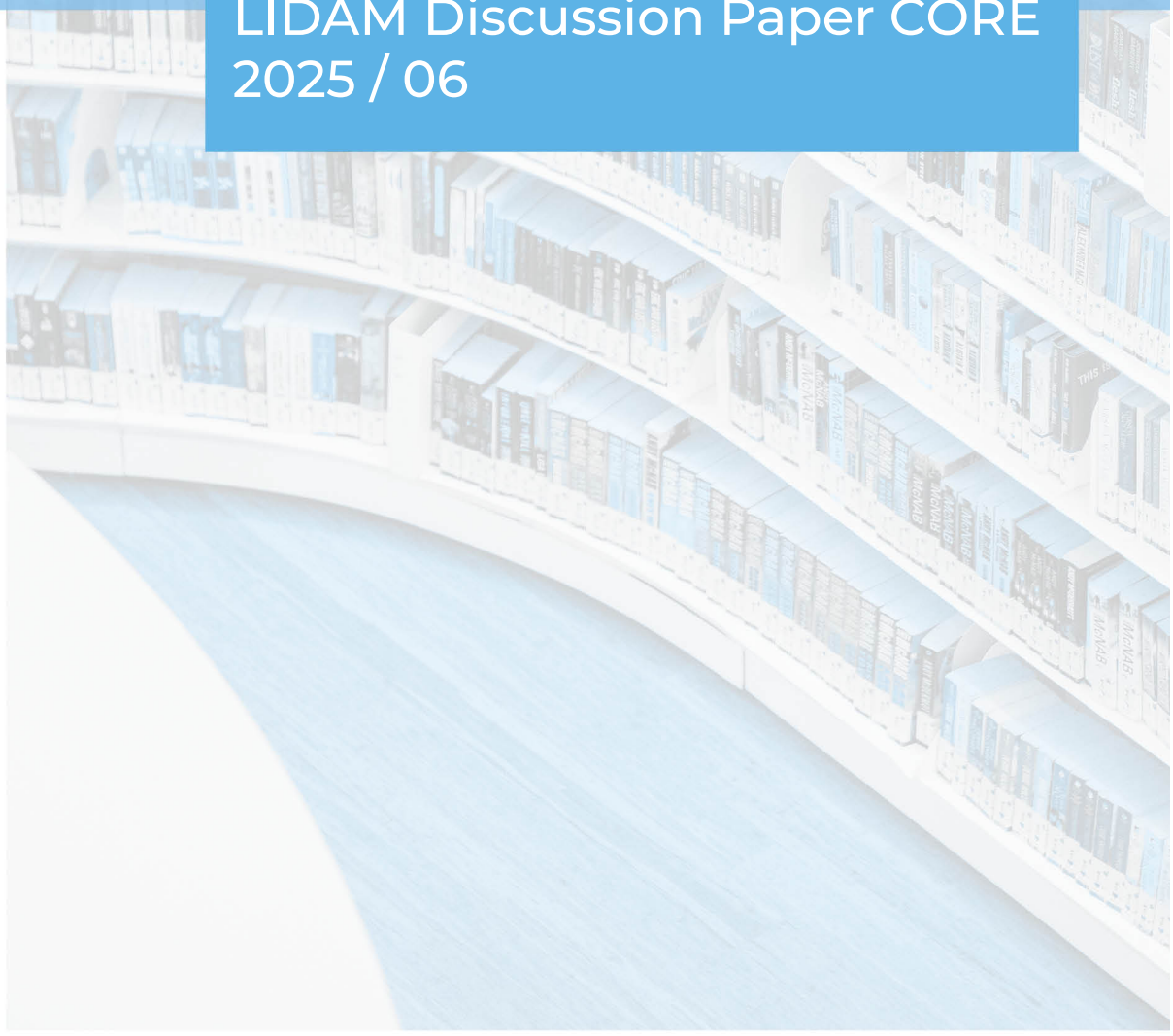
RELIGION AND ECONOMIC DEVELOPMENT: PAST, PRESENT, AND FUTURE

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Religion and Economic Development: Past, Present, and Future*

Sascha O. Becker, Amma Panin, Steven Pfaff, and Jared Rubin

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Abstract

This chapter examines the role of religion in economic development, both historically and today. Religion's influence varies globally, with high religiosity in countries like Pakistan and low rates in China. Despite declines in some Western countries, religion remains influential worldwide, with projected growth in Muslim populations due to higher fertility rates. Religion continues to shape societal norms and institutions, such as education and politics, even after its direct influence fades. The chapter explores how religious institutions and norms have impacted economic outcomes, focusing on both persistence and decline. It also examines cultural transmission, institutional entrenchment, networks, and religious competition as mechanisms sustaining religion's influence. We explore the relationship between religion and secularization, showing that economic development does not always reduce religiosity. Lastly, the chapter highlights gaps in the literature and suggests future research areas on the evolving role of religion in economic development.

Keywords: Religion; Economic Development; Religiosity; Cultural Transmission; Secularization; Historical Persistence; Religious Competition; Networks; Social Norms
JEL codes: D85, I25, J10, N30, O33, O43, P48, Z10, Z12

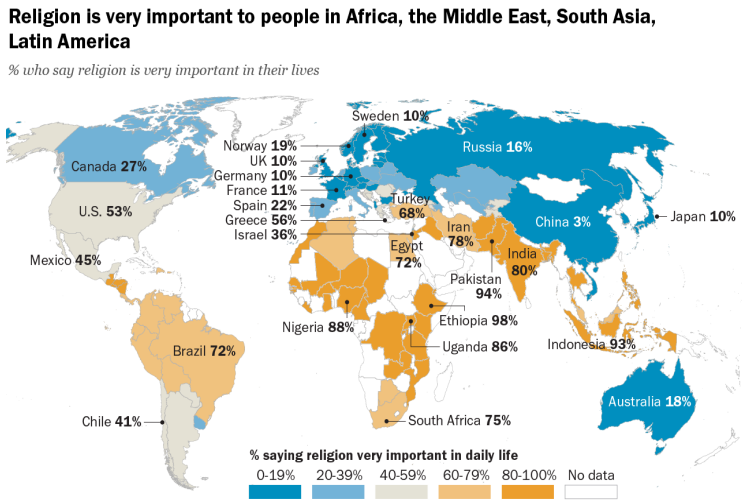
* We thank Jacopo Ballabio, Paola Giuliano, Joel Mokyr, Talha Naeem and Nathan Nunn for insightful comments. We received useful feedback from participants at the Kabiller Conference on the Economics of Culture at Northwestern University, at the Eighth Asian Historical Economics Conference at the University of Hong Kong, at the WEast 2024 Dublin Workshop and at the Third Bolzano Workshop on Historical Economics. Chun Chee Kok provided capable research assistance. We are grateful to all of them.

I. Introduction

The share of people who say that religion plays an important part in their lives displays huge variation around the globe (see Figure 1). Overall, the share of the population in Western countries that consider religion an important part of their lives is well below 50%, but there is much variation, ranging from 10% in the UK to 53% in the USA. There is even more variation within Asia, where the number ranges from 3% in China to 94% in Pakistan. Of course, such numbers must be taken with a grain of salt as respondents in China might be hesitant to openly state their religious leanings, and respondents in Pakistan might overshoot in the other direction. Nonetheless it is incontrovertible that religion plays an important part of many people's lives in the 2020s.

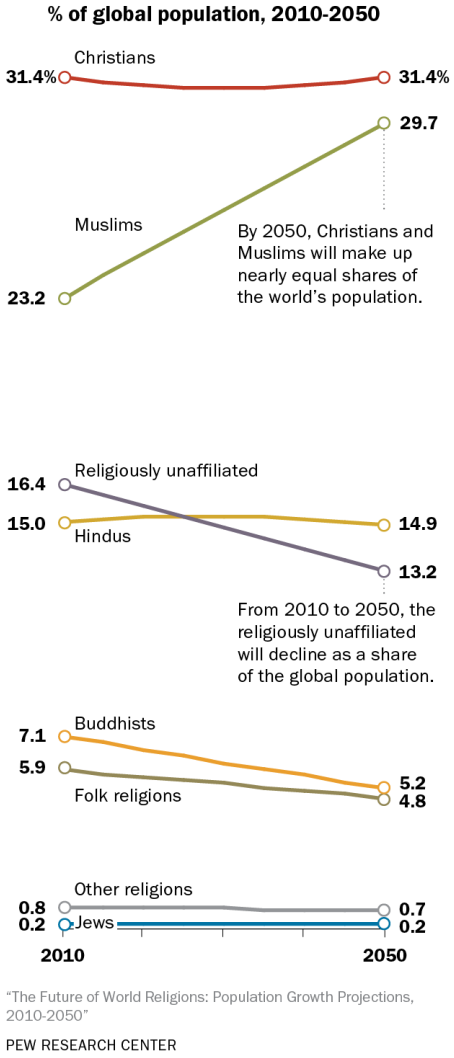
Even in cases where religion does not seem to have an important *direct* influence on individual decision making, societal norms, or family traditions, socio-economic outcomes of all types may still be shaped by the religious norms of the past. Similarly, churches and other religious organizations, whose role was often defined decades or centuries ago, still exert influence today. For instance, despite being one of the least subjectively religious societies in the world, in the United Kingdom church-run schools remain central to the educational infrastructure, and the 21 most senior bishops of the Church of England sit in the House of Lords. Religion has shaped culture in a deep and enduring way and its impact is evident even when religiosity, meaning strong religious beliefs or sentiments, is low. This persistent influence of religion's vitality is the result of multiple factors, including institutions, regulations, and networks, as our chapter will show.

Figure 1: The importance of religion in people's lives, 2022



Note: Figure reproduced with kind permission of the Pew Research Centre (2022).

Figure 2: Projected religious market shares



Note: Figure reproduced with kind permission of the Pew Research Centre (2022).

While religion in the West may be in decline, at a worldwide level it is not. Figure 2 shows the world market share of world religions in 2010 and the projected market shares in 2050, using the Pew Research Center's (2022) demographic projections.[1] According to these projections, Christianity will hold its market share steady at just under a third of world population. This is

[1] The Pew Research Center (2022) notes: "Population projections are estimates built on current population data and assumptions about demographic trends, such as declining birth rates and rising life expectancies in particular countries. […] Another limitation of this study is that current patterns of religious switching are available for only 70 countries, which constitute 43% of the world's population. The most populous omissions are China and India."

because the decline in many Western countries is counter-balanced by increases in the number of Christians in countries with higher fertility rates. Islam is bound to gain market share, also largely as a result of higher fertility rates, nearly reaching the Christian market share by 2050.

While these predictions are based on population growth projections, it is by no means a given that the importance of religion in people's lives ("religiosity") is bound to fall. Religiosity might well decline in some countries, as we will discuss later. Yet, there have been religious revivals around the world in the past, leading to a reversal of "secular trends". Even systematic attempts by Communist regimes to permanently destroy religion have so far failed. Roman Catholicism still strives in Poland. Religion has returned in many different stripes in post-Mao China (Johnson 2017). Buddhism and Taoism have seen a resurgence, as the Chinese Communist Party tries to foster "traditional values and practices" as a source of stability and morality, although pinning down an exact number is difficult (Pew Research Center 2023).

Clearly, religion is thriving worldwide and is playing an increasingly important role in the economies and politics of the developing world, as witnessed in countries such as Brazil, where Pentecostal churches have led to increased competition with the incumbent Catholic Church, and renewed influence of religion in private and public life.

These data yield an important question: what role, if any, has religion played in economic development, both in the present and historically? We are not the first to ask such a question. The link between religion and economic development has fascinated social scientists for centuries. Adam Smith's *Wealth of Nations* (1776) and his *Theory of Moral Sentiments* (1759) cover the role of religion in human societies as well as the internal organization of the church. Probably the most influential social scientists discussing the role of religion in economic development were Max Weber (1904/05) and Émile Durkheim (1897, 1912). Both set an example for social scientists by using statistical analysis to study the link between religious denomination and economic success (Weber) and religious denomination and suicide (Durkheim) as an extreme way to deal with adversity in life.

Before proceeding it is necessary to define religion. The form and content of religion vary enormously across time and place. For our purposes, a satisfactory definition must be general and abstract and not so elastic as to include every cultural manifestation. Drawing on well-established concepts in the economics of religion, we define it as a shared set of beliefs, activities, and institutions that are premised on a relationship with supernatural forces (Iannaccone 1998: 1466).

This means that religion is not simply a matter of subjective faith, but rather a social enterprise whose purpose is to supply religion to some set of people and support and regulate their exchanges with supernatural forces (Stark and Finke 2000: 93; 103). Consequently, our review touches on religious beliefs (e.g., doctrines, religiosity), activities (e.g., conversions, movements and revivals), and religious institutions (e.g., laws and organizations), particularly as they concern long-run patterns of development.

We categorize and summarize the rapidly growing literature on religion and economic development in this chapter, which is structured as follows. In **Section II**, we explore how religious institutions, norms, and events in the past have exerted long-lasting influences on economic outcomes. The focus here is twofold. First, we delve into studies that demonstrate the persistence of religion as a key factor in development. These persistence studies highlight how historical religious phenomena—whether in the form of religious institutions, norms, or movements—have endured, shaping the economic trajectories of societies. We also survey literature on the persistence of religious conflict, persecution, and intolerance. Second, we turn to cases where new religions have spread. Understanding the conditions under which new religious norms and institutions arise provides insight into the dynamics of cultural and economic change. This section surveys how the interplay between religion and economic development unfolds over time, with a focus on the legacies of religion that either continue to influence development or fade away.

Having established that religion can deeply influence economic development through its enduring effects, in **Section III** we turn to the question of how these religious influences persist or change over time. This section explores the central mechanisms identified by scholars as responsible for the inception and persistence of religion. We begin by discussing cultural transmission, the process by which religious beliefs and practices are passed down through generations, shaping both individual and societal behavior. From here, we move to examine the role of institutions and political economy, emphasizing how religious organizations and their relationship with political structures can either entrench or alter religious influence. Next, we investigate the importance of networks, highlighting how social connections and relationships foster the spread and maintenance of religious phenomena. Finally, we turn to religious competition as a source of change, exploring how interactions between different religious groups or between religious and secular forces can disrupt religious stability and create pathways for change.

Building on our exploration of the historical roots and mechanisms of religious persistence, in **Section IV** we shift our focus to the present-day interplay between religion and economic development. Recent scholarship has shed light on the multifaceted ways in which religion continues to affect economic development in the modern era. One of the most significant processes we address is secularization, examining how the discourse regarding secularization has evolved and the extent to which it alters the religious-economic nexus. We then explore how economic development impacts religious participation, highlighting that the relationship is far from straightforward. Contrary to the simplistic view that economic progress invariably leads to increased secularization, we find that economic development often results in shifts in religious affiliations and variations in religious intensity rather than a complete abandonment of religious practice. Additionally, we investigate how changes in religious institutions and beliefs influence contemporary development outcomes. The dynamics of religious supply and demand, as well as the role of religious institutions in shaping economic behavior, are crucial to understanding the ongoing relevance of religion in economic contexts.

Section V concludes our chapter with two key questions: First, does religion have a future? We will argue that religion is unlikely to disappear any time soon. Second, which areas of religion and development research remain underexplored? We will point to gaps in the literature that we think would be particularly worthy of study in the future.

Our survey is by no means the first to touch on the link between religion and economic development, yet it goes well beyond existing work. It is limited by the body of published research that is, unfortunately, largely focused on the Abrahamic religions of Judaism, Islam and Christianity. Nevertheless, the general arguments we discuss are not necessarily limited to those religions and we have included work on other religions where possible. Naturally, given its recency, our survey covers research over the last decade that was not captured by the economics of religion surveys by Iannaccone (1998) and Iyer (2016).[2] Our focus is different from Bentzen (2021), who focuses on the causes and consequences of *religiosity*, but does not review research examining the causes and consequences of types of religious affiliation. Kuran's (2018) JEL survey focuses on Islam only. Since the Protestant Reformation was a key event in economic history, relevant work until its 500th anniversary in 2017 has been covered by Becker, Pfaff and

[2] The topic of religion and economic development has also been covered in two very short pieces by McCleary (2008), in the Hoover Policy Review, and Iyer (2018) in the Palgrave Dictionary of Economics.

Rubin (2016), and we focus on new research in this area. While Becker, Rubin, and Woessmann (2021) have surveyed research on economics of religion in history, they have not covered any research on contemporary economic development. Becker, Rubin, and Woessmann (2024) provide a conceptual framework, using a macroeconomic production function, to highlight how and why religion matters for economic growth. Here we focus on the related but distinct process of economic development, encompassing a wider range of behaviors and outcomes. None of the existing surveys rivals this chapter in its temporal coverage. Different from any of the existing works, we investigate the *deep roots* of religion for economic development, as well as the role of religion on economic development *today* and we assess the likely *future* role of religion for economic development. Our chapter thus gives a comprehensive overview of the role of religion in economic development: past, present, and future.

II. The Past: Deep Roots of Religion and Economic Development

This section covers three broad themes. First, many studies have shown religion to be a deep-rooted factor in economic development. We discuss how religious organizations like the church, or major religious events like the Protestant Reformation have had an enduring influence on societal institutions and norms and thereby long-term persistent effects on economic development. Second, we highlight research focused on the persistence of religious conflict, persecution, and intolerance which describes the *interaction* between different religious groups. Third, we discuss the spread of new religions.

