

Emmanuelle Auriol, Julie Lassebie, Amma Panin, Eva Raiber, Paul Seabright

The Big Picture

What has happened to religion in the world?

How do religions compete?

A platform model

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Summing up

Understanding religious organizations as competing platforms:

What has happened to religion in the world since the Second World War?

Emmanuelle Auriol^{1,2} Julie Lassebie³ Amma Panin^{4,5} Eva Raiber^{1,2} Paul Seabright^{1,2}

 $^1\mathrm{Toulouse}$ School of Economics, $^2\mathrm{Institute}$ for Advanced Study in Toulouse $^3\mathrm{OECD},\,^4\mathrm{Nuffield}$ College, University of Oxford, $^5\mathrm{World}$ Bank.

November 13, 2019



At the Assemblies of God in Accra, Ghana

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Worshippers thronging to place offerings in the collection at a Revival week service of the Assemblies of God in Accra, Ghana

Shortly after this the choir sang hymn whose refrain was:

I had a debt I could not pay He paid a debt he did not owe I needed someone To wash my sins away



From the *Financial Times*, 6th February 2019:

Opinion Catholic Church

Pope Francis fights a losing battle in the Middle East

The mass flight of Christians from the region continues unchecked

DAVID GARDNER



Pope Francis in Abu Dhabi. The visit was another step in the perennial but glacial institutional rapprochement between Christianity and Islam © AFP

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- Christianity is in retreat;
 - Islam is on the rise;
 - Violent struggle is replacing peaceful proselytism as the main engine of religious competition.

To read the press, you would think that in today's world:

- The truth is interestingly different:
 - Both Christianity and Islam are on the advance in today's world;
 - Peaceful proselytism and demographic growth have largely replaced violent struggle as the main engines of religious competition.
 - Religion is increasingly becoming corporatized and branded, pushing out local and folk religions across the world.
- There is a lot to learn about *how* this process is occurring, and how it interacts with issues of identity.
- Identity is increasingly for sale in the modern world.

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Outline

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- Amma Panin, Eva Raiber, Paul Seabright

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Changes in the shares of the major world religions from 1950 to 2015:

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- Some big changes in the shares of world religions since 1950 (a similar story since 1900).
- But it's not what you think....
- To get a clue as to why, look at the distribution across regions.



The changing proportions of world religions (source: World Religion Database)

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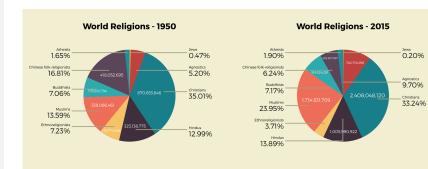
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The changing proportions of religions in Asia

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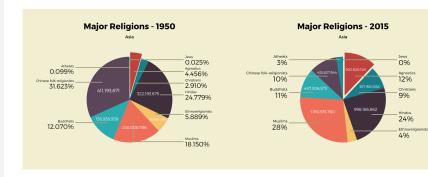
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The changing proportions of religions in Africa

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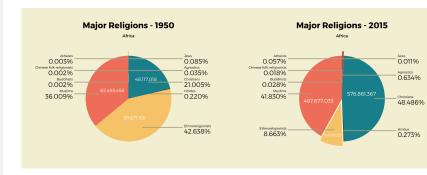
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The importance of demographics

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- The different rates of population growth in different countries since 1950 would have had major effects on the shares of world religions even without any other factors.
- Compare actual shares in 2015 with the shares that would have been predicted on the basis of different country rates of population growth.
- The predicted shares are those that describe what would have happened in the absence of any within-country competition between religions.
- The difference between predicted and actual shares is a measure of the impact of within-country competition.



Global shares of religious adherents, actual versus predicted from 1950 shares

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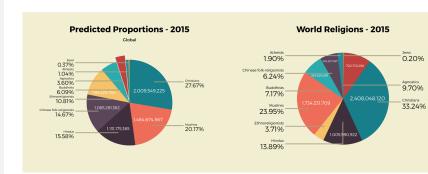
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What's the story here?

