



An empirical note on entrepreneurial activity, intrinsic religiosity and economic growth

Craig S. Galbraith and Devon M. Galbraith

*Cameron School of Business, University of North Carolina Wilmington,
Wilmington, North Carolina, USA*

Abstract

Purpose – The purpose of this paper is to examine and test the relationship and interaction between “intrinsic” religiosity, entrepreneurial activity, and economic growth.

Design/methodology/approach – The paper selects 23 countries that are predominately Christian and examine the connection between country-wide religious orientation, entrepreneurial activity, and economic growth. It specifically examines “intrinsic” religiosity, and defines entrepreneurial activity as either total start-up entrepreneurial activity or opportunity-based entrepreneurial activity. It is hypothesized that there is a direct relationship between religious attitudes and both economic growth and entrepreneurial activity, with entrepreneurial activity also acting as an intervening variable. The empirical relationship between “intrinsic” religiosity, entrepreneurial activity, and economic growth is then examined.

Findings – The findings suggest that while “intrinsic” religiosity is positively related to economic growth, the key relationship may be between “intrinsic” religiosity and entrepreneurial activity, with entrepreneurial activity then resulting in economic growth.

Originality/value – By examining the diverse literatures of economic development, entrepreneurship, theology, and the psychology of religion, this paper offers a unique analysis of religious attitudes and their impact on entrepreneurial activity and economic growth. Both the conceptual discussion and the empirical results extend previous studies examining cultural approaches to understanding economic growth.

Keywords Religious, Entrepreneurship, Economic growth

Paper type Research paper

Background

Examination of the relationship between religious belief, entrepreneurial activity, and economic development has gained in popularity in the last five years. This interest is evident in several different streams of literature.

Recently a number of papers have appeared in the economics literature that examine whether or not religious beliefs appear to contribute to sustainable economic development. A prevalent theme in this evolving literature is that there are other factors beyond the traditional economic variables, such as interest rates, trade balances, and money supply, that can be used to predict country-specific economic success (Barro and Sala-i-Martin, 2004; McCleary and Barro, 2006a). These non-traditional economic factors include a variety of social, cultural, and political forces (Landes, 1999; Inglehard and Baker, 2000; Guiso *et al.*, 2003; Barro, 2003). Many of the empirical studies that are emerging within this literature capture these cultural and attitudinal factors utilizing the World Values Survey (WVS) or the International Social Survey Programme. These surveys, and others such as 1999 Gallup culture



survey, provide broad periodic, in-depth sampling of individuals in various countries regarding a variety of dimensions related to culture, attitudes and beliefs. A number of items related to religious belief, religious service attendance, and importance of religion in one's life are also included in these surveys. When analyzing these religious and belief factors against various measures of economic success, such as GDP growth, some common conclusions have emerged across the literature.

First, it appears that religious belief is, in fact, empirically related to country-specific economic success (Barro, 2003; Guiso *et al.*, 2003; McCleary and Barro, 2006b). The research indicates that countries with a higher percentage of religious individuals generally outperform those countries with a smaller religious percentage, or as Barro (2003, p. 1) notes, "we find that economic growth responds positively to the extent of religious beliefs." Similarly, Guiso *et al.* (2003) found that, "religious beliefs are associated with 'good' economic attitudes, where 'good' is defined as conducive to higher per capita income and growth" (2002, p. 1).

Second, it appears that, on the average, religious beliefs are positively related to other socio-economic measures that may also contribute to economic growth, such as education, self-esteem, family unit, and life-expectancy (McCleary and Barro, 2006a).

Third, when compared to other major religious traditions, Christianity is the most highly correlated with both actual economic success and attitudes that lead to economic success, while most other traditions have less, albeit still a significantly positive impact on economic success (Barro, 2003; Guiso *et al.*, 2003).

Finally, unlike religious beliefs (which is positively related to economic success), it appears that frequent formal church attendance may actually have a small, but negative effect on economic growth. The commonly cited reasoning behind this finding regarding church attendance tends to focus on the diversion of resources from investment vehicles that fuel economic growth to supporting the church institutions (Barro and McCleary, 2003). It should be noted, however, that this conclusion is somewhat misleading, since there is clear evidence that a large percentage of donations to church institutions are used for broader charitable and capital transfer purposes (Brooks, 2006). These donations, in turn, result in:

- large inter-country aid efforts such as orphanages and schools;
- targeted economic development efforts such as micro-loans in chronically poor countries (Van de Ruit, 2001; Dana and Galbraith, 2006); and
- the increased development of social capital and networks among both established ethnic enclaves (Candland, 2000) and more recently arrived immigrants (Martes and Rodriguez, 2004; Galbraith *et al.*, 2004). Thus, the complex calculus between frequent church attendance and economic growth likely remains unascertained. In fact, it is possible that frequent church attendance, particularly within developed countries, while negatively related to within-country economic growth, may also be positively related to within-country poor population support and economic growth in other poor countries through increased NGO activities and charitable aid programs.

