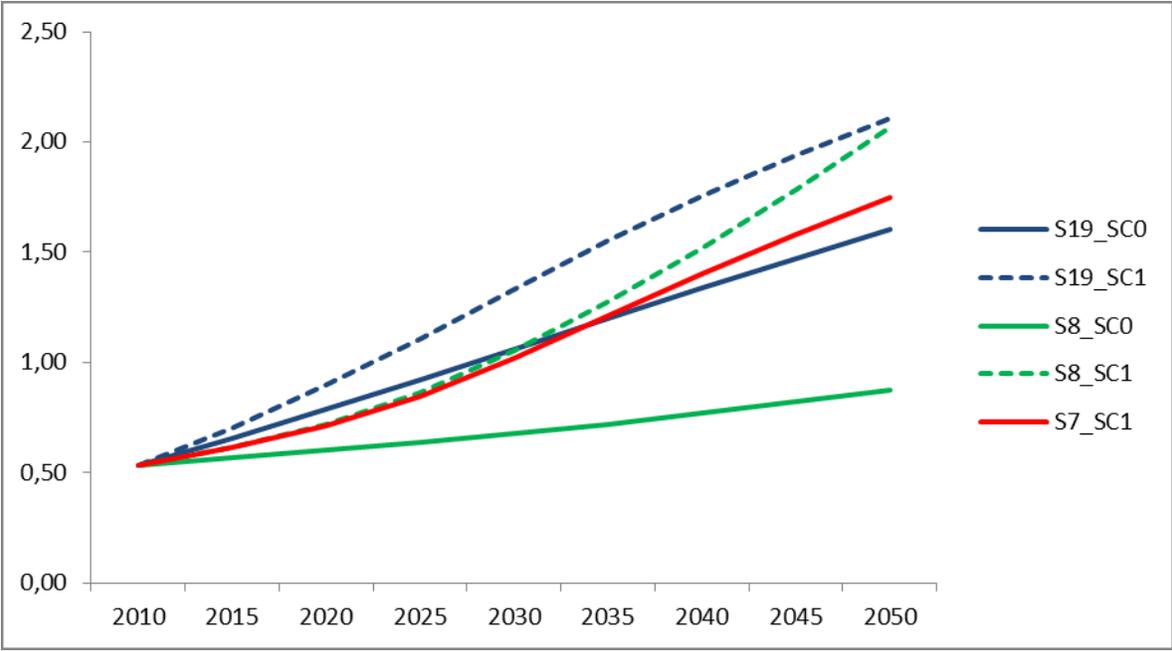
b) Christians with low religiosity



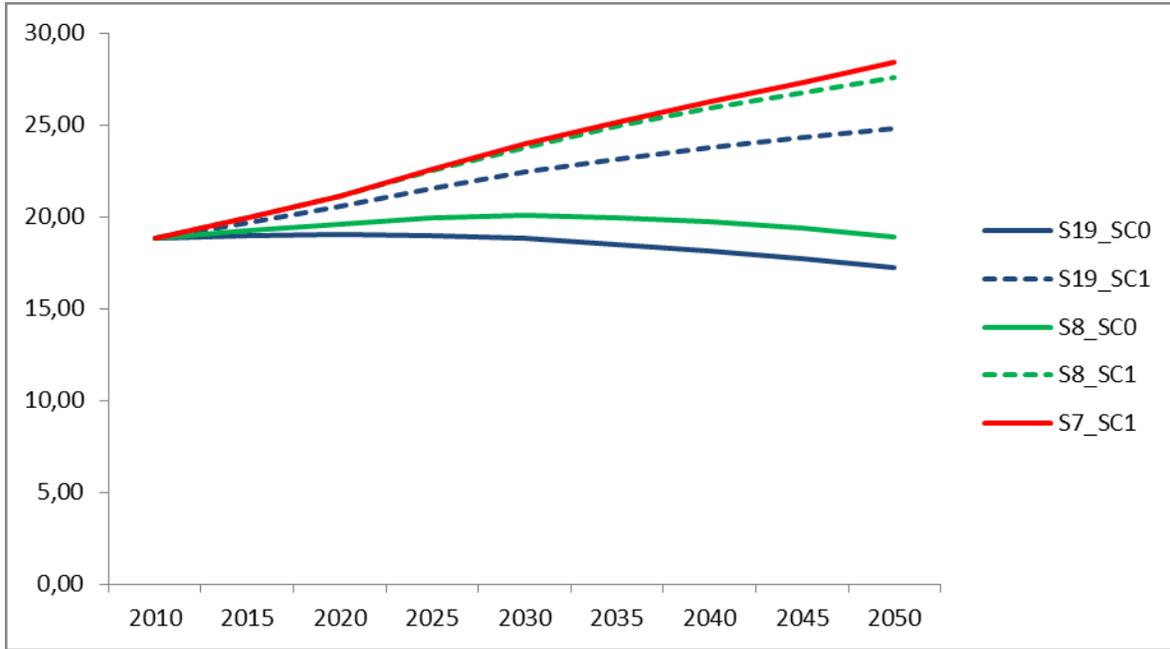
c) Muslims with high religiosity



d) Muslims with low religiosity



e) Unaffiliated



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