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- The story is not about an ideological struggle between Christianity and Islam, with Islam winning.
- Islam has expanded faster than Christianity because more concentrated in poor parts of Asia with high population growth.
- The story is about the growing corporatization of religion.
- Folk religions everywhere in Asia and especially in Africa have been replaced by their branded and corporately-organized counterparts, some of which are also franchised.
- Catholicism has declined in favor of other Christian denominations.
- But overall, Christianity has benefited more from this trend than Islam, and may do so even more in the future (watch China!).
- Corporatization is also associated with high levels of reported religious commitment.



The contrast between trends in Europe and sub-Saharan Africa

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How important is religion in your life?



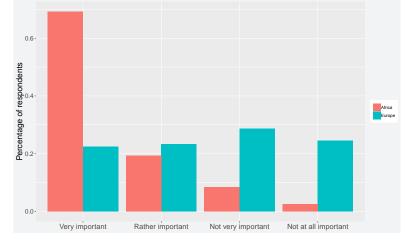
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World Values Survey Wave 6: 2010 - 2014



How do religions compete?

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- Historically, in three main ways:
 - Through war and conquest.
 - Through differential population growth (competition for resources).
 - Through persuasion ("in the market").
- The growth in the extent and sophistication of the third mechanism is the outstanding religious fact of the 20th and 21st centuries.



The new economics of religion:

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- Since the early 1990s, a growing convergence between rational-choice sociologists of religion (like Finke and Stark) and economists (lannacone, Gruber) that religions compete to satisfy demands.
- Some contributors take demands as given:
 - Some are intrinsic to religion.
 - Some are also supplied by other institutions (eg finance, insurance).
- Others suppose religion satisfies a derived demand for institutions to reinforce social trust.
- Some emphasize moral hazard aspects (cf Big Gods), others adverse selection



The services provided by religion:

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- One line of research sees churches as private clubs that provide exclusive services to members, screened by high financial and behavioral costs of membership (lannaccone, JPE 1992).
- Recent work has described religious institutions as helping to smooth consumption, particularly in the absence of an extensive welfare system (Scheve-Stasavage, 2006; Gruber-Hungerman, 2007; Dehejia et al.; Chen, JPE 2009).
- In some countries (eg India, see lyer, Harvard UP 2018)
 religions have greatly expanded the services they provide.
- However:
 - Costs of membership seem high vs. secular alternatives.
 - Profits can be large, but entry barriers seem low.
- Our view: Churches charge high prices from members because they operate as *platforms*, offering bundles of services for which trustworthiness of other members is important.



Our Approach (I)

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- When religions offer services they are never just selling these services in head-to-head competition with secular suppliers.
- Literature on multi-sided markets has emphasized role of platforms as putting different groups in contact with each other.
- It's possible to see religious organizations as putting believers in touch with each other, using demand for certain services of religion as credible signals of their trustworthiness.
- Importantly, these services are neither just spiritual, nor just secular. They're both.
- Those who genuinely demand spiritual services are considered more trustworthy counterparties in secular markets.



Religious entrepreneur Jerry Falwell:

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"Business is usually on the cutting edge of innovation and change because of its quest for finances. Therefore the church would be wise to look at business for a prediction of future innovation. The greatest innovation in the last twenty years is the development of the giant shopping centers. Here is the synergetic principle of placing at least two or more services at one location to attract the customers. A combination of services of two large customers with small supporting stores has been the secret of the success of shopping centers" (cited in Harding, Susan Friend: *The Book of Jerry Falwell: Fundamentalist Language and Politics*, Princeton University Press, 2000.)



Services provided by church in our Ghana study (536/570 fairly complete responses):

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Finding a marital partner:

- Only 5% of respondents say that finding a partner, for themselves or their children, is one of main reasons for attending their church.....BUT
- 28% of married say they found their spouse through church.
- 48% of church population are single, o/w 60% expect to meet their future spouse through church.
 - 57% of single males expecting to meet a spouse in church pay tithes vs only 26% of those not expecting this.
 - No significant difference for single women (38% versus 37%).
 - 53% of single males expecting to meet a spouse in church cite moral guidance as a main motive vs only 41% of those not expecting this (55% versus 41% for single females).