Another line of research falls within the developmental entrepreneurship literature, particularly the Global Entrepreneurship Monitor (GEM) program. The GEM program measures various components of entrepreneurial activity in over 40 countries. Research studies using the GEM data base consistently find a relationship between

entrepreneurial activity and a country's economic base. In general, the GEM studies have found a "U-shaped" relationship between early-stage entrepreneurial activity and economic development (GEM, 2004, 2006). Low per capita GDP countries tend to have significant early-stage entrepreneurial activity, while developed countries such as the European Union and Japan have less early-stage entrepreneurial activity. However, countries with the highest level of per capita GDP such as the USA and Norway, show, "increasing early-stage entrepreneurial activity suggesting a new increase in opportunity related entrepreneurship" (GEM, 2006, p. 12). While not specifically looking at religious belief, the GEM program and other developmental entrepreneurship studies (Galbraith and Stiles, 2006) suggest an important connection to the economic development studies discussed above – perhaps religious beliefs are in part positively related to entrepreneurial activity, and entrepreneurial activity, in turn, is related to economic growth? Thus, entrepreneurial activity is a potential intervening variable between religious belief and economic growth.

The empirical literature examining religious beliefs and entrepreneurial activity is somewhat mixed, however. While most studies suggest a positive relationship between religious belief (and church attendance) and entrepreneurial activities (Hirschmeier, 1964; Woodrum, 1985; Kwon, 1997; Iyer, 1999; Martes and Rodriguez, 2004), other studies find no significant relationship between religious belief, church attendance, and entrepreneurial activity (Dodd and Seaman, 1998). It should be noted, however, that the studies that tend to find a positive relationship appear to be from relatively high growth economies (both developed and emerging), and/or focus on ethnic and immigrant enclaves that utilize the social capital derived from a church relationship, while the empirical studies that tend not to find a relationship are from more stagnant European economies and/or do not clearly distinguish between early stage entrepreneurs and long-term small business owners. Certainly, much more work needs to be undertaken that examines the true relationship between religious belief, church attendance, and the type of entrepreneurial activity at a micro-level.

The final important literature to touch on is the theology and sociology of religion literature. With the exception of an almost obligatory reference to Max Weber's early German essays titled "*Die protestantische Ethik und der 'Geist' des Kapitalismus*," which were translated in 1930 as "The Protestant ethic and the spirit of capitalism" most of the economic and entrepreneurship literature discussed above has largely ignored the theology and psychology literature (Winter, 1974). This literature, however, has provided important theoretical distinctions that need to underpin the more economic discussions.

Throughout history, all religious traditions have addressed the connection between work (including entrepreneurship) and religion (Deutschmann, 2001; Klay and Lunn, 2003; Garvey, 2003). For example, within the Christian tradition the moral importance of work was established from its earliest beginnings (see Paul's Letter, 2 Thessalonians 3:6-15). Even the Church manual, *Didache* written approximately 80 CE, clearly defines hard work as a standard for judging the spiritual intentions of Christians entering a community. By the end of the second century, the formal Christian attitudes toward work appeared broadly understood, with the status of work significantly upgraded from the contemporaneous Roman and earlier Greek perceptions of work – hard work is both moral and spiritual, but for those who are more successful, charity must

support the “non-idle” who are truly in need (or the sick and elderly who are incapable of working). Later, Augustine of Hippo (354-430) became the first major Church Father of Late Antiquity to synthesize and publish a complete theological argument for a strong and positive work-ethic. In his *Enarrationes in Psalmos*, 70, *sermo 1* Augustine also finds virtue in the entrepreneurial activities of traders, including accruing profits for their efforts – although in Augustinian tradition there are clear moral standards in the proper acquisition and charitable disposition of personal wealth.

Similarly, Benedict of Nursia (480-547) viewed work as a critical component of the community-based monastic organization (e.g. *Rule of Benedict*, Ch. 48). Benedict also significantly expanded the spiritual foundation of the leadership function, and the managerial organization of work (Galbraith and Galbraith, 2004). In fact, the monastic orders established in the Benedictine tradition from the sixth century to the present are not only spiritual institutions, but also remarkably entrepreneurial with clearly functioning, and self-supporting business activities such as education, agriculture, hospitality, medical care, wine making, crafts, cheese production, and printing. By the seventh century, the new theology of work and leadership was clearly and broadly established within the Christian Western World.

