

The Impact of Exogenous Shocks on Exits from the Catholic and Protestant Churches in Germany, 1953-2015

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Abstract

In Germany, exits from the Catholic and Protestant churches have fluctuated considerably over the last 60 years. Much of the observable variation in these exits can be explained by exogenous shocks such as unpopular encyclicals by the Pope, German reunification, sexual abuse cases and financial scandals.

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1. Introduction

Economic theory posits that utility-maximizing individuals join an organization when the expected returns to membership exceed the expected costs and eventually leave that organization when the expected costs rise above the expected benefits. However, membership in a particular religious denomination is usually passed over from parents to their children who usually do not decide themselves to join a church but are rather born into it. This suggests that the only decision that most individuals can make in their lifetime is to either remain a loyal member or to exit at some point in time – depending on how they perceive the relationship between costs and returns of continued membership.

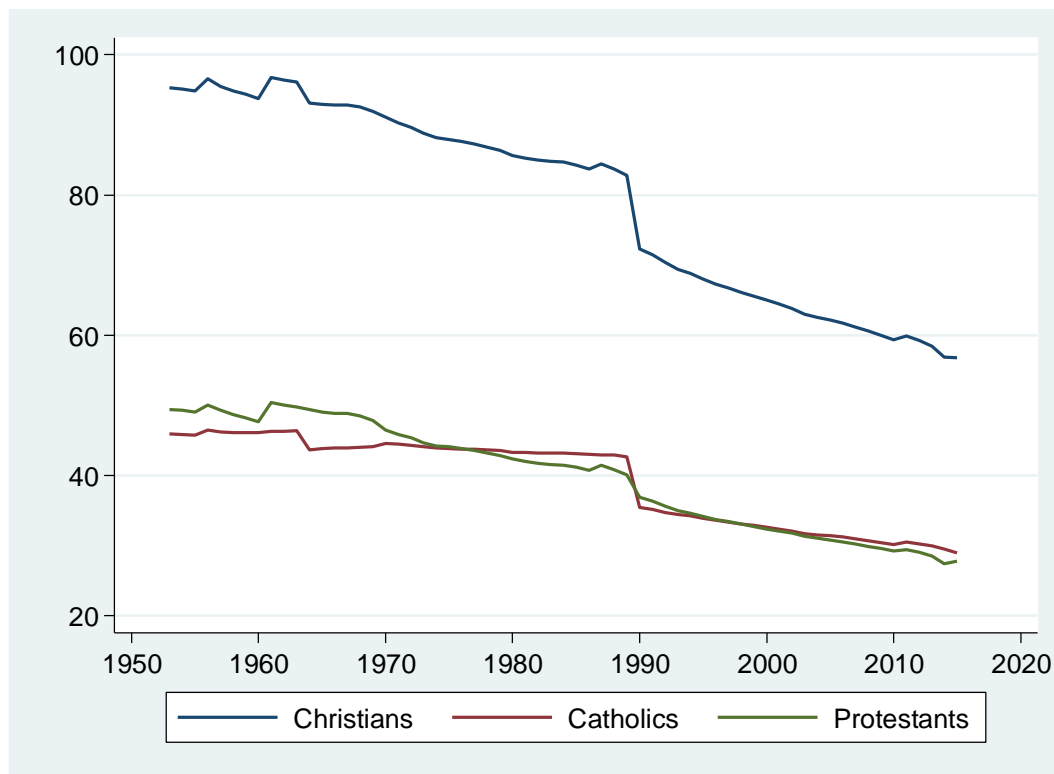
In this paper, we analyze the impact of a number of exogenous shocks on the exit decisions of Catholics and Protestants in Germany over a long period of time (1953 to 2015) using aggregate data published annually by the Federal Statistical Office, the German Bishops' Conference and the Association of Protestant Churches in Germany.

2. Data and Descriptive Evidence

It appears from Figure 1 that membership in the two main Christian denominations has rapidly declined over the last 60 years. Until the early 1970s more than 90 percent of the German population belonged to the Catholic or Protestant churches. Since then that percentage has gradually declined until 1990 when – following the reunification of Germany – the decline accelerated. Today, more than one third of the German population is unaffiliated while about 5% belong to one of the other two monotheistic religions (Muslims and Jews).