Services provided by church (II):

Emmanuelle Auriol, Julie Lassebie, Amma Panin, Eva Raiber.

Paul Seabright

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Providing counselling for family issues:

- 62% would ask a pastor for help regarding family issues, 25% would ask another church member (multiple answers possible).
- Only 20% say they would ask a pastor for financial help, and 8% would ask another church member....BUT
- 24% report receiving financial assistance from the church within the last 2 years.
- 28% would seek medical support from pastor when sick.
- Reported church donations significantly increase with income, education, church attendance and age.

It seems likely that the motives are linked: members prefer to search for a marital partner among those who signal their willingness to seek church guidance on family and spiritual issues.



Respondents preferring to interact with church members as friends, at work, in business:

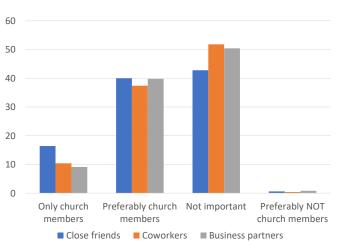


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Our Approach (II)

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- Religious organizations are platforms: value of services offered to members depends on characteristics of other members.
- These include not just numbers but also quality.
- High prices can increase quality of members a screening mechanism.
- In traditional platform literature, platforms charge low prices to some users to "get them on board".
- We show that effect of high prices on user quality can outweigh adverse impact on quantity if services are sufficiently non-rival.
- More precisely, religious adherents pay high prices for two reasons:
 - the high price screens high-quality adherents.
 - the high price reflects, for any given adherent quality, an enhanced willingness to pay to interact with other users.



A simple model of a two-sided platform with quality screening

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A platform supplies two services, A and B, at prices p_A and p_B .

- Service B consists in having access to users of service A.
- Both are also supplied by a competitive market at a constant outside value normalized to zero.
- Platform can invest in quality q_A of service A at convex cost $C(q_A)$.
- Continuum of potential users i and j of services A and B, of types θ_i and ϕ_i , with a uniform distribution normalized to [0, 1] and [0, M].
- Users i derive gross utility $\theta_i.q_A$ from consuming service A and users j derive gross utility $\phi_i.q_B$ from consuming service B.
- n^* and m^* are equilbrium numbers of purchasers of A and B.
- Thus $n^* = \frac{q_A p_A}{q_A}$ and $m^* = \frac{M(q_B p_B)}{q_B}$.



How is quality of service determined?

Emmanuelle Auriol, Julie Lassebie, Amma Panin, Eva Raiber, Paul Seabright

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• Average quality θ^* of users of A is determined by $\theta^* = 1 - \frac{n^*}{2}$.

• If there is rationing (one-to-one matching), probability that user j can match with a user i is given by $\frac{n^*}{m^*}$.

• Without rationing, overall expected quality of the service B is $\theta^* = \frac{(2-n^*)}{2}$, which yields $m^* = \frac{Mn^*(2-n^*-2p_B)}{(2-n^*)}$.

• With rationing, overall expected quality of the service B is $\theta^*(\frac{n^*}{m^*}) = \frac{n^*(2-n^*)}{2m^*}$, which yields $m^* = \frac{Mn^*(2-n^*)}{n^*(2-n^*)+2p_B}$.

• Without rationing, differentiating yields $\frac{\partial m^*}{\partial n^*} = \frac{-2Mp_B}{[2-n^*]^2} < 0$.

• With rationing, differentiating yields $\frac{\partial m^*}{\partial n^*} = \frac{4Mp_B(1-n^*)}{[n^*(2-n^*)+2p_B]^2} > 0$.

 The interpretation: if the quality of members is non-rival, raising prices raises the attractiveness of the platform by increasing quality of members. If it is strictly rival, raising prices reduces attractiveness of the platform by reducing their numbers.