Later, medieval theologians fine-tuned these issues, particularly as they related to the nature and proper role of entrepreneurial behavior. For example, Franciscan Friar Pierre Jean d’Olieu (Olivi) (1248-1298) was probably the father of entrepreneurial economic theory in the Western tradition. Although d’Olieu was a strong (and somewhat controversial) advocate for poverty among ecclesiastics, he forcibly argued for the moral and economic contributions of the secular entrepreneurial class. He combined in a very modern way the notion that time was a valuable commodity with the idea that entrepreneurs should be justly compensated for both taking risks and possessing scarce skills. Baeck (1999, p. 1) notes that d’Olieu established that “entrepreneurial activity in a situation of uncertainty resulting from the dynamic time horizon, requires a rare quality of mind (*solicitude mentalis*). This merits also a just remuneration.”

Building on d’Olieu’s ideas, the influential Saint Bernardino of Sienna (1380-1444) (see *Opera Omnia* and the discourses on *Contracts and Usury*), and other scholastic theologians, finally articulated the base economic theory of subjective utility, property rights, foreign trade, and entrepreneurial effort that takes us to the modern, twenty-first century. Bernardino, for example, identified four entrepreneurial gifts (efficiency, responsibility, hard work, and risk-taking) and argued that very few people in society are capable of combining these four virtues in an effective way. Thus, according to Bernardino, the entrepreneur “properly” earns the profits commensurate with keeping the entrepreneur in business, and therefore it represents a legitimate return for one’s labor, expenses, and risks (Rathbard, 1995).

Thus, within the Christian tradition well before even the sixteenth century reformation period the conclusion from the theological literature was clear: first, there is a clear moral component of work; and, second, there is a clear moral component of entrepreneurial effort. From this background, we would expect a direct relationship between religious attitudes and both economic growth and entrepreneurial activity. Weber’s “protestant” ethic added only one additional component, albeit an important one, to an already established and strongly positive moral attitude toward work, trade, value creation, innovation, and entrepreneurial activity.

In addition, from a moral market perspective there are additional reasons why religious orientation may be associated with entrepreneurial activity in a way not related to traditional Weberian arguments (Gold, 2003). For example, building on Demsetz (1967) work on property rights, there is some empirical evidence to indicate that individuals with a strong spiritual orientation may desire to internalize markets, that is, become an entrepreneur, in order to mitigate a perception that external capital and labor markets are unfair (De Noble *et al.*, 2007).

The psychology of religion literature can also add important insights to the relationship. For example, the vast majority of research in this literature supports the basic idea that there are two fundamental dimensions of religiosity – intrinsic and extrinsic (Allport, 1966; Allport and Ross, 1967; Kahoe, 1974; Donahue, 1985; Gorsuch and McPherson, 1989; Bergin, 1991; Hill and Hood, 1999; Hodge, 2003). The intrinsic orientation is directed, “toward a unification of being, takes seriously the commandment of brotherhood, and strives to transcend all self-centered needs” (Allport, 1966, p. 455). According to this perspective most religious teachings emphasize unity and brotherhood, but those individuals that are religiously motivated for intrinsic reasons will typically incorporate these religious tenets within their daily life. Not surprisingly, content analyses of articles employing the concepts of religiosity and spirituality appear to indicate a high degree of overlap between the meaning of “spirituality” and this “intrinsic” dimension of religious orientation (Harris, 2003; Hill *et al.*, 2000; Rose, 2001).

The counterpart to intrinsic religiosity, however, is extrinsic religiosity. According to Allport, the extrinsic orientation is, “useful for the self in granting safety, social standing, solace, and endorsement for one’s chosen way of life” (Allport, 1966, p. 455). It has been suggested that brotherhood and unity become less important to the extrinsic individual’s own personal beliefs and values, while conformance to community-based norms increases in importance. Many, albeit not all, researchers tend to view high extrinsic religiosity somewhat negatively, and describe it as the use of religion to gain social acceptance or reward, and often associate it with dogmatic views. It should be noted, however, that the intrinsic and extrinsic dimensions are separate dimensions, and not endpoints on the same dimension. In addition, church attendance is often improperly used as a measure of “extrinsic” religiosity. Although disagreements certainly remain, it is important to understand these theological and psychological distinctions before embarking on a thorough understanding of the relationship between religion, entrepreneurial activity, and economic growth.

Empirical study

To tie together the relationship between religious belief, entrepreneurial activity, and economic growth an exploratory analysis was performed looking specifically at 23 countries that have a historical Christian tradition. We selected a single religious tradition for several reasons. First, it has become apparent from previous empirical studies that several problems can arise from pooling countries from different religious traditions (Barro, 2003). From a theological perspective, this should be obvious since the attitudes toward work and entrepreneurial activity vary from one religious tradition to another. Second, while some studies attempt to control for this statistically, our sample size was not sufficient. Third, given the historical Christian emphasis on charity, peace, and freedom have been likely incorporated into even the most secular

institutions and morality over the centuries, this limited sample controls for some of these inter-religion cultural and institutional differences. Even Max Weber made this important “secular absorption of religious morality” point in his analysis of not only Christianity, but also other religious traditions, such as Hinduism, Buddhism, Confucianism, and Taoism, as well. Fourth, it is well recognized that most survey instruments designed to capture religious belief and activity may not be generalizable to different cultures (Piedmont and Leach, 2002). Thus, we limit ourselves to a non-pooled sample of “Christian” tradition countries. Several different sources of data were used.