A. Long-term effects of religion

Research on historical persistence has exploded in recent decades, documenting correlations and causal effects between past and present (Nunn 2014b; Michalopoulos and Papaioannou, 2017a,b,c; Voth 2021; Cirone and Pepinsky 2022; Acharya, Blackwell, and Sen 2024; Lowes 2024).[3] Among

[3] Since historical persistence regressions exploit spatial variation in historic variables to study their effects on contemporary outcomes, they come with inferential challenges. Observations that are close to each other geographically tend to be correlated—violating the assumption of independent and identically distributed (i.i.d.) errors. Valid inference in such settings requires the use of heteroskedasticity and autocorrelation consistent (HAC) corrections or clustered standard errors at broader geographic levels (like states). In the past, researchers employed Conley (1999) standard errors to correct for potential spatial correlations in unobserved factors. However, even these correction methods fail when spatial dependence is too strong ("spatial unit roots"; see Fingleton 1999). In such cases, these methods can produce spuriously significant regression coefficients even for completely independent variables. Müller and Watson (2024) provide diagnostic tests for non-stationarity or the presence of spatial unit roots and suggest what to do in case non-stationarity is detected or when the presence of spatial unit roots cannot be rejected. Their

the most persistent organizational, institutional, and cultural phenomena in human history is religion. For instance, the Catholic Church traces its origins to the 1st century CE and currently has 1.4 billion members worldwide. That feat is attributable, at least in part, to the paradoxical combination of rigidity and flexibility that has allowed the Church to survive not only the Reformation, but Roman imperial persecution, a half dozen sackings of Rome, the split between Western and Eastern Churches, and the Great Schism of the 14th century, among other challenges. As Seabright (2024, ch. 9) argues, the ability of the Catholic Church to retain its central identity and organizational form is a feat made possible, in part, by its flat hierarchy (pope, bishops, priests, parishes) that allows for substantial on-the-ground variation and plenty of room for adaptation so long as the authority of the pope and the institution of the priesthood are upheld. More generally, Finke (2004) hypothesizes that religious groups "sustain organizational vitality by preserving core religious teachings as they introduce innovations for serving members and adapting to their changing environment."[4] Nevertheless, persistence is never assured, even for once vital religious groups. For instance, several problems made it hard for the Catholic Church to confront the upstart Protestant movement, including the inability to control organizational deviance and product quality on the ground, too much autonomy in the hands of bishops independent of Rome, and too little papal legitimacy (Becker, Pfaff, and Rubin 2016).

Nevertheless, religious organizations like the Catholic Church have had a profound impact on society and economic development (see below). Economists have compared religious organizations to clubs (Iannaccone 1992) or platforms (Seabright 2024), offering fee-paying adherents benefits that tie them to the institution. Seabright's (2024) platform view of religious organizations highlights the fact that instead of being passive consumers of the good that the "club" creates, members of platforms are active contributors to that good, and thereby to the welfare of other members. This view therefore stresses the many interpersonal links members have with each other, which makes leaving the platform costly and gives substantial power to religious organizations over its members and the society at large.

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proposed solution involves "spatial differencing", and they illustrate their method using data from Chetty et al. (2014), a paper that does not feature historical persistence regression, but still features spatial unit roots, showing that these issues are not specific to papers in one particular literature. Yet, the results in Chetty et al. (2014) still hold up when appropriate standard errors are applied after spatial differencing. Becker, Boll, and Voth (2025) provide a practitioner's guide and Stata code.

[4] This idea is well-known in business economics, where the sustained success over multiple generations of chief executives and product cycles can be traced to an allegiance to a "core ideology" (Collins and Porras 1994).

The Catholic Church benefited from a quasi-monopoly for more than a millennium before the first successful challenge to its monopoly in the form of the Protestant Reformation triggered by Martin Luther and his followers.[5] We will discuss the emergence of such new religions and denominations later in this section. In this subsection, we will focus on persistence studies related to religion. Before proceeding, it is worth noting that most of the studies surveyed in this section relate to persistence in various Christian societies (both Catholic and Protestant). This is because most of the literature is focused on persistence in Christianity. There are some studies on persistence in Islam (e.g., Cinnirella, Naghavi, and Prarolo 2023), and papers on persistence in Judaism and Confucianism are discussed below. We suspect that the relative paucity of persistence studies on non-Christian religions is in large part attributable to data availability; persistence studies require historical data that is not readily available for many parts of the world, especially outside of "the West."

Persistence studies on religion have revealed that religious organizations can have unintended, unforeseeable consequences for economic development. This is perhaps best exemplified by studies of the various downstream effects of monastic orders and religious communities which instilled norms into their members that also diffused into the surrounding population. In a sense, this literature began with Max Weber (1904/05), in his famous treatise *The Protestant Ethic and the Spirit of Capitalism*, in which he argued that a "Protestant ethic" was instrumental for economic development. He emphasized that values ascribed to Protestants were also held in high esteem by the Cistercians, a Catholic order which spread across Europe beginning in the eleventh century. Following Max Weber, Andersen et al. (2017) argue that the Cistercians encouraged economic development by instigating the kind of cultural change that Weber attributed to Protestantism. Andersen et al. (2017) contend that, in an era where Malthusian forces were at play, work ethic and thrift translated into economic success and thus reproductive success. Transmission of cultural values from parents to offspring might thereby instigate a cumulative process of development through cultural change. Since the Cistercians had a particular preference for locating in secluded and sparsely populated areas, such as royal forests owned by the Crown, it is unlikely that later

[5] The Catholic Church had been challenged multiple times, but many movements failed. Estévez et al. (2024) use inquisitorial trial records to show how inquisitor Alberto de Castellario managed to root out religious dissent by using coercive pressure that raised the rate of denunciation but also compelled denouncers to implicate individuals who were socially closer to them.

successful economic development was the result of better pre-existing conditions. Yet, areas with Cistercian monasteries have had faster population growth.

Another such organization was the Brethren of the Common Life (BCL), an important religious movement of the late Middle Ages founded by Geert Groote in Deventer in the late fourteenth century. Their emphasis on education, personal piety, and social justice had a profound influence on the religious and intellectual culture of Europe. Akçomak, Webbink and ter Weel (2016) focus on the BCL's emphasis on human capital accumulation. Exploiting the spread of the BCL movement from Deventer as a source of exogenous variation, they show that the BCL contributed to higher rates of literacy, greater book production, and city growth in the Netherlands.

Another strand of the literature looks at the role of the Catholic Church more broadly in shaping norms and values in Western Europe. The medieval Catholic Church's marriage regulations prohibited close-kin marriages and effectively dissolved Europe's clan-based societies, fostering profound psychological, institutional, and economic transformations across the continent. Schulz et al. (2019) investigate how the Church's marriage regulations and loosening kin networks influenced human psychology, contributed to decreased obedience, increased individualism, and a shift towards an impersonal prosociality. These psychological changes are pivotal in differentiating Western, Educated, Industrialized, Rich, and Democratic ("WEIRD", Henrich et al. 2010; Henrich 2020) from non-WEIRD populations and help to explain variations within Europe itself—regions Christianized later retain stronger kin-based institutions and less impersonal-individualist psychology. The authors combine data on 24 psychological outcomes with historical measures of both Church exposure and kinship and find support for these ideas in a comprehensive array of analyses across countries, among European regions, and among individuals from different cultural backgrounds. Schulz (2022) shows that the Church-family association persisted for a long time: longer Church exposure still (negatively) predicts cousin marriage in the 20th century, facilitating the rise of political participation and the emergence of national democracies.

Perhaps more importantly, exchange became more personal and institutions fostering impersonal exchange arose in parts of Europe that had deeper Catholic roots (Greif 2006a). Arruñada and Lucas López-Manuel (2024) attribute a particular role to the mendicant orders (mainly Dominicans and Franciscans), created in the 13th century, who helped the Catholic Church lay "the cognitive, interpersonal, and institutional groundwork for impersonal cooperation." The rise of impersonal exchange—exchange with previously unknown persons—was an unintended

consequence of the Church's cousin marriage ban, and it is a hallmark of the modern economy. In fact, widespread kinship networks have been shown to retard economic growth outside of the European context. Chen, Ma, and Sinclair (2022) show that banking and finance was delayed in China due to extensive kinship networks associated with the Confucian clan. They reason that kinship networks provided social insurance and initial capital, thereby dampening demand for formal financial institutions.

In medieval Europe, religious institutions played a very different role in long-run financial development. As part of a changing political economy equilibrium in the 15th century, a new institution arose, supported by the Church, that lent at low interest rates to the poor. Known as Monti di Pietà, these early banks quickly took on features familiar to modern banking such as accepting and remunerating deposits and charging interest. Pascali (2016) finds that those places that had Monti di Pietà in the past still have higher bank density and access to credit in the present.

While the Brothers of the Common Life, and various Catholic orders (Cistercians, Dominicans, Franciscans, etc.) are important examples of religious organizations that had a long-run impact on different economic outcomes, the Protestant Reformation is widely seen as a turning point in world history that had lasting effects on overall economic development. Becker, Pfaff, and Rubin (2016) have given a comprehensive overview of social science research on causes and consequences of the Protestant Reformation on the eve of the 500th anniversary of Luther's 1517 legendary nailing of his 95 Theses on the door of the Castle Church in Wittenberg. In what follows, we therefore focus on articles published in this vast literature published since 2016.

The immediate effects of the Protestant Reformation came in the form of a reallocation of resources. Heldring, Robinson, and Vollmer (2021) show that the dissolution of English monasteries in the wake of the English Reformation created a market for formerly monastic lands, which could be more effectively commercialized relative to nonmonastic lands. In the long run, the increased efficiency fostered a rise of the gentry and more innovation and higher yield in agriculture, together with a greater share of the population working outside of agriculture, and ultimately higher levels of industrialization.

Another "shadow" of the Reformation has manifested in the form of higher literacy rates in Protestant relative to Catholic areas, as shown by Becker and Woessmann (2009). Exploiting the concentric dispersion of the Reformation around Luther's town of Wittenberg, they show that areas that adopted Protestantism had higher literacy rates in the 19th century, and as a result were

economically more advanced.[6] In related work, Becker and Woessmann (2008) show that Protestantism also fostered more gender equality in education in the 19th and 20th century, in line with Martin Luther's quest that every (Protestant) town ought to have a girls' school also. Cantoni (2015) focuses on cities in the German lands and finds no difference in city growth between Protestant and Catholic cities. His results suggest that the differences highlighted by Becker and Woessmann (2009) are mainly driven by rural areas, where the vast majority of citizens lived until the late 19th century.

Many cities in the newly Protestant parts of Germany introduced church ordinances which had stipulations to expand welfare provision and public education. Dittmar and Meisenzahl (2020) show that cities which adopted church ordinances attracted and produced more upper-tail human capital over the period in 1520-1819 (as measured by the number of individuals documented in the Deutsche Biographie, a collection of biographies of famous Germans). These cities also witnessed faster population growth from 1500-1800. They argue that the adoption of public goods institutions, rather than the adoption of Protestantism per se, accounts for the different population development.

Other studies have used the official religion of various territories, as determined by their princes' affiliations around 1624—the "normal year" established by the Peace of Westphalia—as a predictor for current religious affiliation in Germany. By leveraging the historical variation in Protestantism that followed the Peace of Augsburg, Spenkuch (2017) finds that historical Protestantism correlates with longer working hours today, though it does not correspond to higher hourly wages. These findings are interpreted as supporting a value-based explanation, consistent with the Weberian thesis on the Protestant work ethic that emphasizes how new attitudes toward work, thrift, and consumption account for variations in capitalist development.

Others have uncovered various types of "negative" legacies of the Protestant Reformation. On the economic side, Schaff (2025) studies the effect of the Reformation on pre-industrial inequality. He finds that the Reformation led to an increase in inequality in Protestant cities that was driven by the introduction of new particularistic poor relief policies. The Reformation was thus an underappreciated driver of inequality long before the onset of industrialization and modern

[6] Kersting, Wohnsiedler and Wolf (2020) attribute part of this effect to differences between ethnic Polish Catholics and ethnic German Protestants in the Eastern parts of Prussia, as a result of ethnic German nationalism. Yet, differences in school enrolment between Protestants and Catholics were large as early as 1816, before the Industrial Revolution, in all parts of Prussia (Becker and Woessmann 2010).

economic growth. Becker and Woessmann (2018) show that Protestantism raised the annual suicide rate by about 15-20 suicides per 100,000 inhabitants, compared to an average of 13 suicides, in late 19th century Prussia. The Protestant Reformation also contributed to an increase in anti-Semitism. The Catholic usury ban and higher literacy rates gave Jews a specific advantage in the moneylending sector. Following the Protestant Reformation (1517), the Jews lost these advantages in regions that became Protestant. Becker and Pascali (2019) show a change in the geography of anti-Semitism: first, persecutions of Jews and anti-Jewish publications became more common in Protestant areas relative to Catholic areas; second, there was a more pronounced change in cities where Jews had already established themselves as money-lenders. These findings are consistent with the interpretation that, following the Protestant Reformation, Jews living in Protestant regions were exposed to competition with the Christian majority, especially in moneylending, leading to an increase in anti-Semitism.

In spite of the enduing impact of the Reformation, the Catholic Church was able to hold back the Protestant tide in much of Europe and beyond. It engaged in sustained reforms that reasserted the Church's legitimacy and restored papal supremacy. How did the Church re-centralize authority? A growing body of research reveals how the Jesuits (Society of Jesus) played a crucial role in the Catholic revival. It effectively asserted papal prerogatives, improved the quality of theological training and lay education, and extended Catholic culture in much of Europe and the world.

After the convocation of the Council of Trent initiated the Catholic Reform movement, European societies arranged themselves into unified religious camps (Catholic, Lutheran, Calvinist) as territorial rulers endeavored to consolidate "confessional" church-state regimes (Becker, Pfaff, and Rubin 2016). In the confessionalization of Catholicism, new sectarian religious orders—most importantly the Society of Jesus, a non-monastic order of activist priests dedicated to the renewal of the Church and the assertion of papal authority—were critical. From the 1550s on, a continually expanding network of Jesuits colleges sought to remake Catholic civil society and uphold the authority of the Church and the pope.

The Jesuits created an impressive organizational network constituted by the society's priests deployed as teachers at Jesuit colleges and as foreign missionaries (Friedrich 2022). Its hundreds of colleges and thousands of priests comprised a "network of Jesuit informants scattered across all corners of the world" that imposed surveillance and control over vast and diverse territories

(Conradi 2019, p. 380). This network gave the order an extraordinary ability to gather intelligence, coordinate between the Church and secular authorities, and pursue confessional politics (Nelles 2019). The Jesuit network enhanced the reputation of Catholic science and learning by sharing information and collecting specimens that made powerful Jesuits information brokers (Harris 1996; Findlen 2018). At the local level, Jesuit networks were crucial in the suppression of heresies and Jesuits frequently assumed inquisitorial responsibilities (Conradi 2019; Palomo 2019).

Recent work by economic historians has tested how Jesuit missions and their educational infrastructure influenced long-term economic development in Latin America and Asia through human capital attainment and knowledge diffusion (Caicedo 2019b). Waldinger (2017) shows that mendicant orders, committed to poverty, wanted to reduce social inequality by educating natives, leaving a lasting educational impact in rural Mexico. Jesuit missions in South America had significant effects on the education of the Guarani people, with higher educational attainment persisting 250 years later (Caicedo 2019a). In China, Jesuits introduced European sciences after 1580, prompting Confucian literati to study science, though these effects dissipated after the Jesuits were expelled in 1723 (Ma 2021).

However, Jesuit activity may have been at least as important in advancing the political and cultural aims of the Counter-Reformation in Europe. Jesuit schooling created intergenerational networks of loyal Catholic laymen. This not only had economic implications but helps us to understand the institutionalization and persistence of a confessional Catholicism prepared to resist, if not roll back, Protestant encroachment. Although historians have done much to document the establishment and reach of Jesuit networks, the analysis of these networks using explicit social network concepts and methods has yet to be done. A rich archival trove of correspondence could furnish data to map and assess the influence of Jesuit networks.

Beyond Jesuit missions, a vibrant literature has recently emerged on the long-term consequences of missionary activity in general. An important caveat is worth noting. Missionary activities often coincided with colonial conquest, raising questions about the counterfactual scenarios. Few papers tackle the question of the relative role of missionaries and colonial institutions head-on, and we will discuss those later. But we start with the literature pioneered by Woodberry (2004), who was the first in the social sciences to do intensive data work to study the effects of presence of missionaries in Africa, Asia, and South America on long-run economic development. Significant evidence of missions' positive effects on education and health comes

from sub-Saharan Africa. Gallego and Woodberry (2010) find higher literacy rates in regions where Western Protestant missionaries predominated compared to those with Catholic missionaries while also emphasizing the role of competition between different groups of missionaries in increasing services like schools and health centers. Nunn (2014a) reports that both Protestant and Catholic missions had long-term positive impacts on education, with women benefiting more in Protestant areas. In colonial Benin, Wantchekon et al. (2015) demonstrate that missionaries increased the value placed on education, even influencing non-Christians, indicating the presence of human capital externalities. Returning to health outcomes, Doyle et al. (2020) show that Christian African converts, mostly Protestant, adopted healthier sexual behaviors during the colonial period in Uganda. However, Cagé and Rueda (2020) note that while missionaries pioneered modern healthcare in Africa, Christian teachings also influenced sexual beliefs, increasing HIV risk.