Determinants of pricing

Platform chooses p_A , p_B and q_A to maximize:

$$\Pi = n^*[p_A - C(q_A)] + p_B.m^*$$

First Order Conditions:

$$\frac{\partial \Pi}{\partial p_B} = m^* + \frac{\partial m^*}{\partial p_B}$$

and

$$\frac{\partial \Pi}{\partial p_A} = n^* + \frac{\partial n^*}{\partial p_A} [p_A - C(q_A) + p_B \frac{\partial m^*}{\partial n^*}]$$

Note that p_A will be higher than without the two-sided effect if member quality is non-rival, and lower if it is rival.

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What does this model show us?

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- In equilibrium, both kinds of service can be priced by the platform higher than the competitive market alternative.
- The ability to price service A high comes from the fact that it serves to screen users for quality and thereby attract users on the other side of the platform who care about the quality of those with whom they interact, provided quality is (at least to some extent) non-rival.
- The ability to price service B high comes from the fact that it serves to provide users with access to high-quality users on the other side of the platform.
- Many religious adherents pay high prices for both reasons:
 - the high price screens high-quality adherents.
 - the high price reflects, for any given adherent quality, an enhanced willingness to pay to interact with other users.



Effect of p_A on profits without platform effects: low price

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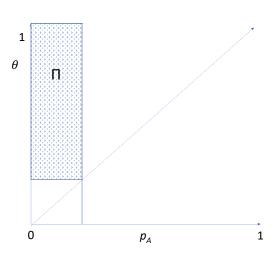
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Effect of p_A on profits without platform effects: mid price

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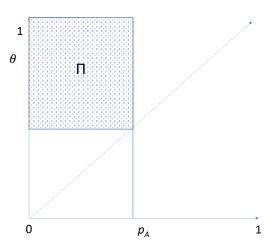
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Effect of p_A on profits without platform effects: high price

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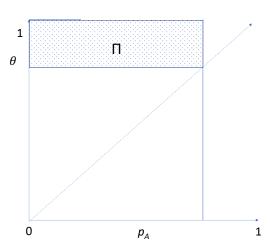
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Choosing p_A to maximize profits without platform effects

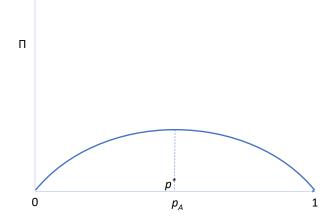
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Additional profits from service B users as a function of p_A

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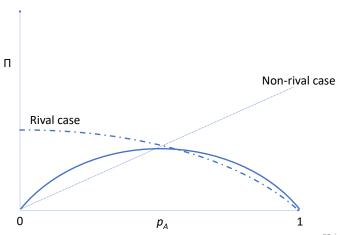
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Choosing p_A with platform effects - Rival case

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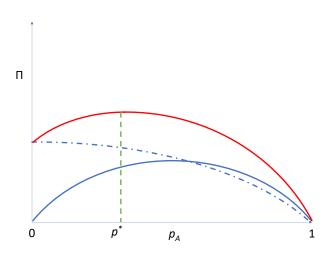
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Choosing p_A with platform effects - Non-rival case

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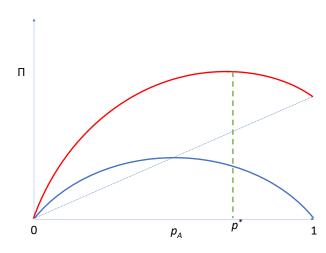
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Choosing p_A with platform effects - the cases compared

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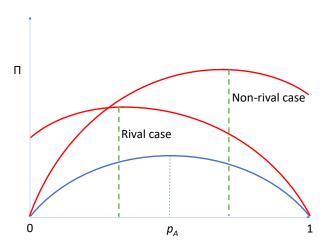
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Applications of the platform model

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- The platform competition framework is flexible: the business models of platforms can be very varied (for instance depending on whether the quality of members is a rival or a non-rival good).
- Our reference to Pentecostalism is illustrative, not definitive: many religious organizations have more targeted messages, and the provision of other services is often more implicit.
- However, elements of platform competition seem to characterize the provision of health, education and other such services in Christian, Muslim and Buddhist traditions.
- In practice, many religious organizations practise complex multi-dimensional pricing, involving not just financial costs but also "lifestyle" costs. This enables them to engage in more targeted price discrimination than we have modeled here.