Religious belief

To capture religious beliefs we used the WVS. The survey is conducted periodically. For our study, we used only countries sampled in the last full panel of the WVS (1999-2004). This excluded several potential countries from the sample. Three items were used to measure religious belief. “How important is God in your life?” (ten-point scale, we use mean); “Do you consider yourself a religious person?” (three-point scale, we use percentage considering “a religious person”), and “How often do you attend religious services?” (eight-point scale, we use percentage that report attending rarely to frequently, that is, sum responses 1-7). It should be noted that these questions more likely measure the “intrinsic” dimension of religiously, and not the “extrinsic” dimension. Thus, while recognizing that “extrinsic” religiosity may still be correlated to entrepreneurial activity through the development of social capital and network ties, our study specifically focuses on the “intrinsic” dimension.

Entrepreneurial activity

Entrepreneurial activity was measured by the 2005 GEM study. Specifically, we used a measure of the combined “nascent entrepreneurs” and “new business owners” (in business between 3 and 42 months). This represents the total “early-stage entrepreneurial activity” or what GEM previously labeled the total entrepreneurial activity (TEA). In addition, the data is further divided into “opportunity” (OPP TEA) versus “necessity-based” entrepreneurs. GEM reports these statistics on 35 countries. Only countries reporting being predominately “Christian” were included in the sample (source: 2006 CIA World Factbook). Thus, countries such as Japan and China were excluded from the sample.

Economic growth

Country level economic growth was measured by average annual growth in GDP over a ten year period, 1994-2004 (source: International Monetary Fund, *World Economic Outlook Database*).

Country sample

Based upon the data availability from both the WVS and the GEM study, a total of 23 countries are analyzed, with seven of the countries commonly classified as “emerging economies”. The “emerging economy” countries are Brazil, Mexico, South Africa, Chile, Argentina, Croatia, and Hungary; while the “developed economy” countries are the USA, Ireland, Italy, Greece, Canada, Austria, Iceland, Finland, Spain, Belgium, Slovenia, Netherlands, United Kingdom, France, Sweden, and Denmark.

Results

The data presented a full range of religious attitudes. For the item, “How important is God in your life?” mean country values ranged between a high of 9.61 (Brazil) to a low of 4.02 (Denmark). For reference, other high-mean countries were Mexico (9.45), South Africa (9.09), Chile (8.75), Argentina (8.53), the USA (8.47), Ireland (7.47), and Italy (7.43). Low mean countries included Sweden (4.1), France (4.4), UK (4.92), and The Netherlands (4.93). Similar results are found for, “Do you consider yourself a religious person?” This ranged from a high of 85.1 percent (Brazil) to a low of 37.1 percent (Sweden). However, there were some differences. For example, Denmark reported a relatively high 70.7 percent. For the question, “How often do you attend religious services?” the data ranged from a high of Italy (95.4 percent report attending rarely to frequently) to a low of France (39.1 percent report attending rarely to frequently).

To determine if these three questions capture the single “intrinsic” dimension, a factor analysis was run. Using a principal component extraction (eigenvalue > 1.0) the factor analysis resulted in a single factor from the three items. This single factor accounted for 86.38 percent of the total variation. A factor score was then created from these three items to form a single religious belief scale. The factor score loading coefficients were 0.926, 0.915, and 0.947, respectively. This single scale, labeled “intrinsic religiosity” (INT REL) was used in the analysis.

With respect to entrepreneurial activity, TEA ranged from highs of 12.2 percent (the US), 11.3 percent (Brazil), 11.1 percent (Chile), and 10.7 percent (Iceland) to lows of 1.9 percent (Hungary), 4.0 percent (Sweden) and 4.4 percent (Belgium). Separating opportunity-based (OPP TEA) from necessity-based early stage entrepreneurship resulted in a high of 10.7 percent (the US) to a low 1.14 percent (Hungary). Other countries that had high opportunity-based early stage entrepreneurial activity were Iceland, Chile, Ireland, and Canada. Low opportunity-based early-stage entrepreneurship countries include Sweden, France, Netherlands, Slovenia, Croatia, and South Africa.

Regarding economic growth, again there was wide diversity in the data. Average annual ten year economic growth (GDP) ranged from a high of 8.09 percent (Ireland) to a low of 1.33 percent (Argentina). Mean annual ten year economic growth for the developed economies in our sample was 3.39 percent, with a 3.32 percent mean annual growth rate for the emerging economy countries.

Impact on entrepreneurial activity

Several different analyses were performed. For reference, Figure 1 shows a graph indicating the relationship between INT REL and TEA for the full sample. Clearly, as hypothesized the trend line points to some type of positive relationship.