Outside the African context, the missionary legacies in India and China have received some attention. In India, Calvi et al. (2021) link Protestant missionaries to higher literacy rates while Calvi and Mantovanelli (2018) report better health outcomes near historical Protestant medical missions. An interesting twist on the typical Protestant-Catholic education gap is discussed in Castelló-Climent et al. (2018). They show a positive link between Catholic missions and secondary education in India, contrasting this with Protestant missions' impact on middle school completion but not on other education levels. However, China differs from India in so far as missionary activities occurred outside colonial contexts in the former. In China, Bai and Kung (2015) show that regions with higher Protestant missionary presence in the 19th century had higher urbanization rates in the early 20th century due to knowledge diffusion through missionary schools and hospitals.

Beyond human capital and health, missionaries influenced a broader range of outcomes, like religious beliefs and political outcomes. Nunn (2010) shows that missionaries altered religious beliefs in Africa, with lasting cultural impacts. Woodberry (2012) highlights Western Protestant missionaries' role in promoting stable democracy worldwide. To the extent that democracy does cause growth, as suggested by Acemoglu et al. (2019), it is relevant to economic development. Okoye and Pongou (2024), looking at Nigeria, show that areas with greater historical missionary activity have not only higher levels of schooling, but also lower fertility and higher household wealth today.

Other researchers have focused on trust and other cultural outcomes. Okoye (2021) shows that missions are associated with lower levels of trust within countries formerly under British indirect rule, but higher trust for all other countries. He explains this result via weakened traditional institutions, norms, and beliefs due to missionary activities under indirect rule. Cagé and Rueda (2016) document an important role for access to media as a mechanism connecting historic missionary activity and present-day trust. They show that proximity to a printing press brought by missionaries was associated with higher newspaper readership, trust, education, and political participation in sub-Saharan Africa.

Returning to the caveat mentioned earlier about a frequent disconnect between the literatures on missionaries and that on colonial rule, it is important to note rare exceptions: Wietzke (2015) and Lankina and Getachew (2012). Wietzke examines Madagascar, where Christian missionaries introduced formal schooling before French colonial rule. Wietzke finds stronger effects of colonial institutions on economic outcomes than missionary school investments. Lankina and Getachew (2012) make a forceful case, using sub-national data in India, that missionaries influenced democracy by promoting education, while education promoted social inclusivity and spurred social reform movements. They study electoral turnout and competitiveness in elections at the district level as proxies for a thriving democracy. Their findings challenge the conventional wisdom of the centrality of the effects of British institutions on democracy, instead highlighting the missionaries' human capital legacies.

While many studies highlight the positive long-term impacts of Christian missionaries, caveats remain. Jedwab et al. (2022) reassess the extent and impact of missionary activity in colonial Africa, particularly Ghana (Jedwab et al. 2021), finding a more moderate influence on modern economic development when considering a comprehensive set of missions. Moreover, some religious norms, like Catholic opposition to family planning, may hinder economic development. Endogeneity concerns due to missionaries' selective locations also need more attention (Jedwab et al. 2022). Additionally, research on different streams within religions, such as various Catholic orders (with Waldinger, 2017 being a notable exception) or different Protestant denominations (with Becker and Won 2024 being an exception), remains limited.

This section has so far almost exclusively focused on persistence in the Christian world. Yet, research has also examined persistence within Judaism. Botticini and Eckstein (2005, 2007) have studied the Jewish emphasis on education and literacy and how is has remained strong for the last

two millennia. They model the choice faced by Jews regarding religious affiliation (remain Jewish or convert) and children's education in a world populated by Jewish and non-Jewish farmers. Education is costly not only for the individual and his family, but to the Jewish community that must raise funds to hire teachers and construct synagogues. Those farmers who did not see a return on investment in education of their children, or were marginally affiliated with Judaism, converted to Hellenist paganism or Christianity with lower entry costs (no circumcision, no reading of the Torah, no required observance of the Sabbath). Those who derived utility from Judaism, and from educating themselves and their sons, abandoned farming and moved to cities to get a return on their educational investment. Over time, Judaism evolved from an illiterate agrarian religion to a literate urban one. Jewish farmers who invested in education gained a comparative advantage and were incentivized to pursue skilled occupations, particularly during the period of increased urbanization in the Abbasid Empire in the Near East (8th and 9th centuries). Similarly, they transitioned into skilled occupations in Spain, France, England, and Germany. While both Jewish and non-Jewish merchants valued educating their children, Jewish merchants placed a greater emphasis on education. This was because their religion, which emphasized the importance of reading the Torah, provided direct utility and benefits to their families through literacy (Botticini and Eckstein 2005).

B. Persistence of Religious Conflict, Persecution, and Intolerance

Anti-Semitism is one of the darkest phenomena haunting societies, past and present. It has been extremely persistent. The Encyclopedia Britannica defines anti-Semitism as "hostility toward or discrimination against Jews as a religious or racial group." Although the term anti-Semitism was coined in the 19th century, anti-Jewish sentiments and massacres date back to classical times. Voigtländer and Voth (2012) document the persistence of anti-Semitism in Germany over six centuries. German towns that witnessed pogroms in the years 1348-49, during the time of the Black Death, were more likely to witness violence against Jews in the 1920s, have higher vote shares for the Nazi Party, more deportations after 1933, more attacks on synagogues, and more letters to *Der Stürmer*, a virulently anti-Semitic weekly German tabloid-format newspaper that was a significant part of Nazi propaganda. Voigtländer and Voth interpret their findings as evidence of deeply rooted cultural traits. The finding is nuanced, as persistence is not ubiquitous. For instance, persistence is lower in cities with high levels of trade or immigration. In the same German context, D'Acunto et

al. (2019) find that present-day financial development is lower in German counties where historical anti-Semitism was higher compared to otherwise similar counties. This shows that not only is anti-Semitism persistent per se, but even after the Holocaust, which eliminated most of Jewish life in Germany, past anti-Semitism still casts its shadow in economic development today.

Outbursts of anti-Semitism have left a legacy in other contexts. Acemoglu et al. (2011) document a statistical association between the severity of the persecution, displacement, and mass murder of Jews by the Nazis during World War II, and long-run economic and political outcomes within Russia. The atrocities committed against Jews changed the social fabric across different regions of Russia and led to lower growth of cities and oblasts. A key factor seems to be a negative effect of atrocities on the size of the middle class that would otherwise have supported a post-Communist civic society. Grosfeld et al. (2013) go back further in time to the Russian Empire, where Jews were constrained to live in the so-called Pale of Settlement.[7] Current-day residents of the former Pale of Settlement have lower support for the market compared to those outside the Pale, a finding that can be explained by a persistent anti-market culture triggered by the virulent anti-Semitism in the Pale. Yet, trust between non-Jews is higher in the Pale, perhaps a result of increased bonding of the majority group of non-Jews.

The work on anti-Semitism testifies to the legacies of inter-religious conflict that often persists over centuries. Apart from cultural explanations, as in Voigtländer and Voth (2012), business and labor rivalries have been highlighted as a key source of conflict between different religious groups. Put differently, the quality of inter-religious or inter-ethnic relations depends, to some extent, on the division of labor between different religious or ethnic groups (Bonacich 1972, 1973; Horowitz 1985, p. 113). It might also shield societies from internal ethnic tensions. Jha (2013, 2018) re-popularized this insight in economics and argued that an ethnic/religious division of labor is sufficient to reduce ethnic/religious tensions when the specific advantage of a certain ethnicity/religious group cannot be replicated or expropriated by the others. On the empirical side, Jha (2013) shows that, in the Indian context, Muslims had trading connections in the Near and Middle East while Hindus did not. Those Muslim-specific advantages in Indian Ocean shipping fostered interethnic complementarities that were strongest in medieval trading ports, where

[7] The Pale of Settlement included modern-day Belarus, Lithuania, and Moldova, much of Ukraine, parts of eastern Latvia, eastern Poland, and some parts of western Russia.

Muslims would specialize in trade-related occupations, reducing inter-religious tensions via occupational sorting, which has persisted to this day.

C. Spread of New Religions

In this section, we focus on religious *change* in various forms. In general, whether religions spread or disappear is a function of three main factors: demography, proselytism, and persecution. Among the Abrahamic religions (Judaism, Christianity, Islam), on which most of the research on the economics of religion is centered, Judaism in most settings does not proselytize, does not generally accept voluntary conversion, and has been the most persecuted of all. Both Christianity and Islam proselytize and accept others who voluntarily convert, and both have persecuted non-believers. In both religions, proselytization goes hand in hand with the vernacularization of the Bible and Quran. The bible is the most-translated book in the world, as it has been translated in its entirety or at least partially, in more than 3,600 languages,[8] including Aboriginal languages with just a few hundred users.

Religious change is sometimes much more dramatic than established religions attracting (or losing) adherents or upstart sects gaining a foothold in a religiously competitive environment. In rare cases, new religions emerge that fundamentally transform the social, economic, and political landscape. In this section, we focus on two such dramatic changes, which are arguably the two most important instances of massive religious change in the last 1500 years: the Protestant Reformation and the spread of Islam.

We begin by returning to the Protestant Reformation, in which proselytism was decisive. This was a watershed moment in European history—one that heralded religious, political, and economic *change*. Unlike the previous subsection, where we looked at the persistent consequences of the Reformation, we now focus on what brought it about and how it spread. Since much of this work is surveyed in Becker, Pfaff, and Rubin (2016), we will only highlight some important themes.

Ekelund et al. (2002) analyzes the behavior of the Catholic Church from an industrial organization perspective. They argue that the Church was a monopolist engaged in various forms of price discrimination and ultimately placed members seeking the "spiritual services" on the margin of defection. These monopolistic practices encouraged entry by rival firms, like the Lutheran movement. The Catholic Church was, however, successful at fending off market entry

[8] See https://www.wycliffe.net/resources/statistics/.

in areas where it applied "limit pricing" (Bercea et al. 2005). Limit pricing describes a situation where the incumbent firm tries to convince potential entrants that it will produce the same output ("spiritual services") even when an incumbent tries to enter the market, thereby driving down the price and making it unattractive for the potential entrant to try and enter the market. One way the Church signaled this "whatever it takes attitude" was to make huge investments in capital like buildings. Even in modern times, impressive headquarters are a way to signal to potential rivals that the firm is there to stay. Bercea et al. (2005) show that the higher the nave of Catholic cathedrals, the less likely their local monopoly was to be challenged by the Protestant incursion. On the flipside, where the Catholic Church was not able to show off its strength, Protestant challengers could make inroads—ultimately leading to the most important episode of religious change in Europe in the last millennium.

Massive religious change, especially of the type that undermined a powerful vested interest like the Catholic Church, typically requires information dissemination beyond those available via personal networks. In fact, the early reformers utilized the newly invented printing press to disseminate their ideas. Due to high transportation costs, these materials often spread through local reprinting, meaning the presence of a printing press increased access to Reformation ideology. Rubin (2014) shows that having a printing press by 1500 substantially increased a city's likelihood of adopting Protestantism by 1530 (and 1600). Further, Boerner et al. (2021) demonstrate that the adoption of both the Reformation and printing press had even deeper roots. Cities that had adopted mechanical clocks in the 12^{th}-15^{th} centuries were also more likely to adopt printing presses early. While the printing press had a direct effect on the spread of the Reformation, the influence of the clock was more indirect, primarily through its contribution to the dissemination of printing technology.

The nature of the change brought about by the Reformation can be best seen in its short-term consequences. Cantoni et al. (2018) document a reallocation of investments in human and physical capital from religious to secular purposes due to a shift in political power from religious to secular authorities. The latter gained wealth from the closure of monasteries, especially in Protestant regions. At the same time, graduates of Protestant universities tended to choose secular (administrative) majors and occupations rather than religious ones, and construction shifted from religious buildings to secular palaces and administrative buildings, particularly in Protestant regions. The results suggest that the Protestant Reformation triggered secularization processes.

Another period of rapid change in religious and political institutions occurred around two millennia ago with the initial spread of Christianity.[9] The missionary efforts of first century apostles like Paul and Peter among Jews and gentiles alike are documented in rudimentary form in the New Testament but have also been analyzed by social scientists using statistical tools. Ground-breaking work by Stark (1991) used regression analysis for a sample of 22 Greco-Roman cities to study factors driving early Christianization. He found that distance from Rome (as a proxy for Roman influence) is positively correlated with early Christianization while distance from Jerusalem has a negative correlation. At the same time, the presence of a Jewish synagogue (places where early Jewish converts to Christianity like Paul would preach) has a positive correlation with Christianity. Since more archaeological databases are being built (see Matranga and Pascali 2021), we expect more research to study the spread of Christianity in its first centuries while testing various theories.

The spread of early Islam offers another important example of religious change that involves factors related to demography, proselytism, and persecution. Contrary to the old depiction of Islam as having swiftly transformed Middle Eastern and North African (MENA) societies at the point of the sword, contemporary historiography presents a more complex picture (Donner 1981; Nicolle 2012; Lapidus 2014). It took decades, if not centuries, for most of the people in MENA countries to adopt Islam. The evolution of Islamic societies occurred gradually, partly because of substantial resistance from entrenched religious groups. Although a Muslim Middle East eventually came into being, there was substantial accommodation of pre-Islamic culture and religious innovations that contradict claims to a unified Sunni orthodoxy (Bulliet 1979; Bashear 1997; Lapidus 2014).

Scholars are able to estimate the diffusion of Islam and the pace of conversion thanks partly to the remarkable body of Arabic biographical literature. These massive tomes contain genealogies which provide, among many other details, evidence on when Islamic given names first appear in family lineages (Romanov 2017). Data of this kind informed Bulliet's (1979) pioneering work that examines rates of conversion across MENA countries. Remarkably, Bulliet's comparative analysis revealed that the rate of conversions over time nearly always approximated the logarithmic S-curve

[9] Harnack (1908) is one example of a monumental work that documents the spread of Christianity in the first three centuries CE. Harnack touches on many fundamental ideas to measure the spread of religious movements, e.g., via evidence on the adoption of Christian first names (see also Bagnall (1982), who estimates the share of Christians in early Byzantine Egypt using onomastic change). Latourette (1939) and Fletcher (1997) are further examples of works that enrich the history of Christianity with basic statistics on its spatial and temporal spread.

identified by economists and sociologists as a general feature of diffusion in empirical studies of innovation (Everton and Pfaff 2022, p. 4-6).

The genealogical data show that in newly conquered societies, Muslims remained a minority for approximately the first two centuries after the introduction of the religion. The conquerors arrived as an elite warrior caste that was organized along Arab tribal lines, with few openings to converts. Conversions were few, despite compelling incentives to adopt Islam, which included the avoidance of persecution, discriminatory taxation, and opportunities for economic and social mobility.

What stood in the way of mass conversion? Firstly, demographic barriers. Exclusive tribal and ethnic attachments among the conquerors closed off Muslim networks and imposed second-class status on converts. Secondly, the density of religious and ethnic ties among the conquered hindered conversion. Adopting Islam was not socially compelling so long as pre-conquest communities remained intact, on the one hand, and, on the other, the conquerors continued to disdain converts who were not easily assimilated into Arab tribal networks (Bulliet 1979, pp. 37-42; Lapidus 2014).

Large-scale social conversion depended on the institutional evolution of an Islamic society comprising formal (as opposed to tribal) religious authorities (the *ulama*), a body of written Islamic law (*sharia*), the fusion of language with religion (the adoption of Arabic as the written language), and religious officials taking on civic leadership (Bulliet 1979, pp. 34-35). So long as these institutions were underdeveloped, indigenous resistance and elite indifference hampered conversion. The degree of resistance to conversion by the conquered depended in large part on the institutional completeness of the previous religious regime.

This does not mean that incentives to convert were irrelevant. A significant policy widespread in early Muslim empires was the imposition of higher taxes on non-Muslims. Saleh (2018) demonstrates that this policy led to selective conversion to Islam in Egypt. Poorer Coptic Christians converted to Islam to avoid paying the tax, while wealthier Copts, who could afford the tax, tended not to convert. As a result, over time, Copts became a well-off minority with higher human capital and other characteristics associated with high socioeconomic status. Arslantaş and Kukić (2024) show a similar conversion process of peasants happened in Bosnia in the wake of its conquest by the Ottomans. Building on these ideas, Saleh and Tirole (2021) develop a model to analyze the trade-offs faced by a ruler who seeks both tax revenue and conversions to Islam. They show that it can be optimal for rulers to operate on the downward-sloping part of the Laffer curve,

as extraordinarily high tax rates—despite not maximizing total revenue—effectively induce conversions to Islam.

A third factor was the robustness of pre-conquest religious groups. In Iran, the defeated elites of a once powerful empire and its well-entrenched Zoroastrian priesthood obstructed Muslim inroads. Zoroastrian resistance was rooted in social networks that linked Persian society through marriage, commerce, patronage and community rituals. Converts were excluded from these informal structures, pushing them to migrate to the conqueror's new cities (Bulliet 1979, pp. 46-53). By 750 CE, a full century after conquest, Bulliet found that only 8% of the population had converted to Islam, with Iran only crossing the 50% threshold in the decades after 840 CE, that is, following the defeat of the last of the major anti-Muslim revolts. Thereafter, mass conversion proceeded apace, being completed by the end of the next century, at which point about 90% of the population had become Muslim (Bulliet 1979, pp. 44-45).