Our experimental findings: on secular services

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- With Emmanuelle Auriol, Julie Lassebie, Eva Raiber and Amma Serwaah-Panin in Ghana, we offer subjects the chance to participate in a dictator game in which they can choose to keep money or to give it to their church or to general religious charities or general secular charities.
- We have a treatment in which we provided free funeral insurance.
- We show that participants in the treated group gave less money to their church, compared to a control group that had just been told about the insurance.
- They also gave less to secular charities, suggesting that the insurance they had been implicitly relying on works in the eyes of God rather than via a contract with the church.



Our experimental findings on screening for character

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- With Emmanuelle Auriol, Maleke Fourati, Diego Delissaint and Josepa Miguel-Florensa, we show in a 774-subject experiment in Haiti that more religious people are more trustworthy than others.
- We measure religiosity by willingness to purchase religious images to accompany play in the game.
- Effect sizes are large: between 14% and 21% of mean behavior.
- They don't reciprocate more after priming than before, nor more to members of the same denomination.
- Our measures of degree of religiosity in the lab correlate with intuitive measures of religiosity outside the lab.
- Our measures of degree of religiosity also correlate with participation in lending and (especially) borrowing behavior outside the lab - suggesting the trustworthiness associated with religiosity has economic payoffs.



Coming back to platforms...

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- Our more religious Haitian subjects are more attractive as economic partners because they have other motives for religion than finding economic partners.
- The same is true for our Ghanaian religious subjects who are more attractive as marital partners.
- It's characteristic of religions as platforms that they can charge high prices for bring together people who have other motives than merely being brought together.
- And other things that look like high costs may not be so high after all.



Conclusions

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- The big story of the 20th and 21st centuries is not about an ideological struggle between Christianity and Islam.
- It's about the growing corporatization of religious life, with folk religions everywhere being displaced by organized versions of the two main world brands.
- The way to understand this competition is through noting that, when they compete in the market, religions function as platforms.
- Platform competition is typically modular, flexible and very adaptable.



Thanks to:

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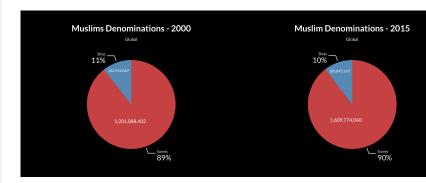
- My co-authors:
 - Emmanuelle Auriol
 - Julie Lassébie
 - Eva Raiber
 - Amma Serwaah-Panin
- You for listening...



Now look at the changes within religions...



The changing proportions of Muslim denominations



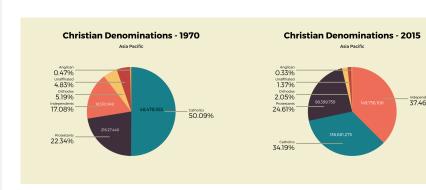


The changing proportions of Christian denominations



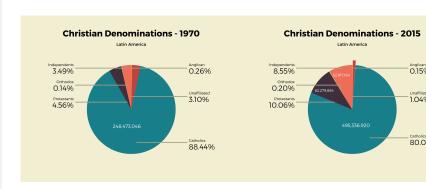


The changing proportions of Christian denominations in Asia



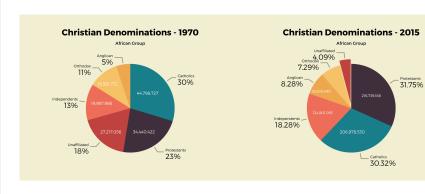


The changing proportions of Christian denominations in Latin America





The changing proportions of Christian denominations in Africa







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"Today, Christianity is living through a reformation that will prove to be even more basic and more sweeping than the one that shook Europe during the sixteenth century. That earlier reformation...was confined to one small corner of the globe...The current reformation, however, is an earth-circling one. [It] is shaking foundations more dramatically than its sixteenth-century predecessor, and its results will be more far-reaching and radical."

Harvey Cox, Preface to Global Pentecostal and Charismatic Healing, 2011