For a first analysis, the sample was divided into equal sub-groups of high and low “intrinsic” religiosity countries (based on the scale, INT REL). This partition was done for both the full sample and the sub-sample of developed economy countries.

With respect to early-stage entrepreneurial activity, there is a statistically significant difference between high and low “intrinsic” religiosity countries. With the sub-sample of developed economies, the results indicate that the high “intrinsic” religiosity countries enjoy a much higher rate of early stage entrepreneurial activity, both in the combined TEA as well as in the level of the early-stage opportunistic entrepreneurial activity (Figure 1). For the TEA metric, high “intrinsic” religiosity

countries have a mean of 7.96 while low belief countries have a mean of 4.85 ($p < 0.01$). For opportunity entrepreneurial activity (OPP TEA) similar results are found, with a mean of 6.90 for high “intrinsic” religiosity countries and 4.09 for low “intrinsic” religiosity countries ($p < 0.01$) (Figure 2).

With the total sample we only examined the TEA. Given that prior research (GEM, 2006) found that the level of necessity- versus opportunity-based entrepreneurs is high correlated (and curvilinear) with GDP, with lower GDP countries having more necessity-based entrepreneurial activity, it was felt that this would confound the results for the pooled sample when examining the impact on opportunity entrepreneurship. However, given that the TEA metric is a combination of opportunity and necessity-based entrepreneurship, the confounding effect should be less for the TEA metric in general. When examining the TEA metric for the combined sample, again the hypothesis is supported that high “intrinsic” religiosity countries show higher levels of entrepreneurial activity than lower belief countries. For high “intrinsic” religiosity countries, TEA was 8.01 while for low “intrinsic” religiosity countries TEA was 5.13 ($p < 0.05$).

Table I presents the results of a bivariate regression analysis, with both TEA and OPP TEA as the dependent variables and INT REL as the explanatory variable.

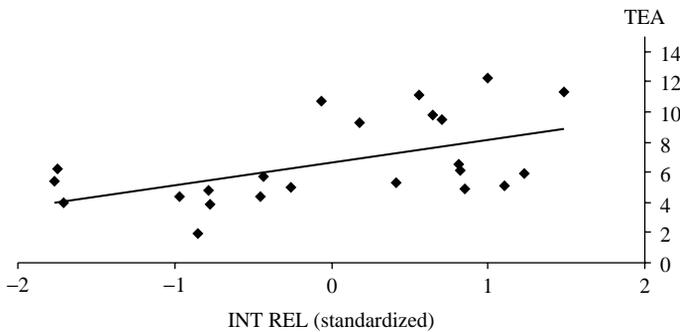


Figure 1. “Intrinsic” Religiosity (INT REL) v. Entrepreneurial Activity (TEA): Full Sample

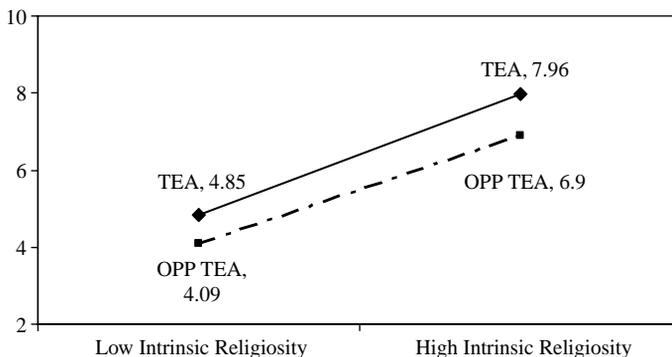


Figure 2. Entrepreneurial activity and religiosity country cluster: developed economies

From the regression analysis the relationship between “intrinsic” religiosity and entrepreneurial activity appears both positive and statistically significant. For the full sample, an R^2 of 0.282 was obtained with TEA as the dependent variable. Given the previously established curvilinear relationship between opportunity-based early-stage entrepreneurial activity and per-capita GDP (GEM, 2004, 2006), we did not analyze OPP TEA for the full sample. For the developed economy sub-sample similar results were obtained. For both the TEA and OPP TEA regressions, the estimated coefficient on the “intrinsic” religiosity variable was positive and statistically significant. The explanatory power of the regressions was also high, with R^2 of 0.307 and 0.318, respectively. We also obtained similar results for the regressions using just the emerging economy sub-sample, but sample size limitations ($N = 7$) were a problem.

Overall these results appear very consistent with both Weberian arguments regarding religious belief in general (note, that this analysis did not test the often cited Weberian Protestant v. Catholic hypothesis) as well as the theological arguments regarding the moral aspects of entrepreneurial activity.