With saturation, Islam indigenized as mercantile, clerical, and administrative roles were dominated by converts. In due course, Persian Muslims overthrew Arab rulers and returned to the use of the vernacular language—albeit in Arabic script—which allowed a flourishing of Persian culture and literature. New Muslim dynasties reclaimed old forms of kingship and used pre-Islamic Persian political symbols, even wearing the regalia of the old empire (Frye 1975; Daniel 2001). These developments made Iran a thoroughly Islamized society, but not an Arabic one—the dynamics of religious continuity and change created an Islam fully rooted in Persian culture. Meanwhile, in the countryside, rural Islam maintained many cultural continuities with the traditions of the conquered peoples. Islamic sects at odds with the orthodoxy of the cities thrived, often in the form of Sufism, in the veneration of local saints, and in pilgrimages to sacred shrines. Popular mystics and preachers abounded, generally eschewing written forms and making use of vernacular languages (Bulliet 1979, pp. 54-61).

These processes were not peculiar to Iran. Historians have documented similar patterns across MENA societies, many of which had been heavily Christian and Jewish before conquest and where resistance slowed mass conversion. In accordance with expectations of the S-shaped diffusion model, once about half of the population of medieval societies had converted, resistance crumbled and Islam began to institutionalize more fully. As the example of the Egyptian Copts suggests, throughout the region various non-Muslim groups survived the Islamization of society, but as minority groups they were unable to mount challenges to Muslim hegemony. They persisted as

dhimmis, protected minorities conditionally tolerated so long as they remained legally subordinate to Muslims, eschewed proselytism, and paid poll taxes (Johnson and Koyama 2019).

Recent studies have shown how trade also played a crucial role in the spread of Islam. Michalopoulos et al. (2018) shows a strong correlation between the spread of Islam and proximity to pre-Islamic trade routes. They suggest several mechanisms within Islamic religion and society that might explain this connection. Firstly, the Islamic practice of direct trade, where traders traveled with their goods rather than using intermediaries, fostered personal relationships during Islam's early spread. This approach encouraged merchants to trade with fellow Muslims, who shared a common language and similar institutional constraints, thus building trust among trading partners, not least through ties of marriage. Michalopoulos et al. (2018) reinforce Bulliet's (1979) argument about social mobility as a motive for conversion and point to factors such as a career within Muslim bureaucracies (Eaton 1996), or lower tax rates as reasons why groups of people under direct Muslim rule would convert to Islam.

Michalopoulos et al. (2016) demonstrate that the nature of trade and the geography of early Islamic expansion also influenced the development of religious doctrines. As Islam spread along trade routes, the resulting economic inequalities made wealthy areas vulnerable to attacks from poorer regions. To mitigate this risk while preserving the benefits of trade, early Islamic doctrine incorporated redistributive mechanisms, such as zakat (charitable giving), to reduce the incentive for predatory behavior.

In sum, there is no "one size fits all" theory of religious persistence. Sometimes religious beliefs and institutions persist for centuries or millennia. In other cases, new religions emerge and replace old religious beliefs and institutions. Recent research by social scientists has documented both types of phenomena. This research suggests that some present-day outcomes have very deep roots, but also that rapid structural change is in fact possible and new religions can emerge and spread rapidly.

III. Mechanisms of Persistence and Change

The previous section established that the connection between religion and economic development can have very deep roots. Above all else, the reason that religious changes and events that happened in the past affect modern-day development is that religious values, practices, and

institutions tend to *persist*. Religion is a cultural attribute with both formal (e.g., institutions) and informal (e.g., sentiments) characteristics, and as such the mechanisms underlying cultural persistence also enable the persistence of religion. In this section, we overview the various mechanisms that scholars in this literature have cited as central to religious persistence. These include cultural diffusion, (religious) institutions, and political economy, among others.

A. Cultural Transmission

Many works seeking to understand the deep roots of religion borrow from the literature on cultural transmission. This literature views culture in a manner that is useful to conceptualize religion. Building on the work of cultural anthropologists (Cavalli-Sforza and Feldman 1981; Boyd and Richerson 1985; Henrich 2015; Giuliano and Nunn 2021; **citations in this volume**), culture is typically defined as the commonly shared heuristics that people in a society employ to make sense of the complex world surrounding them. Religion has these features as well and can be considered a cultural attribute in most historical and contemporary societies (Acemoglu and Robinson 2024). Religious doctrine, authorities, and communities help shape how people see the world and interpret new information. Importantly, these heuristics fostered by religions are shared among people in the religious community. As such, several religious phenomena are subject to the same mechanisms that drive cultural change more generally.

Within economics, the study of cultural transmission was revolutionized by a series of studies by Alberto Bisin and Thierry Verdier.[10] Bisin and Verdier (2001) formulate an economic model building off of work by Cavalli-Sforza and Feldman (1981) and Boyd and Richerson (1985) (and many others) whereby culture is transmitted in three ways. The first mechanism is vertical transmission, from parent to child. This is a mechanism frequently employed for religious transmission—the best predictor of one's religious faith is the faith of their parents. The second mechanism is horizontal transmission, which one receives from their peers. This is also a mechanism central to religious transmission, where peer effects play a central role in determining one's faith and level of religiosity. The third mechanism is oblique transmission, from the previous generation (but not parents) to a child. This is clearly an important mechanism of religious transmission, both via religious authorities (preachers, imams, priests, rabbis, etc.) and teachers.

[10] For overviews, see Bisin and Verdier (2008, 2011).

Bisin and Verdier (and co-authors) have applied these theoretical insights to explain several features of religion. One question they ask in Bisin and Verdier (2000) is "why have Americans been so slow to assimilate across religious (and ethnic) lines?" This has typically been less true on other dimensions of identity, in which various immigrant groups assimilated within a generation or two. What makes religion unique? On the one hand, horizontal transmission (by peers) favors assimilation—i.e., the "melting pot" analogy often associated with the US. But parents have two mechanisms to combat assimilation, should they desire: early childhood socialization and the marriage market, the latter being important because it is more difficult to pass down one's religious faith to one's children in an interfaith marriage. Bisin and Verdier argue that religious minorities respond differently to socialization pressures than do the dominant religious group. Using what has now become the standard model of cultural transmission, they argue that minorities have a greater incentive to transmit their religion and to marry within their faith because if they do not, their children are likely to pick up the dominant religion via horizontal or oblique transmission. Instead, religious majority groups can afford to be more liberal without threatening the survival of their religious group. Bisin, Topa, and Verdier (2004) present empirical support for this theoretical insight, showing that patterns of intermarriage religion are non-linear; the more that the group is a religious minority the more they are willing to take on costly in-group marriage to preserve their group identity. While these insights are not unique to religious values, they provide compelling explanations for why religious communities have tended to *persist* in the US despite pressures to assimilate on many other margins.

Other works have extended these insights to other cases. Bisin, Patacchini, Verdier, and Zenou (2008) find that Muslims are much slower to integrate in the UK than those of other faiths. They show that Muslims place more intensity on their religious identity, and this is not simply a relic of income or educational disparities. If anything, high levels of income or human capital increase the intensity of Muslim identity. The mechanisms proposed by Bisin and Verdier (2000, 2001), discussed above, help explain this finding. To maintain their religious identity in a primarily non-Muslim society, Muslims have extra incentive to intensely practice their religion. Similarly, in Switzerland, the proverbial Protestant spirit of capitalism (proxied by the rate of entrepreneurship) is more pronounced the smaller the size of the Protestant minority in Catholic majority areas (Nunziata and Rocco, 2016). This means that religious identity is likely to persist, even in an environment where religious identification is costly.

Religious values can also persist due to oblique transmission—that is, via influence of religious authorities. For instance, Iyigun, Rubin, and Seror (2021) expand upon the frameworks proposed by Bisin and Verdier to gain insight into when elites can use their cultural influence to block economic modes of production that are contrary to their interests. Their model suggests that elites can use their power to provide public goods to incentivize parents to transmit cultural traits to their children that better align with the good. This in turn means that cultural traits aligned with a more inefficient sector of the economy may dominate due to strategic investments by elites. This theory certainly applies to religious elites, and Iyigun, Rubin, and Seror apply their theory to the Turkish Islamic Revival during the Gülen Movement. It also provides more general insight into why economically inefficient aspects of religions can persist in the face of more productive modes of production.

What are such inefficient aspects of religion? Historically, one of the most important economically inefficient religious attitudes has been relative antipathy towards science. Bénabou, Ticchi, and Vindigni (2022) argue that this is due to the nature of religious beliefs, which can be eroded by science. In their model, a society's religious culture interacts with its political institutions to either promote science at the expense of religious belief or suppress science and invest in public goods complementary to religion. The existence of multiple equilibria explains why different societies with different endowments of religiosity and use of religious legitimation have different levels of scientific and technological progress. These insights are also central to the model proposed by Seror (2018), who argues that economic prohibitions—including those that impede technological development—can result from religious authorities choosing to prohibit certain actions that only religious minorities undertake. This in turn creates resentment against the minority religious group, via the oblique and vertical cultural transmission mechanisms described above, allowing religious authorities to strengthen their control over the masses. On the other hand, Carvalho and Sacks (2021) argue that economic prohibitions can have the unanticipated effect of making some religious groups stricter, even in times of economic development. Knowing that highly productive people will not be willing to join a religious group that imposes costs (via prohibitions) on its members, these groups screen out the highly productive, thus only attracting the most committed members. This helps explain why extreme religious groups can arise in times of strong economic growth. All these models suggest that cultural transmission can play a central role in the persistence of religious beliefs and institutions that hamper economic success.

The transmission of religious traits may have also contributed to much larger trends of economic growth and divergence via political economy. Bisin et al. (2024) argue that religious political economy, which we discuss in the next subsection, depends on the cultural transmission mechanisms described above. They argue that the use of religious legitimacy depends on the share of religiously committed people in the population, and the incentive to transmit a religious identity in turn depends on the use of religious legitimacy in the political economy equilibrium. The actions of political elites and civil society therefore reinforce each other, leading either to a highly religious equilibrium, where much of the population is religious and religious legitimacy is employed by political authorities, or a more secular equilibrium in which the population transmits secular values and religious legitimacy plays a small role in politics. They apply these insights to account for the "Long Divergence" between the Middle East and Western Europe in economic, political, and religious institutions. Because these equilibria are self-enforcing, this model provides an explanation for the persistence of both (religious) cultural traits and their associated institutions.

Political economy outcomes can also have unanticipated effects on the transmission of religious values. Carvalho (2013) provides intuition for why this might be the case. In an environment where religious values dominate, attempts at secularization by the government (e.g., bans on veiling for Muslim women) can be self-defeating. Carvalho reasons that such government efforts heighten the saliency of religion, allowing people to provide a costly signal of their religiosity by transgressing the law. This means that attempts to minimize public displays of religiosity may end up *increasing* the religiosity of those who are targeted, and this can perpetuate over time via the cultural transmission mechanisms noted above. Carvalho applies this theoretical insight to the rise of veiling among Muslim women in parts of Europe, the Middle East, and North Africa, where veiling has become popular despite government directives to limit it. These insights suggest a mechanism whereby religious practices can persist even in the presence of active measures to suppress the practice.

The transmission of religious ideas may work at the institutional level as well. It is possible, for instance, for certain types of theological ideas to be passed down from parent congregations. Matthews et al. (2013) study such transmission in the context of the 16th-century Anabaptists, a Protestant religious sect that had both violent and pacifist factions. They find that violent ideologies tend to pass from "parent" congregation to "child"—i.e., from one group to a sectarian group that breaks off from the former via schism, akin to vertical transmission at the group level.

However, most other theological beliefs diffuse among contemporaneous groups—i.e., leaders of different congregations within the same sect diffuse ideas to each other, akin to horizontal transmission. These findings provide insight both into why some ideas persist (via vertical transmission) and others evolve (via horizontal transmission of new ideas).

In short, there are several cultural mechanisms that explain the persistence of religious values and organizations. These include vertical transmission of religious values (both within families and organizations), horizontal and oblique transmission (via peers, clerics, and teachers), and religious political economy. The latter of these mechanisms also contributes to the persistence of religious values due to institutional persistence, not just the transmission of cultural values. We turn to such mechanisms next.

B. Institutions and Political Economy

Persistence studies often appeal to institutional or political economy explanations for why certain cultural traits tend to persist. This makes sense: institutions can be "sticky" and unlikely to change, either due to path dependence, vested interests, or complementarities with prevailing cultural traits. When institutions are self-enforcing, they are particularly likely to persist over time, as they generate patterns of behavior which strengthen the very rules promoted by the institution (Greif 2006b). This logic is no different for religious institutions as it is for political, legal, or social institutions. Religious institutions explicitly promote behaviors that strengthen themselves in both the short and long runs. A key mechanism through which this occurs is political economy. When religious interests intertwine with those of political authorities, it can create powerful coalitions that have much to lose when the political economy equilibrium changes. Religious authorities therefore do what they can to maintain the political economy equilibrium, even in the face of a changing world, thus contributing to the persistence of religious institutions and norms. One upshot is that optimal institutions do not always prevail. This is especially true of religious institutions, which have historically been deeply intertwined with politics, thus permitting persistence in situations in which religious norms no longer complement the economic environment.

An important mechanism through which religion affects political economy outcomes is via political legitimacy. Greif and Rubin (2024b, p. 294) define legitimacy as "the internalized belief that a political authority has the right to govern and have its demands obeyed." In their framework, legitimacy is fostered by legitimating agents—those elites who can shape the beliefs of the

population regarding who is a legitimate authority. Historically, religious elites have been particularly effective as legitimating agents. In fact, Bentzen and Gokman (2023) find that regions in which rulers used religion to legitimate their rule in the past have more institutionalized religion in the present and that rulers have been able to use this power to prop up autocratic regimes. Religious authorities can legitimate political rule because, in many faiths, the very source of the power held by religious authorities is their direct connection to the otherworldly—a connection not held by other members of society. In a religious society, this makes religious authorities influential—and thus a powerful agent with whom a political authority would want to align. It also insulates political authorities from threats to their power.

The logic of political legitimacy—how it is endogenously created and why it differs across societies—helps explain differences in several economic outcomes across the globe. Rubin (2011, 2017) studies how legitimating arrangements evolved over time in Western Europe and the Middle East. He notes that religious legitimacy has been relatively inexpensive in both regions—and thus used by political authorities—but doctrinal differences associated with the births of the religions yielded Islam more effective at legitimating rule than Christianity. This meant that Muslim religious authorities had an important seat at the political bargaining table, especially after the madrassa movement bolstered the "ulema-state alliance" beginning in the 11th century (Kuru 2019). These insights are supported in a study of political advice texts by Blaydes, Grimmer, and McQueen (2018). They find a distinct break in the 12th-14th centuries—soon after the spread of the madrasa movement—where Muslim rulers were increasingly advised to make appeals to religion and Christian rulers were advised to appeal to alternative sources of power.

In Islam, religious authorities are effective at inducing compliance with tax collection, both through increasing legitimacy (and thus inducing subjects' beliefs in the right of the authority to tax) or by relaxing legal constraints imposed by Islamic law (Coşgel, Miceli, and Ahmed 2009). Muslim clerics were particularly effective due to the relative lack of religious competition in large (though not all) parts of the Muslim world, which allowed clerics to legitimate the state and thus lower tax collection costs more effectively (Coşgel and Miceli 2009). The alliance between political authorities and clerics persisted over time in many parts of the Muslim world, despite major economic changes, because the political economy equilibrium was self-enforcing. An important side effect of this alliance was that it removed the economic elite and intelligentsia from political decision-making in much of the Muslim world, meaning that policies favoring economic

development were less likely to arise. These legitimating alliances have tended to persist, entailing institutional persistence along religious and political dimensions.

One implication of the persistent importance of religious legitimacy in the Islamic world was that Islamic law continued to be the dominant means of jurisprudence, especially in commercial affairs. This had several unintended economic and political consequences that persisted over centuries, many of which are spelled out in Kuran (2011, 2023). One consequence was the absence of anything resembling a corporate form in the Islamic world. This was not due to the rigidities of Islamic law. Instead, Islamic law regarding partnerships and inheritance disincentivized large commercial partnerships. A classical Islamic partnership had to be disbanded upon the death of any member. It could be re-formed so long as all heirs agreed to this. However, Islamic inheritance law, which is explicitly spelled out in the Qur'an, laid out a preordained set of several heirs, any one of whom could disband the partnership. In response, there was little demand for large partnerships with pooled capital, as each additional partner increased the risk of premature death and thus the dissolution of the partnership (Kuran 2011).

One way to circumvent the splitting of inheritance was to put one's assets in a *waqf* (akin to a trust) and have one's desired heir manage the trust (with a hefty salary). A problem with *waqf*s is that they are inflexible—the founder sets out directives for the trust, which typically must provide some type of good that future trustees could only rarely change. The *waqf* also had to be established by an individual, meaning that it was not a vehicle for capital pooling. Kuran (2023) argues that the popularity of the *waqf* in the medieval and early modern Islamic world crowded out the type of organizations that could have constrained executive power. Clerics had limited capacity to do so, as they were not organized under any institutional umbrella (like the Catholic Church), and any one individual cleric could be co-opted by the state (Platteau 2017). The *waqf* crowded out the type of secular civil society organizations that could use their economic power to influence political decision-making.

In this view, the *waqf* was a source of the persistent weakness of civil society, which itself was a key driver of the persistence of autocracy that is still present in large parts of the Islamic world. Bazzi, Koehler-Derrick, and Marx (2020) find the rise of Islamist political parties was another unanticipated consequence of the use of *waqf*s for asset shielding. In Indonesia, a wave of state expropriations in the 1960s incentivized many Muslims to transfer their assets into *waqf*s to avoid confiscation. This increased the power of local religious authorities as well as the budgets of

religious schools and mosques. In places with well-endowed *waqf*s, therefore, a new generation arose that held a more conservative, Islamist ideology. As a result, these areas had high support for Islamist political candidates and the implementation of sharia laws.