Figure 1

Percentage of Christians, Catholics and Protestants in the German Population, 1953-2015



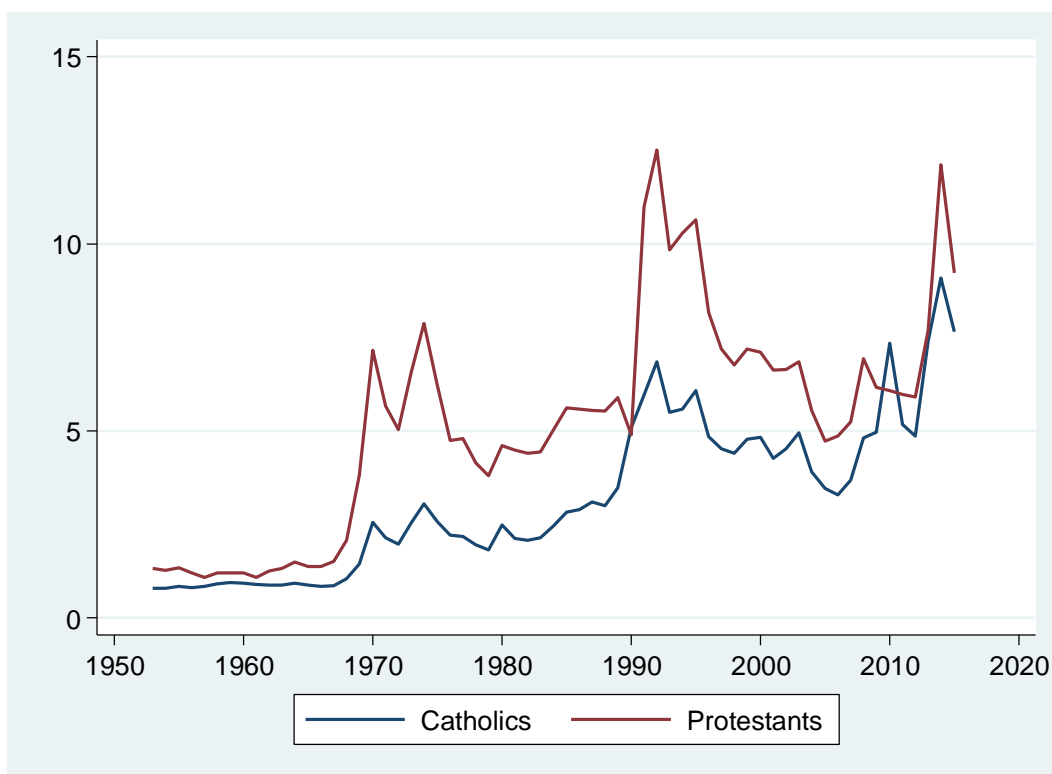
In Germany, taxpayers, whether Catholic or Protestant, pay between 8 and 9 percent of their income tax to the church to which they belong⁴. While the monetary costs of church membership have remained a constant proportion of income over time the non-monetary costs have certainly increased for many people due to a number of sexual abuse scandals that became public in early 2010 and the misuse of church taxes such as renovation cost of the former bishop of Limburg's residence that became public in early 2014. The percentage of people attending religious services has declined over the last decades, suggesting that the benefits of church membership (such as access to the sacraments) are now less attractive than they used to be (Becker and Woessmann 2013, Franck and Iannaccone 2014, Gorski and Altinordu 2008, Iyer 2016).

⁴ Lyytikäinen and Santavirta (2013) find that in Finland church exits are concentrated towards the last days of the year because this is the last chance to avoid paying taxes for the entire next year.

Exiting by officially leaving one of the mainline churches in Germany is a purely administrative move as one simply needs to request to have one's affiliation removed from the civil register. Once done, the individual no longer has to pay church taxes, which are collected by tax offices on behalf of the churches. In 2015, the Catholic and the Protestant church together received more than 11 billion Euros.

Figure 2

Exit Rate of Catholics and Protestants in Germany, 1953-2015



It appears from Figure 2 that the number of exits per 1,000 members and year has increased in both denominations over time (the two exit rates are correlated at $r=+0.88$) and that the fluctuation has increased too, suggesting that single events – such as a sexual abuse or financial scandals – induce more people to give up their membership than events during the 1960s and

1970s that have by then been considered as offending many believers, such as the encyclical “*Humanum Vitae*” published by Pope Paul VI on July 27, 1963 reinforcing the Catholic church’s strict opposition against use of contraceptives.

Phillips-Perron (1988) and Augmented Dickey-Fuller (1979) tests reveal that the null hypothesis of a unit root cannot be rejected in favor of the stationary alternative in either of the two cases (with 63 annual observations each) as the test statistic is always less negative than the critical value (at $p < .10$) of -3.173: In the case of Catholics the respective values are -3.041 (Phillips-Perron) and -3.072 (Augmented Dickey-Fuller) and in the case of Protestants the values are -2.877 (PP) and -2.848 (ADF). Estimations with fewer or more lags yield the same conclusion.

3. Econometric Findings and Discussion

Table 1 displays the findings of a series of regression models based on the Arellano-Bond estimator. The dependent variable is the annual exit rate (exits per 1,000 members; see e.g. Figure 2), the explanatory variables are a number of events that may have had an impact on the exit decisions of (former) members in both churches (although their impact may differ between the two denominations)⁵. It appears from the findings presented in Table 2 that most of the events we consider important in inducing individuals to either retain or give up their membership have the expected impact on annual exit rates. Also, the impact of these events varies between the two denominations.