Impact on GDP growth

We then examined mean differences for GDP growth between the equal sub-samples of high and low “intrinsic” religiosity. For the full sample high “intrinsic” religiosity countries had an annual growth rate of 3.56, while low “intrinsic” religiosity countries has an annual growth rate of 3.16 percent ($p < 0.10$). This finding is consistent with previous empirical research in developmental economics, such as McCleary and Barro (2006a, b). For the developed economy country sub-sample, high “intrinsic” religiosity countries had an annual growth rate of 3.88, while low “intrinsic” religiosity countries have an annual growth rate of 2.09 percent, however, the difference was not statistically significant.

As a final analysis, to determine the combined impact of entrepreneurial activity (which from above, is positively related to “intrinsic” religiosity) plus any additional residual impact of religiosity on GDP growth a regression analysis was performed, with GDP as the dependent variable and INT REL and TEA (or OPP TEA) as explanatory variables. Table II presents the results of this analysis.

For the full sample, the estimated model was not statistically significant. However, for the developed economy sub-sample a statistically significant model was estimated. Using INT REL and TEA as explanatory variables, the regression results in an R^2 of 0.295, and INT REL and OPP TEA model resulted in an R^2 of 0.250. In both models the entrepreneurial activity variable was in the hypothesized direction (positive) and

Model Independent variables	Full sample	Developed economies		Emerging economies	
	TEA	TEA	OPP TEA	TEA	OPP TEA
Constant	6.67	6.41	5.50	5.35	3.57
INT REL	1.51 ***	1.44 **	1.35 ***	2.64 *	1.50
R^2	0.283	0.307	0.318	0.338	0.223
F	8.23	6.19	6.54	2.55	1.42
N	23	16	16	7	7

Table I.
Bivariate regressions:
entrepreneurial activity
and “intrinsic” religiosity

Notes: *prob < 0.10 (one-tailed); **prob < 0.05; ***prob < 0.01

statistically significant. However, while the INT REL variable was also positive in both models, it was not statistically significant. It should also be noted that a log-linear regression for the developed economies (not shown in Table II) actually produced a slightly more powerful model than the linear models with R^2 s of 0.348 and 0.338, respectively. In the log-linear model the entrepreneurial activity variable was again statistically significant (in both models, $p < 0.05$), while the INT REL model was not statistically significant.

Taken together, these findings point to a conclusion that while “intrinsic” religiosity is indeed related to economic growth, the primary relationship may be through the intervening variable of entrepreneurial activity. In other words, higher levels of “intrinsic” religiosity lead to higher levels of entrepreneurial activity, which in turn, is related to economic success. Also, even when controlling for entrepreneurial activity there appears to be the possibility of an additional positive, albeit slight, impact of “intrinsic” religiosity on economic growth. While this last relationship was not statistically significant in our sample, we were limited by a relatively small sample size.

Conclusions

Well-known developmental economists such as Robert Barro and Xavier Sala-i-Martin are increasingly looking to understand economic development within the larger framework of culture, institutions, and societal attitudes. With the emergence of this work there is mounting evidence that at the macro, country-specific level religious beliefs are positively related to economic success. In general, the studies tend to be grounded within a traditional Weberian analysis of religiosity, work, and culture.

While these studies have certainly been thought provoking, we argue that four important issues have been largely overlooked in prior attempts to understand the complex calculus between religious belief and economic development. First, given that there is strong evidence from the GEM program that entrepreneurial activity is related to country-specific economic growth, perhaps an important intervening variable in the complex calculus between religious belief and economic development is, in fact, entrepreneurial activity. Second, few (if any) of the published economic and entrepreneurship studies explicitly consider the critical differences between “intrinsic” and “extrinsic” religiosity, and how these different dimensions may effect entrepreneurial activity and economic growth in different ways. Third, the generalizability of surveys, such as the world cultures survey, across different religious

Model Independent variables	Full sample GDP growth	Developed economies	
		GDP growth	GDP growth
Constant	2.35	1.58	1.93
INT REL	0.01	0.11	0.16
TEA	0.15	0.28**	-
OPP TEA	-	-	0.27*
R2	0.097	0.295	0.250
F	1.70	4.86	2.16
N	23	16	16

Notes: *prob < 0.10 (one-tailed); **prob < 0.05; ***prob < 0.01

Table II.
Regressions:
entrepreneurial activity,
“intrinsic” religiosity, and
GDP growth

traditions, is somewhat suspect. This is particularly an issue since there is strong evidence that the moralities, behaviors, and attitudes derived from a strong religious history are inevitably incorporated into the more secular institutions of the modern world. Fourth, the theological foundations of economic activity tend to go well beyond the well-cited work of Max Weber. Much greater understanding of the historical context of work, entrepreneurial behaviors, and market morality is needed to fully understand the impact of religious beliefs and moral behavior on modern economics.