According to Rubin (2011, 2017), a different political economy outcome transpired over time in Western Europe (relative to the Middle East), where the Church lost much of its legitimating power beginning in the late medieval period. Because of the relatively weak legitimating power of the Catholic Church (at least, relative to Muslim religious authorities), Christian rulers turned to alternative sources of power during the Commercial Revolution (11^{th}-13^{th} centuries), when commerce and trade became enticing sources of revenue. This process was accelerated by the Reformation, where the Church was removed and (typically) had its assets confiscated. As new interests came to the political bargaining table—organized in parliaments or assemblies—a new political economy equilibrium arose in which commercial interests were represented. This was especially true in England and the Dutch Republic, which for a variety of historical reasons had relatively strong parliaments (Rubin 2017; Greif and Rubin 2024a). This contributed to the economic success of these nations, as the economic elite bargained for the types of policies that would help themselves—secure property rights, transport networks, naval protections for merchants—but also tended to contribute to economic development.

More generally, one aspect of Christianity and Islam that has kept them robust over the centuries is that church and state often formed a symbiosis reinforcing each other. Becker and Pfaff (2024) discuss the many ways in which church and state have supported each other while, naturally, also sometimes conflicting with each other. But more often than not church and state, both in the Christian and Islamic worlds, have been Siamese twins. The strongest form of church-state-symbiosis comes in the form of theocracies (Ferrero and Wintrobe 2009), followed by the many cases of state religions (see Barro and McCleary 2005) around the world.

The comparison between Western European and Middle Eastern political economy reveals that religion and religious legitimacy can be both a source of institutional *persistence* as well as institutional *change*. In the Middle East, the incentives of all the relevant players—rulers, clerics, civil society—were such that there was little demand for change in the political economy equilibrium. On the other hand, in Western Europe, the political economy equilibrium was not as strongly reinforcing, and it eventually unraveled as new economic opportunities emerged. Political, economic, and religious institutions changed (relatively) more rapidly as a result.

Religion has played several other roles in shaping political economy equilibria. One of the defining characteristics of medieval European politics was fragmentation. The Holy Roman Empire was at times split into hundreds of polities, and France, Spain, and Italy were likewise highly fragmented. Grzymala-Busse (2020, 2023) argues that the Church contributed to this fragmentation. If any of the major European powers became too large, they may not need the legitimacy and services provided by the Church. It was therefore in the Church's interest to keep states relatively small. They did this by pitting the powers against each other, taking different sides in different conflicts and never allowing any one state to become too large. The Church could do this not only due to its power to legitimate rule, but because it was by far the largest landholder in Europe and had the wealth to engage in political and military affairs. This allowed the papacy to shape states via doctrine, law, and administrative innovations, which would persist long after the Church lost its central role in the European political economy equilibrium. Another way in which the Church affected medieval governance was via bishoprics, which ruled over large tracts of land in continental Europe. Bishoprics were ruled relatively autocratically, and bishops ruled their states with few constraints on their power (except within the Church itself). Belloc, Drago, and Galbiati (2016) show that bishoprics were especially slow to transition to self-governance and that earthquakes slowed this transition even further. Since Christians viewed earthquakes as signs from God, this gave bishops an upper hand in interpreting them, allowing them to keep their autocratic powers and slow the transition to self-governance. This had persistent consequences on Europe's political economy equilibrium.

Another mechanism through which religious political economy affected economic development was usury restrictions. Such restrictions existed in both Christianity and Islam. Rubin (2011, 2017) argues that these restrictions eventually weakened in Christianity due to secular rulers seeking alternative sources of legitimacy, while they persisted in Islam (although they were easily evaded) because religious legitimacy remained important. One unforeseeable consequence of these differences was that bills of exchange (debt instruments) evolved differently in the two regions. In medieval Europe, bills of exchange eventually substituted for interest-bearing loans and incentivized financiers to expand their operations interregionally to take advantage of differences in exchange rates. This sequence of events did not occur in the Middle East, and finance remained local (Rubin 2010). Less access to finance may have had persistent effects in the former Ottoman lands. Grosjean (2011) finds that those parts of southeastern Europe that fell under Ottoman rule

have, in the present, 10 percent less bank concentration. Meanwhile, Walker (2020) finds that Romanians currently living on the Ottoman side of the old Ottoman-Habsburg border have less access to banks and lower savings.

In short, religious political economy has played a central role in generating *persistent* economic and political outcomes. Under other circumstances, it facilitates institutional *change*. Religion has played a central role in political economy both because religion is a powerful source of political legitimacy and because religious authorities and institutions themselves have historically had much wealth, which made them powerful. The ways in which religion affects political economy outcomes are often unforeseeable, as in the cases of prohibitions on cousin marriage or taking interest on loans. In many parts of the world, especially Western Europe and the Middle East, the legacy of historical religious political economy affects all types of economic, political, and religious outcomes in the present.

C. Networks and Diffusion Processes

Another mechanism through which religious values and norms either change or persist is via networks. The effects of networks are situational and contingent, and they can thus help explain the rapid diffusion of new religions, as well as why previously established ones prove remarkably durable.

Major cultural change on a large scale usually requires social reinforcement across multiple network domains (multiplexity) and through multiple diffusion processes such as learning, emulation, and social influence (Everton and Pfaff 2022; Hsiao and Pfaff 2022; Wimmer, Lee and LaViolette 2024). Without appreciation of the structure of networks or the kinds of relations that flow through them, it is hard to understand the incentives that shape religious behavior.

Conventional explanations of the inception of new religious movements focus on their ideological appeal or the grievances and deprivations of those who join them, but these explanations have several well-established flaws. Subjective grievances and deprivation are far more common than joining new religions and the most active proselytes are not typically from the ranks of the socially wretched. Empirical studies of converts find that, at least initially, most seem neither to have been convinced by or identified strongly with the new religion's doctrines. Social network analyses show how social recruitment and reinforcement operate through strong ties and the gradual social conformity that results from ongoing and expanding exchange with in-group

members (Snow et al. 1980; Stark and Bainbridge 1980; Everton 2018). Network complexity and multiple relations of these kinds in large-scale have been shown in the rise of Christianity in the Greco-Roman world (Stark 1996; Collar 2013a, 2013b) and the spread of the Protestant Reformation in the sixteenth century (Becker, Hsiao, Pfaff, and Rubin 2020, 2024), among other cases.

Religious persistence depends on the retention of group members. Network density, meaning the degree to which the nodes in a network are connected to each other represented by the proportion of the maximum number of possible ties, strongly reinforces integration (Everton 2018). Instrumentally, religious groups are often important sources of information and the exchange of resources (Murphy, Nourani, and Lee 2022), meaning that defection from religious networks can be socially ruinous and economically costly. Above all, affective bonds deter reaffiliation because the social costs of exit are usually prohibitive when relatives, co-workers, and neighbors belong to the same religious group. Where categorical religious identities and social networks are tightly overlapping, social integration may be so great that it makes adopting a new religion nearly impossible.

Besides network density, social and geographical stability are important factors that help explain the persistence of settled religious traditions. Mobility tends to facilitate conversion when it removes people from pre-existing networks that had fostered group conformity and dependence (Stark 2006). New religious movements are generally more appealing to recently uprooted or upwardly mobile people removed from previous communities and unable to take part in routine religious activities (Everton 2018, p. 122-26). Note that these demographic factors featured prominently in the cases of the rise of Christianity and the spread of Islam discussed above in Section II.

In structural terms, many religious innovations tend to arise on the periphery of networks, where influential brokers are less likely to spot and sanction upstarts (Watts 2004; Everton 2018). For instance, early Christianity spread outward from Jerusalem on the periphery of the Roman world and this marginal position may have shielded it from repression as it spread westward from the larger Greek-speaking cities (Stark 2006). On the other hand, there is evidence that emerging from the periphery of the trade and transport system slowed its diffusion because of effective travel distances. The acceleration of Christian diffusion in the third century CE may have been driven by the emergence of regional clusters of Christianized cities from whence the movement could further

disperse. Fousek et al. (2018), a team of theologians, geographers, and computer scientists, show that the spread of Christianity in the first two centuries closely follows gravity-guided diffusion, demonstrating how the spatial-temporal patterns observed in the data can be explained using only spatial constraints and the urbanization structure of the empire.

Peripherality mattered in a relational sense as well. Episodic persecution and arrests of suspected Christians was likely ineffective in halting social conversion. Christianity may have spread through scale-free networks in which ties were sparse except for a small fraction of influential people whose conversion would have spread to many others. Network structures like these are less affected by removal of random nodes in the network such as through irregular repression (Schor 2009; Everton 2024).

A compelling application of network dynamics to explain religious persistence and change is Collar's (2013a, 2013b) work on Judaism in late antiquity. She explores why Judaism persisted in the first few centuries CE despite assimilationist pressures, competition from a host of other religious movements, official persecution, and hostility from Gentile neighbors. These forces could have combined to erase Judaism, but instead revival movements redefined the religion and enabled the diaspora to persist to the present day.

Based on archaeological evidence, particularly epigraphs (inscriptions on monuments, stellae, gravestones, etc.), and social network analysis, Collar explains the evolution of Judaism in late Roman antiquity. Incentives to conform and assimilate into Gentile society confronted the Mediterranean diaspora (Jews outside of Judaea) as it spread across the Greco-Roman world (Collar 2013b, pp. 150-51). As suggested by the epigraphic evidence, the diaspora gradually Hellenized, with many Jews taking Greek names and some marrying Gentiles. Greek became the predominant language of religious instruction and observance. As Judaism became part of the fabric of towns, some Gentiles converted while other "Judaizers" adopted parts of their customs and worship. In this context, Jewish religion and ethnic identity risked losing its distinctiveness, threatening reaffiliation into Christianity or other monotheistic sects, if not failing prey to general assimilation.

These developments were compounded by a second set of pressures that arose in the wake of the catastrophic Jewish rebellions against Roman rule which resulted in the destruction of Jerusalem's Second Temple in 70 CE and the expulsion from Judaea in 132 CE. This cataclysm created a new crisis of religious identity for a diaspora that had been loosely linked through

common ties to Jerusalem—the center of pilgrimage, religious authority, and sacrifice. Distrust of Jews increased, and Roman authorities imposed discriminatory taxation on all Jews, not just those in rebellious communities. These burdens and mounting social tensions may have made it more attractive for Jews to shed their religion and assimilate into Gentile communities (Stark 1996; Collar 2013b, p. 244).

Instead, Collar's epigraphic data shows that between 200 and 500 CE there was a gradual increase in Hebraization across the empire's urban centers with diffusion occurring across ethnic networks to the far reaches of the western empire. Hebrew began to displace Greek and Aramaic in epigraphs and in Jewish naming. Explicitly Jewish iconography (the menorah, shofar, etrog, etc.) became standard in inscriptions (Collar 2013b, pp. 165-66). Based on this and other evidence, Collar argues that this was because a new, universalizing rabbinic Judaism based on the halakha had diffused through the diaspora network.

Collar's network analysis shows that in the first and second centuries, diaspora networks were centralized but sparse, with little routine interaction between Jerusalem and dispersed communities. In the third century the network became more densely connected. Collar argues that a strong-tie network that linked prominent rabbis to relatives in the larger enclaves in Asia Minor propelled the early diffusion of rabbinic Judaism (Collar 2013b, p. 230). However, Hebraization did not spread only in proximity to major diaspora centers, but rather was an empire-wide phenomenon in which exposure to the rabbinical network was more important than distance to Palestine (Collar 2013b, p. 213).

Collar's study of early Judaism reveals the power of multiple networks to enable religious *persistence* through innovation and adaptation. Recent work on the spread of the early Reformation also shows the important role that networks can play in facilitating religious *change*. A host of factors explain the onset of the Reformation on both the supply and the demand sides (Becker, Pfaff and Rubin 2016; Becker, Rubin, and Woessmann 2021, 2024), but recent work using network concepts and methods has uncovered mechanisms to explain the rapid diffusion of Protestantism in the early sixteenth century. This work shows how networks arising from trade relations, political alliances, and the personal influence of Martin Luther and other renegade theologians allowed the movement to coordinate its attack on the Roman Church and persuade urban elites to adopt it (Kim and Pfaff 2012; Wurpts, Corcoran, and Pfaff 2018; Becker, Hsiao, Pfaff, and Rubin 2020, 2024; Roller 2022).

While every challenge to the Catholic Church's monopoly was at risk of being violently suppressed, a multitude of challengers have a larger chance of succeeding. Cantoni (2012) shows that a German territory's distance to Wittenberg, the city in which Martin Luther taught, was a major determinant of adoption of the Reformation. This constitutes evidence of strategic neighborhood interactions: since adopting Protestantism was a risky enterprise for territorial lords, it was easier when neighboring rulers had committed to the new faith. Becker, Hsiao, Pfaff and Rubin (2020) complement this result by highlighting the role played by Martin Luther himself. The combination of personal/relational diffusion via Luther's multiplex ties[11] and spatial/structural diffusion via trade routes fostered cities' adoption of the Reformation, making possible Protestantism's early breakthrough from a regional movement to a general rebellion against the Roman Catholic Church. This paper complements Kim and Pfaff (2012), who show that student networks associated with Protestant theologians are associated with adopting the Reformation, but that exposure to networks tied to orthodox universities made cities less likely to adopt Protestantism. Becker, Hsiao, Pfaff, and Rubin (2024) argue that in the urban Reformation of the 1520s, Luther's movement was countered by loyalist Humanist networks tied to Desiderius Erasmus, the most important intellectual celebrity to oppose Lutheranism. Reconstructing the multiplex influence network of both men (correspondence, visits, students), they show that cities directly influenced by Luther were more likely to adopt Protestantism, but not if subsequently contacted by Erasmus, whose influence appears to have had a local "firefighting" effect.

Networks are multivalent and network dynamics can help explain not only change but why cultural persistence is powerful. Religious innovations rely on exposure to new ideas, on the one hand, and, on the other, social reinforcement that backs their adoption, which means that network proximity and structural availability are decisive for conversion but are usually factors that make established religions sticky.

D. Religious Competition as a Source of Change

Competition between religious "firms" is often the driving force behind religious change. The early US provides an example of a country with religious competition, and it is therefore a

[11] Multiplex ties describe three different types of links between Luther and cities in the Holy Roman Empire (HRE) made across different social relations: correspondence via letters, Luther visits in towns across the HRE, and cities of origin of students studying in Wittenberg.

laboratory to study rapid religious change. Finke and Stark (1989) show that Protestant "mainline" churches began to collapse rapidly in the period 1776-1850 when challenged by Baptists and Methodists, which at that time were considered upstart evangelical "sects." According to Finke and Stark (1989), the Baptists and Methodists grew because of their organizational structures, clergy, evangelical techniques and, perhaps most important, their democratic theology.

Religious competition can also act as a source of efficiency, akin to neoclassical supply and demand models. This can be seen in the context of Catholic Orders. While not strictly speaking in competition with each other, they operated in an environment where the number of those willing to dedicate their life to a religious body is limited, and thus "competition" for those select few can be fierce. Rost and Grätzer (2014) characterize Catholic Orders as multinational organizations (MNOs) and hypothesize that their introduction of organizational rules and the redefinition of labor within these rules made them the most efficient organizations of their time, allowing them to spread rapidly throughout the world. Empirically, they show that monasteries of Catholic Orders have higher survival prospects the more comprehensively the Order has implemented bureaucratic rules.

In general, research on periods of religious ferment shows that challenges to settled religious traditions often take the form of a contest between upstarts and established religions (Iannaccone 1998; Stark and Finke 2005). Incumbent religious authorities typically disparage "new religious movements"—newcomers and innovators—as cults and sects (Stark and Bainbridge 1985; Dawson 2017). Considered more precisely, cults are social enterprises that invent or import new religious goods into a given cultural context. Sects are social enterprises that innovate within existing religious traditions, generally producing higher-tension versions of familiar religious goods, often by claiming to restore a religion to its purer or more authentic scriptural or traditional roots (Stark and Finke 2000).

In either instance, these enterprises generally are in moral tension, if not in open conflict, with established religious culture. Although their inception could reflect exogenous shocks or endogenous tensions, the growth of "new religious movements" (NRMs) has several common features that help to explain why their success is often limited and poorly performing incumbents persist. NRMs must recruit members and bring them into gradual social conformity into what the surrounding society will regard as a foreign intruder or deviant subculture. Stark and Bainbridge (1985) argue that certain structural and relational features of new religions determine their ability to spread. Generally, people attempt to conserve social capital when making religious choices,

meaning that NRMs that require smaller cultural adjustments are more likely to succeed. Most people will not join a religious movement that substantially reduces their social status. Stark's (1996) seminal research on the rise of Christianity in the Greco-Roman world provides further evidence suggesting that NRMs are more likely to succeed if they retain a degree of cultural continuity with surrounding society and adherents can maintain (if not improve) their social status by joining them.

Early converts to NRMs typically have weak social capital, meaning few countervailing social ties that would hinder conversion. Sects often attract the disenfranchised or disaffected members of society. However, being more culturally exotic and potentially costly to join, cults tend to attract better educated recruits weakly integrated into conventional society (Stark and Bainbridge 1985; Everton 2018). The balance of social ties is often decisive. People are more likely to convert when they have a greater number of intimate ties to an NRM compared with other attachments. Structurally, that means that conversions are most likely where integration into established religious and social networks is weak and where people can make affective ties to NRM members (Snow et al. 1980; Bainbridge and Stark 1980). Strong-tie recruitment may be especially important where a religion is stigmatized or exotic, whereas weak-ties are more efficient in lower-tension contexts (Erin 2016).