The first event, publication of the encyclical “*Humanum Vitae*” which strictly opposed the use of contraceptives, had a statistically significant and positive effect only on the number of exits

⁵ We have carefully checked for potentially confounding effects (i.e. other events that might have contributed to the observed changes in church exits) and can rule these out entirely. Thus, we are confident that our estimated coefficients are not biased in either direction.

from the Protestant church in 1969 and 1970, although Protestants do not have to follow the prescriptions made by the Pope as head of the Catholic church (column 2 in Table 1). Catholics, in turn, did not respond in a similar way, because in the early 1970s they were more conservative than Protestants (with the former predominantly voting for the Christian Democratic Union and the latter for the Social Democratic Party in the federal election of 1972) and, therefore, mostly adhered to the doctrine of their church.

The second event, the fall of the “iron curtain” and the subsequent reunification of Germany in 1989 and 1990 induced a massive increase in church exits in 1991 and 1992 mainly in East Germany, where members of either of the two denominations did not have to pay any church taxes before reunification. Thus, for them the costs of membership increased considerably as they now had to pay about 3 percent of their gross monthly income as church taxes (in West Germany that event had a significantly smaller impact on exit rates). Moreover, it also appears that this “tax evasion effect” is nearly three times larger for the Protestant than for the Catholic church (column 4 in Table 1).

The scandals that the media reported on in early 2010 and early 2014, especially the abuse of altar boys by catholic priests in the 1980s and 1990s and the misallocation of public funds by the bishop of Limburg in the early 2000s, both occurred in the Catholic church, but had a virtually identical effect on the exit rates in both denominations (columns 1, 2 and 4 in Table 1)⁶.

The election of Pope Benedikt XVI – the first German in this position after 482 years – led to a statistically significant decline in the exit rate of German Catholics in the first two years after the election. Not surprisingly, the respective coefficient is statistically insignificant for the Protestant church (columns 1, 2 and 4 in Table 1).

⁶ Bottan and Perez-Truglia (2015) and Hungerman (2013) report similar responses of church members to sexual abuse scandals in the United States.

Table 1

The Impact of Exogenous and Endogenous Shocks on Exit Rates from the Catholic and Protestant Churches in Germany, 1953-2015 (Arellano-Bond Estimation)

	Catholics	Protestants	Both Denomina- tions	Both Denomina- tions
Lag (Exit Rate)	0.552 ^{***} (0.0759)	0.699 ^{***} (0.0609)	0.681 ^{***} (0.0470)	0.673 ^{***} (0.0450)
Humanum Vitae	0.532 (0.389)	2.494 ^{**} (0.661)	1.538 ^{**} (0.405)	0.585 (0.540)
Reunification	1.656 ^{***} (0.406)	4.556 ^{***} (0.666)	3.014 ^{***} (0.411)	1.452 ^{***} (0.542)
Scandal	2.245 ^{***} (0.402)	1.959 ^{**} (0.693)	2.062 ^{**} (0.421)	2.201 ^{***} (0.559)
Benedikt XVI	-0.949 ^{**} (0.410)	-0.884 (0.693)	-0.845 ^{**} (0.424)	-0.767 (0.553)
Time Trend	0.0421 ^{***} (0.00845)	0.0321 ^{***} (0.0104)	0.0320 ^{***} (0.00677)	0.0303 ^{***} (0.00721)
Prot_Hum_Vitae	---	---	---	1.898 ^{**} (0.763)
Prot_Reunification	---	---	---	3.153 ^{***} (0.758)
Prot_Scandal	---	---	---	-0.289 (0.797)
Prot_Benedikt	---	---	---	-0.190 (0.779)
Prot_Trend	---	---	---	0.00512 (0.00819)
Constant	0.0397 (0.146)	0.368 (0.260)	0.216 (0.156)	0.221 (0.147)
<i>Wald Chi</i>	865.80 ^{***}	569.39 ^{***}	1131.55 ^{***}	1298.54 ^{***}
<i>N</i>	61	61	122	122

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Finally, controlling for these different exogenous shocks it appears that both churches suffer from declining membership as indicated by the statistically significant and positive coefficient of the linear time trend that does not differ significantly between the two denominations (columns 1, 2 and 4 of Table 1).

Fixed effects estimations with standard errors clustered at denomination yield virtually identical results. Moreover, estimating the above model with the exit rate lagged two periods yields a statistically insignificant coefficient for that particular variable while leaving the coefficients of all other variables unaffected.

4. Conclusion and Implications

In Germany, exits from the Catholic and Protestant churches have fluctuated considerably over the last 60 years. Much of the observable variation in the annual number of exits can be explained by various exogenous shocks, such as German reunification and media reports on sexual abuse and financial scandals. However, a number of questions still need to be answered: Is the declining number of parishes and priests (i.e. the observable deterioration in “religious infrastructure”) cause or consequence of the declining membership⁷? Is the decrease in membership the same across the different regions or is it more pronounced in regions where e.g. abuse and financial scandals have happened? These and related questions need to be addressed in more detail in future research.

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