The empirical study presented in this paper attempts to address all four of these issues. Given the concern about generalizability across different religious traditions, we focused on a cross-section sample of 23 historically “Christian” countries. Two conclusions can be drawn. First, while “intrinsic” religiosity does appear positively related to economic growth, entrepreneurial activity measured by both total early-stage entrepreneurial activity and opportunity-based entrepreneurial activity is a critical intervening component. Thus, “intrinsic” religiosity is highly related to entrepreneurial activity, and this, in turn probably leads to economic success.

Second, after statistically controlling for entrepreneurial activity, there does still seem to be an additional positive impact of “intrinsic” religiosity on economic growth. However, at least in our sample, this additional residual impact of religiosity beyond entrepreneurial behavior appears relatively small, and not statistically significant. A possible explanation for this finding is that in pre-modern times, most work activities incorporated strong elements of entrepreneurial reward. The percentage of the work force made up by entrepreneurial farmers, prospectors, new world immigrants, explorers, shippers, traders, craft workers, and merchants was much greater in the pre-industrial period. In fact, almost all pre-industrial revolution work incorporated critical entrepreneurial elements. Even work not usually associated with entrepreneurship, such as feudal farming, wild west law enforcement, medieval tax collecting and administration, renaissance trade apprenticing, age of exploration soldiering, Caribbean pirating, and post-slavery share-cropping, involved opportunistic self-initiative, profit accruing incentives, and risk assumption.

After the industrial revolution, however, many of the entrepreneurial incentives in the normal work life were removed, and replaced with the commodities of labor and capital. In particular, the commoditization of labor was later institutionalized in the welfare based, unionized semi-socialist economies of many modern developed economies, such as in much of Europe. Under these conditions, two things might happen. First, the only economic outlet for a strong work morality may lie in actually “starting a business” since unionization and socialized economics create a disincentive for distinct individual effort within a labor-based work environment. Second, for those not able to “start a business” a shifting of work energies to other life activities, such as household services, may be occurring. By these arguments not much additional correlation between “intrinsic” religiosity and economic growth beyond that explained by the TEA and OPP TEA measures might be expected, particularly in many developed countries.

There are clearly several limitations to our study. First, many countries were not included in our analysis. Not only were all non-Christian countries excluded by design, but also due to the limitations of our data sources, many predominantly “Christian” countries were also excluded. Thus, our data can only be considered a sample of the over 80 predominately “Christian” countries in the world. While our sample does

contain Western European, Eastern European, South American, African, and North American countries, and included both emerging and developed economies, our results may not be generalizable to the larger population. In addition, we did not investigate the interaction of religiosity with other measures of culture. Finally, by design we only investigated the dimension of “intrinsic” religiosity, and did not specifically consider the “extrinsic” religiosity dimension.

With these limits in mind, however, we believe that our study raises several intriguing issues regarding the interaction between religious belief structure, entrepreneurial activity, and economic growth. Certainly much more work is needed, particularly in the area of casual modeling the critical relationships, and providing much stronger theoretical foundations to explain the emerging empirical trends.

References

- Allport, G. (1966), “The religious context of prejudice”, *Journal for the Scientific Study of Religion*, Vol. 5 No. 3, pp. 447-57.
- Allport, G. and Ross, J. (1967), “Personal religious orientation and prejudice”, *Journal of Personality and Social Psychology*, Vol. 5 No. 4, pp. 432-43.
- Baeck, L. (1999), *The Legal and Scholastic Roots of Leonardus Lessius’s Economic Thought*, Publication No.37, *Storia del Pensiero Economico*, Dipartimento di scienze economiche dell’Università di Firenze, Florence, available at: www.cce.unifi.it/dse/spe/rivista.htm (accessed 1 March, 2007).
- Barro, R. (2003), “Religion and economic growth”, Paper 9682, National Bureau of Economic Research, Cambridge, MA.
- Barro, R. and McCleary, R. (2003), “Religion and economic growth across countries”, *American Sociological Review*, Vol. 63, pp. 760-81.
- Barro, R. and Sala-i-Martin, X. (2004), *Economic Growth*, 2nd ed., MIT Press, Cambridge, MA.
- Bergin, A. (1991), “Values and religious issues in psychotherapy and mental health”, *American Psychologist*, Vol. 46, pp. 394-403.
- Brooks, A. (2006), *Who Really Cares: The Surprising Truth about Compassionate Conservatism*, Basic Books, New York, NY.
- Candland, C. (2000), “Faith as social capital: religion and community development in Southern Asia”, *Policy Development*, Vol. 33 Nos 3/4, pp. 355-74.
- Dana, L. and Galbraith, C. (2006), “Poverty, developing entrepreneurship and aid economics in Mozambique: a review of empirical research”, in Galbraith, C. and Stiles, C. (Eds), *Developmental Entrepreneurship: Adversity, Risk, and Isolation*, Elsevier, Amsterdam, pp. 187-201.
- De Noble, A., Galbraith, C., Singh, G. and Stiles, C. (2007), “Market justice, religious orientation, and entrepreneurial attitudes”, *Journal of Enterprising Communities*, Vol. 1 No. 2.
- Demsetz, H. (1967), “Toward a theory of property rights”, *The American Economic Review*, Vol. 57 No. 2, pp. 347-59.
- Deutschmann, C. (2001), “Capitalism as a religion?: An unorthodox analysis of entrepreneurship”, *European Journal of Social Theory*, Vol. 4 No. 4, pp. 387-403.
- Dodd, S. and Seaman, P. (1998), “Religion and enterprise: an introductory exploration”, *Entrepreneurship: Theory and Practice*, Fall, pp. 71-86.
- Donahue, M. (1985), “Intrinsic and extrinsic religiousness: review and meta-analysis”, *Journal of Personality and Social Psychology*, Vol. 48 No. 2, pp. 400-19.