Even in structural models, the costs of conversion at the micro-level matter. Very high-cost group membership associated with aggressively sectarian or highly exotic NRMs limits recruitment because these groups can appeal to fewer people and because they tend to separate their members from pre-existing relationships. Members of highly sectarian and exotic religious groups struggle to recruit new members because these groups can appeal to fewer people and because members have separated from previous networks. Once sectarian and cult-like groups are established, their relative social encapsulation may help to protect them, but it also effectively shuts off most channels of recruitment and broader cultural influence. Given a safe niche and adequate fertility, such unusual groups can persist indefinitely but, short of exogenous opportunities, cannot spread widely (Schaefer and Zellner 2015).

Religious competition can also lead to schism—a publicly recognized split between groups within a religion that may give rise to new organizations. Schisms arise from disagreements about leadership, doctrine, practice, and institutions. In Judaism, a split occurred during the 19th century, in the context of a marked shift towards Jewish emancipation. Carvalho and Koyama (2016) and

Carvalho et al. (2017) examine how Jewish communities in Germany and Eastern Europe responded to increased citizen rights amidst varying degrees of economic development. Two distinct responses emerged: in Germany, a liberal Reform movement developed, while Ultra-Orthodox Judaism took hold in Eastern Europe. Carvalho and Koyama (2016) provide a historical narrative and model of religious organization that explains these polarized responses. Like the theories of Iannaccone (1992) and Berman (2000), they suggest that strictness functions as a screening device for community membership. Jewish communities were comprised of individuals with varying levels of religious attachment. Income could be spent on consumption or donated to the community, with a trade-off between effort and monetary contributions. In economically underdeveloped Eastern Europe, religious leaders maintained cohesive communities without excluding those with lower religious attachment. In contrast, in the more developed parts of Germany, communities allowed those with lower attachment to contribute more financially while reducing their effort. Further exploring these dynamics, Carvalho et al. (2017) found that in Germany, non-religious and Reform Jews significantly increased their education rates. Meanwhile, Orthodox and Ultra-Orthodox communities in Eastern Europe imposed stringent restrictions on secular education and isolated themselves from broader society. This bifurcation is explained by a model where education not only provides economic benefits but also transmits values that could undermine the cultural identity of minority groups.

It is surprising that the literature on culture and economics has not thus far studied other major schisms across world religions beyond the Protestant Reformation and the split between Orthodox and Liberal Judaism. Major schisms deserving attention are the East–West Schism, also known as the Great Schism or the Schism of 1054 that divided the Roman Catholic from the Eastern Orthodox Churches, and the split in Islam into Shia and Sunni factions soon after Mohammed's death. Substantial schisms also mark the twenty-five centuries of Buddhist history, including the birth of the Mahāyāna tradition (Cole 2005). These schisms have had a massive effect on world history yet have received little attention from an economics perspective.

Religious competition can also precipitate change through conversion. Using data from the International Social Survey Program (ISSP) in 1991 and 1998 and the World Values Survey (WVS) on current and former religious adherence, Barro et al. (2010) calculated country-level religious conversion rates for 40 countries. They developed a theoretical model based on rational individual choice, positing that the frequency of religious conversion depends on the cost of

switching religions and the cost of adhering to the "wrong" religion. Their findings support several hypotheses: religious conversion rates are positively related to religious pluralism (measured by adherence shares), negatively related to government restrictions on religious conversion, positively related to levels of education, and negatively related to a history of Communism. Conversion rates show no correlation with per capita GDP, the presence of a state religion, or the extent of religiosity. The effects of the types of religious adherence are minor, except for a negative effect associated with Muslim adherence. Barro and McCleary (2024) extend the work of Barro et al. (2010) by using the ISSP survey waves for 2008 and 2018 to extend the sample to 58 distinct countries.[12] While the earlier set of 40 countries comprised mostly rich countries, now there are 5 in Latin America, 5 in Africa, and 17 in Asia/Pacific (not counting rich countries Australia, Japan, and New Zealand). The patterns driving religious conversion in this extended set of countries are similar to those of rich countries alone.

IV. The Present: Religion and Contemporary Economic Development

In the previous sections, we discussed how historical variation in religion has affected present-day development and explored why this persistence either exists or fades away. We now turn to the present and consider contemporary variation in religious outcomes and effects. Several literatures have emerged over the last few decades highlighting the multiple ways in which religion still impinges on economic development in the modern day, both for good and bad. Among the most important of these processes is secularization, which we discuss first. We proceed to discuss how economic development affects religious participation. Far from a simple, unidirectional trend where more economic development leads to more secularization, changes in aspects of economic development tend to be associated with shifts in religious affiliations or changes in religious intensity rather than dropping religion altogether. Recent literature has stressed the need for social insurance and psychological comfort in times of economic uncertainty. We then consider how changing economic conditions affect the supply of religion. Finally, we explore how variation in religious institutions and beliefs affects contemporary development outcomes.

[12] Barro and McCleary (2024) do not use the WVS data because of problems related to measuring changes in religion.

A. The Secularization Hypothesis

Although religion occupied a central place in explaining economic and social order for thinkers from Adam Smith to Max Weber to R.H. Tawney and beyond, most social scientists from the late 19th century onward argued that religion was doomed to shrinking influence as societies embraced modern capitalism. Although it encompasses a diverse body of thinking employing a variety of causal mechanisms, secularization theory generally maintains that capitalist development erodes the unity between faith and society and with it the plausibility of religion, the intensity of religious sentiments, and the authority of religious institutions (Berger 1967; Wilson 1982; Bruce 2011).

Secularization theory drew from modernization theory, and as Ronald Inglehart (2000, pp. 81-82) declared: "Economic development almost inevitably brings the decline of religion, parochialism and cultural differences." The theory found support in a host of historical case studies and in cross-national research finding a negative correlation between various measures of social and economic development and religiosity (Norris and Inglehart 2004; Inglehart and Baker 2000). Norris and Inglehart (2004) deployed cross-national evidence from the World Values Survey to support their theory that economic insecurity drives religiosity and that various measures of religiosity diminish with socio-economic development. Against such generalizations, the United States is frequently cited as a case that contradicts the general expectations of secularization theory. However, recent trends suggest that a delayed process of secularization is affecting Americans too. Since the late 1960s, each successive five-year cohort of Americans has been measurably less religious than the preceding one, a generational replacement issue delayed but not substantially different from that observed in other advanced industrial democracies (Voas and Chaves 2016; Bruce and Voas 2023).

Nevertheless, there is no unified theory of secularization and the causal mechanisms at work remain subject to dispute (see, e.g., Stark 1999; Gorski and Altinordu 2008; Pfaff 2008; Bruce 2011; Bruce and Voas 2023). Critics point out that secularization theory is too broad and lacks specificity; even its most fervent defenders acknowledge that the "precise levers" through which modernization affects religion remain fuzzy (Bruce and Voas 2023). Furthermore, secularization theorists may have exaggerated how religious people were in the pre-modern past, making the putative decline of religion in the modern era seem more dramatic than it may have been. History suggests that there was no "golden age" of universal belief in the past, that societies across time

and place have always varied in their religiosity, and that the decline of tradition need not mean religion's disappearance (Gorski 2000; McLeod 2000; Clark 2012; Seabright 2024).

In the last two decades, there has been a wealth of literature reexamining the causes of religious decline. Berger's (1967) classic statement of the problem of secularization provides a useful framework by distinguishing between subjective and objective secularization. Subjective secularization is cultural and psychosocial. It obtains where religious explanations lack plausibility, religious symbols and doctrines have lost their appeal, and where people no longer feel bound by religious strictures. Objective secularization is institutional; "it is the process by which sectors of society and culture are removed from the domination of religious institutions" (Berger 1967, p. 107). Subjective secularization is manifest in declining personal religiosity (attendance, prayer, intensity of belief, confidence in religious leaders, and so on) and personal decisions being made without a religious referent. Objective secularization is manifest in the rationalization of the economy, regardless of the religious or moral implications, in the separation of church and state, and the reallocation of resources from religious to secular purposes.

Some research has carefully examined the causal mechanisms that can explain variation in subjective and objective secularization. On the subjective (or demand) side, McCleary and Barro (2006) found in cross-national research that religiosity was both a cause and consequence of economic growth. Higher religiosity seems to impede development and as it recedes the potential for growth improves. Meanwhile, income has a negative causal effective on religious participation and beliefs, with a one standard deviation increase in log GDP per capita decreasing church attendance by 17%. Similarly, Herzer and Strulik (2017) found a negative long-term relationship between church attendance and income levels in Western industrial societies. Using panel data from the period 1930-1990, they found that causality ran in both directions, as rising income led to falling attendance and falling incomes to rising attendance.

A theoretical paper by Strulik (2015) suggests a possible mechanism. Drawing on identity economics, Strulik argues that choice of a secular identity increases the pleasure that people draw from consumption. Subjectively, consumption competes with religious piety (proxied by church attendance). Consequently, to enhance consumption secular people will work longer and save more compared with people who choose a religious identity. Secularism is thus conducive to economic growth and Strulik dates the beginning of European secularization to the dawn of

consumer revolution of the 18th century (see Esteban et al. (2019) for similar arguments supported by contemporary European data).

Changes to government regulations can also trigger subjective secularization. Gruber and Hungerman (2008) show that changes in the opportunity costs of religious behavior can have substantial effects on subjective religiosity. When American states removed restrictions on secular consumption on Sundays (so-called "blue laws"), religious attendance and voluntary donations declined. In some instances, governments and political movements may directly target religious organizations by imposing onerous regulations and attempting to introduce explicitly secular substitutes for religious organizations, products, and services. Gill and Lundsgaarde (2004) show that social spending and religiosity are negatively correlated, perhaps because state expenditures crowd out religious charity.

Work by Becker and Woessmann (2013) calls the claims between income and secularization into question during Prussia's rapid industrialization and urbanization. They construct panel data for 175 Prussian counties from 1886-1911 that allow them to test the relationship between economic development and church attendance. They find that increasing income appears to decrease attendance but that the association disappears in a panel structure that controls for omitted variables and unobserved heterogeneity. Their analysis thus finds no support for a causal interpretation of income-driven secularization in Prussian modernization. Becker, Nagler, and Woessmann (2017) propose that it is education and not income that causes behavioral secularization. The decline in religious observance in industrializing Prussia was dramatic, with church attendance among Protestants falling by about one third between 1890 and 1930. In a fixed-effects analysis of a unique panel dataset that captures educational expansion and church attendance in cities during this period, they find that secondary school enrollment but not income or urbanization is negatively related to church attendance. The relationship is directional because increased education decreases church attendance but not vice versa. The mechanism that they suggest is the same as that proposed by Berger (1967), namely that critical education fosters subjective secularization by reducing the plausibility of religious explanations.

Objective secularization is the other side of the debate about the long-term effects of religious decline. Researchers in the religious economies tradition argue that established religion tends toward substandard performance, inspires weak voluntary participation by the laity, and fosters a lack of innovation and differentiation in religious products and services (Iannaccone 1991, 1997,

1998; Stark and Iannaccone 1994; Stark and Finke 2000). Whereas Stark and Iannaccone tend to emphasize religious pluralism as the best way to understand the competition underlying religious vitality, more recent research suggests that state involvement in the production of religious goods may be the most important factor in determining the vitality of religious firms. McCleary and Barro (2021) argued that highly regulated religious markets suppress innovation and marketing, leading to less diverse religious economies. However, they also show that the share of societies with a state-established religion has been falling in the last century, meaning that even partial deregulation could promote religious vitality. While truly incontestable religious monopolies are becoming less common worldwide and church and state have been separated to some extent in many societies, substantial state regulation of religion and/or political favoritism toward some religious organizations is ubiquitous worldwide, suppressing religious pluralism (Fox 2006; Grim and Finke 2010).

Several historical sociologists have explored intentional secularization by political elites. Christian Smith and his collaborators (2003) detail a "secular revolution" in American life as progressives and business elites resolved to reduce or remove religious influence from public schooling, universities, and commerce in the early 20th century. Mayrl's (2016) comparative work explains why governments in some English-speaking countries took aggressive steps to eliminate religious instruction in public schools, finding that aggressive efforts in the United States were driven by unlikely coalitions of anti-clerical, anti-immigrant, and anti-Catholic interest groups. Nevertheless, Kuru (2009) argues that American secularism is relatively "passive", primarily focused on the state's neutrality toward religion, as opposed to the laical policies of republican France and Kemalist Turkey whose "assertive" secularism used state power to banish religiosity from the public sphere.

Besides regulation, another supply-side factor may be substitution. Governments and political movements may directly target religious organizations by attempting to introduce explicitly secular substitutes for religious organizations, products, and services (Froese and Pfaff 2005; Pfaff 2008). Nationalism and national cults have frequently vied with religious observance and, at its most extreme, substitution was the explicit policy of state-promoted atheism that sought to replace organized religion with a socialist quasi-religion. Communist regimes launched the most radical and ruthless efforts to secularize societies, which Froese (2008) shows was a coordinated "plot to kill God" that in spite of much blood and suffering came up far short of its goal. Research by

Froese and Pfaff (2001) details how Communist regimes sought to attack religion through a combination of repressive regulation and explicit substitution. Substitution policies included promoting official doctrines of "scientific atheism" through education and mandatory participation in youth organizations and cultural associations (Froese and Pfaff 2005). Although they never managed to kill off God completely, such efforts fostered secularization by crippling religious organizations and undercutting religious socialization. Nevertheless, most post-Communist societies experienced modest religious revivals once repression was lifted (Froese 2001, 2004; Froese and Pfaff 2001).

Finally, secularization may not be a deterministic or one-way process. As stressed by Addison (2019), any given religious organization risks going into decline after reaching maturity unless there is a "rebirth" that leads to renewed growth. Revivals, such as the 2023 Asbury revival, are recurrent events in Christian history and have recently drawn attention from economists. Lowe (2024) studies the Welsh Revival of 1904-05, a two-year period during which roughly 90,000 people converted to Christianity, accounting for around 6% of the Welsh population above the age of 11. This revival built up over several weeks and months, with prayer meetings asking God for a reinvigoration of the believers and for the conversion of non-believers, all against the backdrop of a society in which industrialization had brought massive social change. Lowe shows that while the boost in church membership resulting from the Welsh revival was temporary (around 5 years), lower crime rates persisted, suggesting an enduring shift in social norms.

While the Welsh revival was a grass-roots movement, also government policies can play a role in stimulating religious activity (Iannaccone, Finke, and Stark 1997). Recent work examines how political movements and government policies can foster religious revivals by weakening the institutional foundations of secularization. In the United States, the administration of George W. Bush changed the rules governing the allocation of public funds to benefit religious charities and social service providers, which appears to have stimulated not only the religious organizational sector but also boosted the religiosity of conservative Americans (Bentzen, Pizzigolotto, and Sperling 2025). Ozgen (2023) shows how Islamist movements in Turkey employed a long-term strategy to remake secularized institutions and revive popular religiosity. Rather than overthrow the secular Kemalist state, they awoke a religious resurgence within the shell of secularized institutions by embedding activists in official bodies, converting agencies to their purposes, and substituting religious education and social services for secular ones. In Egypt, Binzel and Carvalho

(2017) use a mix of theory and empirical evidence to argue that the Islamic revival of the 1980s and 1990s was triggered by unfulfilled aspirations relative to expectations that had improved because of earlier economic development. They show that a government policy that increased educational aspirations without meeting demand for better jobs led to more intense forms of religious participation, initially by the educated youth. This Islamic revival reversed earlier trends towards secularization, challenging the once-dominant secularization thesis.

Cross-national research by Karakos and Baskan (2012) suggests a reason why such revivals may succeed. Their multilevel analysis of forty countries find that economic inequality decreases support for objective secularization. People are more likely to oppose the secularization of public offices and support the influence of religious leaders in politics in highly unequal societies, with the effects of inequality being non-linear. The greatest effect of inequality for support for religion in politics is on the poor, who seem to count on religious leaders to advocate for their assistance and protection. Avital Livny's (2020) work on Islamist movements finds that their competitive advantage lies in their ability to activate group-based trust, an important resource in societies plagued by inequality and civic weakness. In those contexts, religious politics offer an appealing alternative to a secular political elite insensitive to popular grievances.

All in all, the proposition that there is a linear progression away from religion toward secularism in public life and institutions seems hard to support. Late in his career, Berger revised his view of secularization, arguing that classical secularization theory seemed to apply only to the wealthiest Western industrial societies. Rather than supporting a story of the progressive and inexorable decline of religion, he argued that the contemporary era remains "an age of exuberant religiosity, much of it in the form of passionate movements with global outreach" (Berger 2002). Berger's claim is an important one because it recognizes that grand narratives of religious change propelled by a modernization master variable cannot be sustained. In fact, religion continues to coexist with many varieties of modernization.

B. Religion and the Need for Social Insurance and Psychological Comfort

One striking example of a "passionate movement with global outreach" has been the rapid spread of Pentecostalism over the last half-century in the developing world. For example, in the 1970s, less than 5% of Africans were affiliated with a Pentecostal church. By the early 2000s, that figure had reached almost 20% (Pew Forum on Religion and Public Life 2006). This has been part of a

broader shift in global Christianity away from Catholicism towards Pentecostalism and related forms of Evangelical Christianity. This is arguably the most remarkable story of recent large-scale conversion; it is sometimes referred to as the "New Reformation" and concentrated in Asia, Latin America, and sub-Saharan Africa (Kobylinski 2017). Following Norris and Inglehart's (2004) theory that economic insecurity drives religiosity, recent papers identify how rising uncertainty in economic prospects has contributed to this shift.

One of the most important economic causes of the rise of Pentecostalism is trade liberalization, which famously involves winners and losers (Pavcnik 2017). In the Kenyan context, Alfonsi et al. (2024) provide evidence that it is the "losers" of economic development who turn towards Pentecostalism. Participants in their experiment were randomly allocated to receive de-worming treatments during their school years, which improved health and economic well-being 20 years later (Hamory et al. 2021). The exogenous increase in long-term income and human capital decreased the likelihood of switching affiliation to a Pentecostal church although it does not increase overall religiosity.

In the context of trade liberalizations in Brazil in the 1990s, Costa, Marcantonio, and Rocha (2023) show that increased exposure to regional tariff reductions led to a rise in Pentecostal affiliations and a greater vote share of candidates connected to Pentecostal churches in national legislative elections. The presence of social assistance institutions offset the effect of the trade shock, suggesting that some of the switching could be attributed to a demand for social insurance.

More generally, social insurance has been shown to play a role in Pentecostal affiliation in several contexts. The idea, consistent with Iannaccone (1992), is that religious "clubs" offer goods that attract members who are willing to take on costly actions (usually, in these cases, in terms of time). Such goods are particularly attractive amidst tough economic conditions. For instance, Buser (2015) finds that poor households who get more income from cash transfers are more likely to be members of Evangelical churches in poor Ecuadorian neighborhoods. Those households—which remain poor—use their additional income to enjoy more benefits from participating in Evangelical churches. In their setting, cash transfers boosted both church attendance and adherence to Evangelicalism. While their data do not permit identification of the exact mechanisms, they speculate that some households use their new-found wealth to gain access to these churches and increase their participation in church services. Kapepula et al. (2022) provide complementary evidence that religion acts as a sort of informal insurance network from a sample of Pentecostal

adherents in urban DRC. The most materially insecure participants in their sample are also the most likely to make high, close to equal splits in a dictator game---a social norm consistent with informal insurance.

While many studies focus on the social club explanation of religious participation and insurance, Auriol et al. (2020) also emphasize that religion could act as insurance by allowing adherents to feel as though they are protected from shocks. In a lab in the field experiment conducted in Ghana, they show that members of a Pentecostal church give less money to their churches after being enrolled in formal insurance, suggesting some degree of substitution between formal insurance and insurance provided by the church. However, members also give less to recipients (a charity and a prayer event) associated with teachings on being a good Christian but not directly linked to their own churches. Their findings suggest that social insurance might be an important mechanism in parallel to what they call "spiritual insurance." Donations to the church and other recipients decline in a way that is consistent with a belief in an interventionist God who needs to intervene less when formal insurance is effective.

It is not solely economic conditions that have contributed to the spread of Pentecostalism in the developing world. Religious entrepreneurs have also actively worked to hasten the speed of conversions. Freeman (2012) emphasized that Pentecostal leaders have shown an entrepreneurial spirit that has been key to their success. Mello and Buccionne (2023) provide causal evidence that Pentecostal leaders use media to increase conversions. They exploit the exogenous placement of television transmitters to show that a media channel broadcasting Pentecostal content is associated with up to 30% of conversions from Catholicism to Pentecostalism. Corbi and Miessi Sanches (2025) provide a theory to explain the success of Pentecostal movements. They develop a model of dynamic entry and present a series of counterfactual analyses to explore the patterns of entry between Catholic and Pentecostal church branches. They show that, in the Brazilian context, the two types of denominations adopt different technologies and that generalized tax exemptions granted to all religious bodies favored the technology adopted by Pentecostal churches—namely smaller churches with lower entry costs but higher fixed costs.

Social insurance acts as a mechanism for increasing religious adherence is not unique to Pentecostalism. In the context of the 19th century US (arguably a developing country!), religious communities were the main source of social assistance, especially in agricultural regions, until the rise of government social spending at the beginning of the 20th century. Ager and Ciccone (2018)

find that places with greater agricultural risk had a greater share of their population organized into religious communities. They propose that the primary mechanism is that religious communities insure each other against idiosyncratic risk, and therefore the demand for belonging to such a community should be higher when the risk is greater. Similarly, though in a very different context, Chen (2010) shows that local economic distress resulting from the 1998 Indonesian financial crisis led to increased participation in communal Koranic studies and attendance at Islamic schools. He found that Indonesian households responded to exchange rate uncertainty by increasing religiosity in a manner consistent with using religion as ex-post insurance. However, this effect is mitigated by access to credit. In yet a different context, Liu et al. (2022) define spiritual insurance as an investment to reduce uncertainty about negative outcomes. They study a large dataset of current account transactions in an unnamed East Asian economy and find that income uncertainty predicts donations to spiritual and religious organizations. Again, the effect is mitigated by access to secular financial services.

Social insurance may increase religious adherence by connecting people to a network of fellow religious believers, but a broader literature suggests that religiosity may also increase as people seek psychological comfort. This is one strand of the religious coping hypothesis which suggests that individuals draw on their religious beliefs and practices as way of coping with adversity (Abu-Raiya and Pargament 2015). For instance, Bentzen (2019) provides evidence from across 96 countries that religiosity is higher in areas more exposed to earthquakes. Amongst other analyses, she shows that this effect persists among children of people who migrated from areas with high earthquake exposure; that it holds for people who are located close to an earthquake without being directly hit by it; and that the effect is concentrated in measures of increased beliefs in God rather than church going. Taken together, this evidence strongly suggests that increased religiosity is associated with a need for psychological coping in the wake of adversity. This hypothesis is tested in a different setting by Cesur, Friedman, and Sabia (2020), who examine how combat exposure affects the religiosity of US servicemen during the Global War on Terror. Cesur et al. (2020) find that exposure to combat increases public and especially private forms of religiosity, as well as increasing demand for counselling services. To the extent that many developing countries continue to be associated with conflict (Verwimp, Justino, and Brück 2019), under-preparedness for natural disasters (Sawada and Takasaki 2017), and greater levels of existential risk (Fritzell et al 2015), the psychological coping channel of religion may continue to be an important one.

In the Islamic world, economic uncertainty has also affected religiosity. Dube, Blumenstock, and Callen (2024) use the intensity of mobile phone activity around Muslim prayer times as a novel proxy for religiosity in Afghanistan. They find that economic shocks measured by rainfall variation are associated with an increase in religiosity. These effects are concentrated in areas that rely most on rain-fed agriculture and are strongest during periods of the agricultural cycle other than the harvest. The pattern of results lends support to the idea that people pray to manage uncertainty before the harvest and as a means of psychological coping after a bad harvest. On the other hand, the authors also show that political violence committed by Islamic insurgents *decreases* religiosity. This provides some nuanced evidence about how the source of uncertainty is important in understanding its impacts on religiosity. In this case, increased threats committed in the name of religion lead to a backlash.

C. Economic Development and the Supply of Religion

We next consider how changing economic conditions affect the supply of religion. One answer is given by Hanson and Xiang (2013), who suggest that public institutions may shape the form of competition between religious institutions. They argue that churches headquartered in the US can be viewed like multinational firms. Both compete in markets—the former for adherents and the latter for goods and services. Hanson and Xiang (2013) develop a model of market competition among religious denominations using a framework that incorporates incomplete contracts and the production of club goods. Like multinational enterprises, denominations choose their countries of operation based on local market conditions and their own "productivity". Their model allows them to estimate how a denomination's religious doctrine and governance structure influence its ability to attract adherents. Using data from the World Christian Database on the foreign operations of US Protestant denominations in 2005, they find that: (1) denominations with stricter religious doctrines attract more adherents in countries where the risk of natural disasters or disease outbreaks is higher and where government health services are weaker, and (2) denominations with decentralized governance structures attract more adherents in countries where the cost for pastors to connect with congregants is lower. These findings illuminate the factors shaping the composition of religion within countries, helping to explain the rise of new Protestant groups.

More generally, evidence suggests that religious institutions are stronger when a society's other institutions are weaker. In a series of papers, Gershman (2016, 2020, 2022) shows how beliefs in

witchcraft are associated with weak formal institutions, low state capacity, and low generalized trust. Witchcraft, defined as a belief in the ability of other people to cause harm using supernatural means, is hypothesized to affect social relations through two main channels: the first is the desire to avoid an attack by a witch, the second is a desire to avoid being labelled a witch. These two channels encourage norms around social conformity and cohesion. Such social norms are more important when formal institutions are less able to maintain order and provide governance. This idea is echoed by Caidedo, Dohmen, and Pondorfer (2023), who show that religion (more broadly defined, and sometimes also including witchcraft) and pro-social preferences are positively correlated across the world. The correlation is strongest in countries with weak formal institutions, suggesting that religion may be used to overcome incentive or information problems associated with weak institutions. Murphy, Nourani, and Lee (2022) provide a direct test of this hypothesis in rural Kenya, a setting with limited institutions for diffusing information about new agricultural technologies (Fabregas, Kremer, and Schilbach 2019). They show that mutual membership in a religious institution increases the likelihood of sharing agricultural information. Information coming from a religious peer is more likely to be rated as trustworthy and of higher quality, characteristics which are often missing in typical agricultural education services and whose lack has impeded the adoption of modern agricultural technologies (Bold et al 2017).

The association between religion and weak institutions suggests that we may expect religion to become less important when stronger, formal, secular institutions emerge as a result of development. However, some recent papers offer more nuance. They highlight that religious elites may adapt religious institutions and promote beliefs to fit flexibly around new secular institutions.

Educational reforms in Indonesia and Pakistan provide two examples of this type of process. In the Indonesian context, Bazzi, Hilmy, and Marx (2024) show how the reach and presence of Islamic schools expanded alongside the introduction of mass public education. They employ a conceptual framework that shows how development increases revenues for both secular and religious providers. This changes the markets where religious or secular providers can enter, leading to more entry overall and stronger curriculum differentiation. This framework helps to explain why primary enrollment shifted towards state schools, but Islamic schools expanded overall to meet increased demand for secondary enrollment. In Pakistan, Malik and Mirza (2022) show how the interests of religious elites affect educational outcomes after a development reform. They use the presence of shrines of historical importance as a proxy for the power of religious

elites and show that literacy grew more slowly in regions with more shrines after a reform that decentralized control of public goods, giving local elites more power. Whereas the reform in Indonesia increased revenues for both the state and the religious elites thereby increasing overall entry, the reform in Pakistan was zero-sum, as elites responded by blocking the effectiveness of education.

D. Religious Beliefs and Development Outcomes

Finally, we turn to the role that religious beliefs play in affecting a host of development outcomes. A small literature has emerged showing how religion can affect several important aspects of development, including the family, health, social preferences, and business investment.

It is not obvious how religious beliefs can coexist with development. Indeed, this seeming contradiction drove much of the early literature on the secularization hypothesis discussed previously. Religious beliefs can be particularly detrimental to development when they are mismatched with the prevailing economic environment. Mismatch can occur not because religious values are inherently inimical to development, but because doctrine was formulated long in the past and was a best response to the prevailing economic, social, and political environments (Giuliano and Nunn 2021). And because religious doctrine is supposed to represent "eternal truths", it is slower to change than other forms of cultural norms (Noonan 2005; Rubin 2011). For instance, restrictions on taking interest were detrimental to commercial development, but in Islam and Christianity they emerged in settings in which most loans were taken by poor farmers for consumption purposes (Rubin 2009). Likewise, early Islamic partnership and inheritance laws were the most progressive of their time when they emerged in the first few Islamic centuries, but over time they became restrictive as new economic opportunities made bigger business feasible (Kuran 2011).

Two recent theoretical papers generate new insights on how religious beliefs may be initially optimal. Nunn and Sanchez de la Sierra (2017) consider the prevalence of spells in the Democratic Republic of Congo that promise to prevent bullets from harming combatants. They show how beliefs in such spells may be individually suboptimal but beneficial at the group level. This occurs if protection spells allow individuals to coordinate on a costly action whose payoffs are increasing in the number of people who take it. Under these circumstances, groups who hold such beliefs will be more successful and the beliefs may then persist at the society level through group competition.

In the context of Eastern DRC, this may explain why groups that believe in the non-falsifiable protection spells fight more and are more successful. Espín-Sánchez, Gil-Guiardo, and Ryan (2024) discuss a related phenomenon, providing an alternative explanation for why incorrect falsifiable beliefs persist. The context they study is Murcia, Spain, where a lack of rainfall has long been an issue for farmers. This generated a demand for "prayers for rain", which the Church happily supplied. Their framework suggests that religious leaders can choose the optimal time to take an action. Potential believers observe the correlation between the action and an outcome. If leaders can time the beginning of the action for a moment when the probability of the outcome is increasing and then continue taking the action until the outcome occurs, believers may be persuaded because they will be less likely to see situations where the outcome is realized without the action taking place. They show that the Catholic church in Murcia began rainfall prayers when the probability of rain was increasing. Further evidence is provided from cross-country data showing that beliefs in praying for rain are strongest in places where the rainfall pattern fits the necessary conditions of the model.

The effects of religious beliefs on development outcomes are far-reaching. Considering that the family is one of the most important institutions for the transmission of beliefs (Bisin and Verdier 2011), it is natural to inquire into the role that religion plays in determining household allocation decisions. A series of papers have shown that religion affects investment in children. Using a series of incentivized experiments, Bayer et al. (2018) show that pregnant Israeli women are willing to give up large amounts of money to avoid receiving furniture for a baby's room before the child is born. This is to avoid violating a superstitious norm that posits that furnishing a baby's room before its birth invites bad luck. These sorts of allocation decisions can have significant impacts on health and welfare of family members as demonstrated in a series of papers from West Africa. Alidou (2021) and Alidou and Verpooten (2019) show how religious beliefs can increase the welfare and standing of young children and old women in West African contexts in which they might otherwise face greater constraints within their households due to their age and gender. For example, in Benin, Alidou (2021) shows that twins receive more parental investments amongst ethnic groups where they are considered as deities. This includes increases in the use of preventative healthcare and does not seem to come at the expense of other children. Across four countries in West Africa, Alidou and Verpooten (2019) document a "menopause dividend" for women in cultures where menopause is associated with a belief of increased supernatural powers.

Post-menopausal woman in these cultures have more autonomy, greater decision power, and a stronger sense of well-being.

Religious beliefs also affect household formation decisions and fertility. Demographers and economists have debated whether this is best explained by the "particularized theolog[ies]" of different religions adopting moral positions on the desirability of children or birth control, or whether it is better explained by spurious associations between sociodemographic characteristics and religious affiliations in particular samples, including differential access to health services such as family planning (McQuillan 2004). Iyer (2002, p. 30) posits that religion affects fertility decisions via three mechanisms. First, the "pure religion effect" hypothesis posits that religions adopt positions on the moral acceptability of birth control and abortion or norms about "desired" family size. Second, the "characteristics" hypothesis attributes differential fertility to socioeconomic differences between religious groups. In particular, the minority status of a religious group might push it toward procreating more to secure its future. Third, discrimination in the form of differential access to services such as health and family planning can indirectly affect fertility outcomes (see Iyer 2002 for the case of India).

While the sociodemographic explanation, which posits that the linkage between religion and demography is spurious, enjoys theoretical and empirical support—for example, Berger and Dasré (2024) find no association between religion and fertility in sub-Saharan Africa after controlling for education—there is some evidence in favour of the particularized theology approach. For example, Bassi and Rasul (2017) apply a framework of economic persuasion (a situation where beliefs are altered by motivated agents) to show how the salience of pro-fertility messages during a papal visit to Brazil in 1991 decreased intentions to use contraception and increased fertility nine months after exposure. Other recent economics papers suggest a third explanation of how religion can be associated with household formation or fertility, through its role in sustaining socially self-reinforcing beliefs about couples or children. For example, Ciscato, Do, and Nguyen (2024) consider the setting of Vietnam where Taoist beliefs determine whether a particular couple is likely to be auspicious. Using a structual model, they show that the auspiciousness of a couple affects how likely they are to get married on a scale that is comparable to the effect of education or age. They then show that auspicious couples receive significantly more transfers from their social circles, especially in times of hardship and that auspicious couples rely on less costly coping strategies such as borrowing from strangers or liquidating assets. Beam and Shrestha (2020) also

explore how the impacts of religion on fertility are framed by the social response to religious beliefs. They document an increase in fertility amongst ethnic Chinese households in Malaysia during years that are considered auspicious. They show that this is accompanied by a decrease in fertility from ethnic Malays during the same years, demonstrating how religious beliefs may have large effects even on groups that do not hold them.

Religious beliefs and practices can likewise affect health outcomes. This has been true historically and in the present day. Historically, one example is the Jewish norm of extended breast-feeding. Botticini et al. (2019) show that this norm led to lower child mortality rates among Jews in Eastern Europe, which ultimately entailed higher Jewish population growth relative to the Christian community after 1500. In contemporary Taiwan, Halla, Liu, and Liu (2021) document that the belief in ghost month—a month where bad luck is more likely—causes people to adopt more risk averse behaviors, leading to fewer elective surgeries, fewer births, and fewer deaths. Births and surgeries are displaced to other months, but deaths drop overall. They estimate that belief in ghost month saves about 300 lives each year in Taiwan.

Traditional beliefs can also be a roadblock to the implementation of important development interventions. For instance, Stoop, Verpooten, and Deconinck (2019) find that voodoo adherence is associated with lower willingness to take up malaria bednets and childhood vaccines in Benin. The authors attribute this to lower trust in conventional medicine. In their setting, mothers who practice voodoo are more likely to seek care from a traditional healer rather than a conventional health worker. This finding is echoed by Sievert (2024), who shows that supernatural beliefs are associated with a lower demand for modern medicine in the Democratic Republic of Congo. Beliefs about the supernatural causes of epilepsy, an illness frequently associated with supernatural causes, can be shifted with an informational video which lays out its biomedical causes and treatments. This intervention increases the willingness to undergo epilepsy screening in a modern health facility.

Ramadan fasting may benefit those who practice it in terms of improved spirituality and social ties (Campante and Yanagizawa-Drott 2015; Hornung, Schwerdt, and Strazzeri 2023) but its unintended consequences provide another example of how religious beliefs may impede development outcomes. During the holy month of Ramadan in the Islamic calendar, adherents are required to abstain from food between sunrise and sunset. Although pregnant women fall in the group of people who are exempt from this requirement, many nevertheless choose to engage in the

ritual, which is one of the five fundamental practices of Islam. This generates variation in whether and when fetuses are exposed to their mother's fasting. Exploiting this variation, several papers have documented long-term effects of in-utero exposure to fasting on subject and cognitive test scores in primary and secondary school (Almond, Mazumder, and van Ewijk Greve 2015; Greve, Schultz-Nielsen and Tekin 2017), probability of employment as an adult (Majid 2015; Greve, Schultz-Nielsen and Tekin 2017), the probability of experiencing disability (especially mental disability) as an adult (Almond and Mazumder 2011), and weight and gender at birth. Jürges (2015) is a notable exception in this literature, finding no effects of Ramadan exposure on gender or birthweight amongst Muslim immigrants in Germany.

The connection between religious beliefs and development outcomes is often mediated via social preferences. These include trust, in-group/out-group biases, and other pro-social norms. Using data from the World Values Survey, Guiso, Sapienza, and Zingales (2003) find that religious beliefs influence attitudes (and thus preferences) towards markets, trust in others, and trust in the government and legal system. Several other studies support the link between religious beliefs and social preferences in specific settings. For instance, Clingingsmith et al. (2009) show that performing the Hajj increases observance of Islamic practices without increasing out-group bias. Muslims who performed the Hajj show higher beliefs in peace, harmony, and equality towards adherents of other religions. Showing a similar broad-based effect of religion on social preferences, Auriol et al. (2021) use a series of trust games to show that religious people in Haiti are both more trusting and trustworthy. This does not depend on the religion of their partners in the experiment. Conversely, participants in lab-in-the field experiments in the Democratic Republic of the Congo behave less pro-socially towards other participants who are known to hold traditional beliefs (Le Rossignol, Lowes, and Nunn 2024). In this study, researchers elicit norms in an incentivized manner and find that all players believe that it is more acceptable to be less prosocial to people holding traditional beliefs. Further research should probe the interesting contrast between positive social preferences being associated with world religions, whereas negative social preferences are associated with traditional religions.

Finally, and perhaps surprisingly, religious beliefs have large beneficial effects on financial and business outcomes. Perhaps nowhere is this clearer than in the Islamic banking sector where the sometimes-simultaneous offer of products compliant with Sharia law alongside conventional products helps to disentangle which aspects of religion are important for household financial

behavior. In one study of this increasingly important part of world finance, Baele, Farooq, and Ongena (2014) analyze the universe of outstanding loans in Pakistan between 2006 and 2008. They show that the default rate on Islamic loans is half the default rate on conventional loans. They establish this result with a rich dataset that allows them to control for a wide range of loan, borrower, and bank characteristics. In particular, they include borrower-bank fixed effects, mitigating the concern that differences in default rates are driven by the types of borrowers or the types of banks that offer Islamic versus conventional loans. This effect may obtain because Islamic loans are likely to signal moral obligations. Bursztyn et al (2019) conduct an experiment amongst holders of credit cards issued by a large bank in Indonesia. Their main treatment randomizes whether borrowers who have missed a payment receive a message with a quote from the Quran emphasizing the moral consequences of non-repayment. Treated participants are 4.4 percentage points more likely to make a payment. Through a series of additional experimental arms and surveys, the authors show that while moral content divorced from religious messages also impacts repayment, they are unable to rule out that morality matters precisely because people are on average quite religious in Indonesia. Religiosity, and its association with approval from moral leaders, is more clearly at play in Ahmad et al (2023) who find that religious sanctioning leads to a large and more straightforward increase in the uptake of savings products in Pakistan. Previously unbanked women who received a package of subsidies, administrative assistance, and messages emphasizing the benefits of savings products and their compatibility with the Quran along with supporting quotations from the Quran were almost 45 percentage points more likely to open an account compared to women who received the same package of support and information, without the quotations from the Quran.

Religion plays a role in business outcomes well outside the banking sector by affecting how decision makers allocate productive resources. In China, Fisman et al. (2023) show that investors are more likely to prefer low-risk investments in a zodiac year associated with bad luck. Corporations are also less likely to take risk during their chairman's zodiac year. During such years, corporations invest in less research and development and make fewer corporate acquisitions. Montero and Yang (2022) show that household incomes are lower when agricultural planting seasons in Mexico coincide with religious festivals, likely due to households substituting labour away from agriculture and toward religious participation. In the Philippines, Bryan et al. (2021) run a randomized controlled trial to study the effects of religion and religiosity on economic

outcomes. They find that, after six months of receiving a Protestant-outreach program, participants reported higher levels of religiosity. They also reported higher incomes, although this was accompanied by lower perceived economic status. After 30 months, participants were not more religious but where more likely to be affiliated with a Protestant church rather than a Catholic one. A subset of participants also maintained the improvements in income and perceived status was also higher, although these long-term results were more mixed. Butinda et al. (2024) likewise use researcher-led randomization to study the effects of religion in the Democratic Republic of the Congo. They randomize the timing of a magical ritual and show that beer sellers who receive a protective ritual feel more protected and keep more beer in stock, which increases revenue and profits. The effect is only present amongst beer sellers who believe in the protective ritual.

In sum, this growing literature shows that religion impacts a wide range of development outcomes in complex ways. In some cases, religious practices and beliefs present obstacles to development, while in others they facilitate improved outcomes. Oftentimes, as illustrated by our discussion of the effects of Ramadan fasting, the very same practice can have diverging effects. This collection of effects does not tell us whether religion is good or bad for development, and perhaps that is not the interesting question. Rather, it points to the fact that religion—despite seeming incompatible with some ideas of development—is *important* for development, and future research will continue to explore why and how.

V. The Future: The Next Generation of Studies on Religion and Development

We conclude with two questions. First, does religion have a future? Second, what are the most fruitful research topics in the area of religion and development for future social scientists to analyze?

A. The Future of Religion

The decline, or even death, of religion has been predicted for centuries. Old Testament prophet Elijah (ca. 900 BCE) lamented: “I have been very jealous for the Lord God of hosts; for the children of Israel have forsaken Thy covenant, thrown down Thine altars, and slain Thy prophets with the sword. And I, even I only, am left; and they seek my life, to take it away” (Bible 1 Kings 19:10).

The Protestant Reformation happened against the backdrop of a Catholic Church that barely had any influence on the hearts and minds of the population, at least in Northern Europe, where Christianity had arrived centuries after it first spread throughout the Roman Empire (Becker and Voth 2024). Even the Protestant reformers failed to make much of an impact, as Parker (1992) observed: "the surviving evidence indicates a widespread inability [. . .] to create an acceptably pious laity." Church visitations, established to enforce religious doctrine, repeatedly revealed pastors preaching to empty pews, clergy unfamiliar with basic tenets of the faith, and widespread ignorance of church teachings among the general congregation (Strauss 1975). Martin Luther himself lamented: "Dear God help us, what misery have I seen! The common man, especially in the villages, knows absolutely nothing about Christian doctrine; indeed, many pastors are in effect unfit and incompetent to teach. Yet they are all called Christians, are baptized, and enjoy the holy sacraments even though they cannot recite either the Lord's Prayer, the Creed or Commandments. They live just like animals ..." (Parker 1992)

Marx (1844, p.72) called religion "the opium of the people" and predicted that once material conditions for the working class were improved, religion would lose its function as opium for the oppressed masses. Nietzsche, most well-known for his line "God is dead" (Nietzsche [1882] (1974) p. 108), thought that "the belief in the Christian God has become unbelievable", everything that was "built upon this faith, propped up by it, grown into it," including "the whole of our European morality", is destined for "collapse" (Nietzsche [1882] (1974) p. 343).

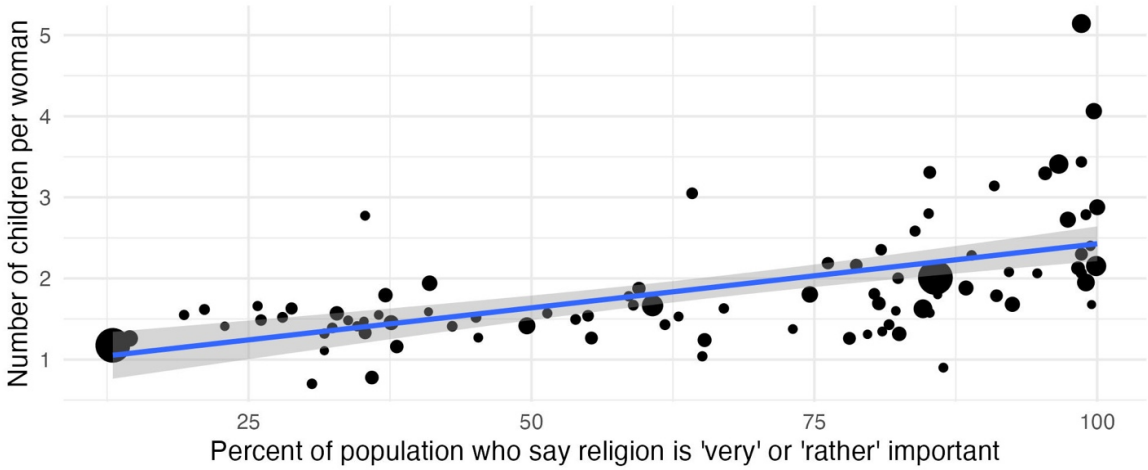
Many of these predictions contain flavors of the secularization hypothesis (see Section III, Part A). Yet, as the rich bodies of work we have covered in this chapter show, religion has outlived previous predictions of its decline and we highlight four patterns that suggest that it will continue to do so.

The first comes from the psychological need for religion. Stark and Bainbridge (1980) and Smith (2017) argue that religion meets a basic human need for meaning and purpose and is therefore unlikely to disappear. According to their arguments, as long as humans seek answers to fundamental questions about existence and purpose, they will eventually rest on answers with a supernatural claim. In fact, the modern psychology literature emphasizes that humans in general have important spiritual needs from an early age (Papaleontiou-Louca, Esmailnia, and Thoma 2023; that religious thinking comes naturally to children (Bloom 2007) and that religious beliefs may have evolved naturally as a response to human needs to coordinate in large-scale societies

(Norenzayan 2013). Papers cited in this chapter such as Bentzen (2019) or Costa, Marcantonio, and Rocha (2023) bring an economic perspective and empirical evidence to support these claims, showing that religion is a response to existential disasters whether natural or manmade through policy choices. The vitality of religious beliefs attests to a basic human need which is likely to support religion for centuries to come.

Another argument is a simple demographic one. Demographic patterns have historically been important for the spread of religion. For example, Seabright (2024) argues that the perceived "triumph" of Islam over Christianity in the 20th century was largely due to the fact that Islam was concentrated in areas with high fertility around the turn of the century while Christianity was concentrated in areas with low fertility. He suggests that the appropriate comparison of the success of the two religions over the intervening years should be a comparison of where they would have been given the starting fertility positions of their adherents. Turning to the present, we find that places in the world that are more religious are also growing the fastest. Figure 4 plots World Values Survey data of religiosity against fertility rates for 90 countries across the world. The correlation coefficient is 0.56 with a p-value < 0.001. Even if the OECD countries were to become substantially less religious in coming decades, the world's population would probably not.

Figure 4: Importance of religion and fertility



Note: Importance of religion against fertility for 90 countries appearing in the World Values Survey Wave 7(2017-2022). The size of each point reflects the country's populatation. The importance of religion variable is constructed as the percent of the sample in the WVS Wave 7 who indicate that religion is 'very' or 'rather' impotant in their lives. Fertility data from the World Bank World Development Indicators database.

A third reason that religion is likely to remain important is that religious institutions have proven to be remarkably adaptive. We have highlighted several instances of this throughout this chapter and here reflect on two others. The first is the role of religious syncretism or the "the simultaneous use of incompatible belief systems" (Gellner 1974, as cited in Barro and McCleary 2024). We know that religious change occurs alongside a great deal of cultural drift and syncretism, as newcomers and established religions alike alter their doctrines, values, and practices through adaptation, layering, and reinvention (Hinde 2009). Syncretism has been invoked to describe phenomena as diverse as the development of Pentecostal forms of Christianity that adapt the religion to adherents' realities in Africa and Latin America (Robbins 2004) or the continued existence of beliefs in elves in Iceland (where they determine road planning), one of the otherwise most secular nations (Stark 2023). Such flexibility suggests that even if future economic developments make new types of beliefs more optimal, the new beliefs are still likely to be compatible with religion (Stark and Bainbridge 1985). The second is that social upheavals have been linked with religious revivals—concentrated periods of rapid increases in religious activities, and revivals have been linked to long-lasting changes in norms. This argument is empirically demonstrated in Lowe (2024), who shows that the Welsh revival of 1904-1905 was concentrated in areas with high crime rates, and despite religiosity levels falling to their pre-revival levels, drops in crime rates persisted at least two years after the revival. This association between crisis and revival suggests an important way that religions may continue to yield influence.

A fourth reason religion will be important in the foreseeable future is the persistence of religion through culture and institutions. In Section II we showed how religion influenced historical changes in institutions that continue to have an impact today, while in section III we highlighted several instances of religions actively shaping institutions today. Joining these two perspectives highlights an important perspective for the future.

B. The Future of Research on Religion and Development

Our survey has followed much of the literature in putting an emphasis on organized world religions. However, an interesting and important direction for future work will be to explore connections between economic beliefs and other types of religion. Stark, Hamberg, and Miller (2005) provide a useful typology of religious beliefs and behaviour: "Religion consists of explanations of existence based on supernatural…forces or entities which are beyond nature…and

which can suspend, alter, or ignore physical forces." In this typology, "gods are a particular form of the supernatural consisting of conscious supernatural beings." Therefore, it is possible to have godless religions and much of what has been referred to as witchcraft or superstition in the literature could rightly be referred to as religion. As some of the papers we have surveyed show, beliefs that go beyond world religions impact economic outcomes, and there is still much more work to be done to measure, understand, and theorize on them.

A second gap pertains to contemporary studies exploring the supply and organization of religion. Much of the literature tackles questions about how economic conditions shape the demand for religion or how religious beliefs affect economic outcomes. Less has been done to understand religion as an occupational choice and how the incentives unique to religion might change the types of people who are attracted to that choice and the ways they may organize their institutions. Some striking figures suggest that there are several interesting economics questions to be asked on this topic. For example, the anthropologist Lauterbach (2010) suggests that becoming a pastor is one of the highest job aspirations amongst Ghanaian youth, especially those who have a strong entrepreneurial bent. While foundational models such as the club goods model of religion or newer ideas such as the platform model (Seabright 2024) provide rich descriptions and insights into how religions are organized, it will be interesting to see more empirical work exploring how the people making organizational choices shape the practices and produce outcomes that we see.

Finally, an exciting direction to answer these questions are the many new forms of data that make it possible to answer old and new questions in novel ways. One exciting development is the use of mobile phone data to measure religiosity. Dube, Blumenstock, and Callen (2024) use the timing of mobile phone activity to measure religiosity amongst Muslims in Afghanistan. Their measure relies on the fact that Islam has five fixed, communal moments of prayer in the day. These prayers are one of the pillars of Islamic faith. The authors use mobile phone activity during the evening prayer as a proxy for religiosity. They corroborate this measure at the individual level through surveys linked to mobile data and at the national level by correlating phone activity with other characteristics—such as Taliban control—that are expected to correlate with religiosity. They go on to show how increases in religiosity are associated with adverse climatic conditions. They are able to show this on a finer scale than would be possible without mobile data and in a context where survey data is otherwise difficult to collect. Pope (2024) uses mobile data in a

different way to bring new evidence to questions of secularization and religious participation in the US. He uses geodata from smartphones to track presence at religious places of worship. He provides a rich description of the frequency and patterns of religious attendance. One of the most striking findings is that weekly attendance is about a quarter of that reported in surveys. His findings highlight one of the major benefits of using such "incidental" data to measure religiosity—they are significantly less prone to demand or presentation effects than survey measures. Overall, mobile phone data demonstrate the promise of measuring religiosity at scales and across geographic scopes, and possibly in more ecologically valid ways than surveys.

Of course, there are also still a lot of gaps in our understanding of the link between religion and development in history. The digitization revolution and advancements in computational linguistics have created new opportunities to use text as data (Gentzkow et al., 2019), offering significant potential for historical research. Given the scarcity of historical censuses and the near absence of census-type data before 1800, researchers have often relied on city-level data, as cities were more likely to have the infrastructure to collect such information earlier. Written records have long been central to research in economic history, including studies on religion, but using text as data could mark the next major advancement in systematically exploring these records. Archaeological data also promises to open new avenues to study religion and development in history (Matranga and Pascali 2021).

Neither is religion going to disappear any time soon, nor will researchers run out of important research questions that require answers. Religion was, is, and will remain one important factor to understand economic development.

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