-
- Galbraith, C. and Galbraith, O. (2004), *The Benedictine Rule of Leadership*, Adams Media, Avon, MA.
- Galbraith, C. and Stiles, C. (Eds) (2006), *Developmental Entrepreneurship: Adversity, Risk, and Isolation*, Elsevier, Amsterdam.
- Galbraith, C., Stiles, C. and Benitez-Bertheau, J. (2004), "The embryonic development of an ethnic neighborhood: a longitudinal case study of entrepreneurial activity", in Stiles, C. and Galbraith, C. (Eds), *Ethnic Entrepreneurship: Structure and Process*, Elsevier, Amsterdam, pp. 95-113.
- Garvey, G. (2003), "The theory of the firm, managerial responsibility, and catholic social teaching", *Journal of Markets & Morality*, Vol. 6 No. 2, pp. 525-40.
- Global Entrepreneurship Monitor (2004), *2004 Executive Report*, Global Entrepreneurship Monitor, Babson, MA.
- Global Entrepreneurship Monitor (2006), *GEM 2006 Results*, Global Entrepreneurship Monitor, Babson, MA.
- Gold, L. (2003), "The roots of the focolare movement's economic ethic", *Journal of Markets & Morality*, Vol. 6 No. 10, pp. 143-59.
- Gorsuch, R. and McPherson, S. (1989), "Intrinsic/extrinsic measurement: I/E revised and single-item scales", *Journal for the Scientific Study of Religion*, Vol. 28, pp. 348-54.
- Guiso, L., Sapienza, P. and Zingales, L. (2003), "People's opium? Religion and economic attitudes", *Journal of Monetary Economics*, Vol. 50 No. 1, pp. 225-82.
- Harris, K. (2003), "Spirituality and religiousness: defining concepts in psychotherapy", paper presented at poster session, 2003 Mid-Winter Research Conference on Religion and Spirituality, Timonium, MD, available at: www.kevinharris.s5.com/DefConceptEssay.html (accessed 12 January 2004).
- Hill, P. and Hood, R. (Eds) (1999), *Measures of Religiosity*, Religious Education Press, Birmingham, AL.
- Hill, P., Pargament, K., Hood, R., McCullough, M., Swyers, J., Larson, D. and Zinnbauer, B. (2000), "Conceptualizing religion and spirituality: points of commonality, points of departure", *Journal for the Theory of Social Behaviour*, Vol. 30, pp. 51-77.
- Hirschmeier, J. (1964), *The Origins of Entrepreneurship in Meiji Japan*, Harvard University Press, Boston, MA.
- Hodge, D. (2003), "The intrinsic spirituality scale: a new six-item instrument for assessing the salience of spirituality as a motivational construct", *Journal of Social Service Research*, Vol. 30 No. 1, pp. 41-61.
- Inglehard, R. and Baker, W. (2000), "Modernization, cultural change, and the persistence of traditional values", *American Sociological Review*, February, pp. 19-51.
- Iyer, G. (1999), "The impact of religion and reputation in the organization of Indian merchant communities", *Journal of Business & Industrial Marketing*, Vol. 14, pp. 102-17.
- Kahoe, R. (1974), "Personality and achievement correlates of intrinsic and extrinsic religious orientations", *Journal of Personality and Social Psychology*, Vol. 29, pp. 812-8.
- Klay, R. and Lunn, J. (2003), "The relations of god's providence to market economics and economic theory", *Journal of Markets & Morality*, Vol. 6 No. 2, pp. 541-64.
- Kwon, V. (1997), *Entrepreneurship and Religion: Korean Immigrants*, Taylor & Francis, London.
- Landes, D. (1999), *The Wealth and Poverty of Nations: Why Some are So Rich and Some So Poor*, Norton, New York, NY.

-
- McCleary, R. and Barro, R. (2006a), "Religion and economy", *Journal of Economic Perspectives*, Vol. 20 No. 2, pp. 49-72.
- McCleary, R. and Barro, R. (2006b), "Religion and political economy in an international panel", *Journal for the Scientific Study of Religion*, Vol. 45 No. 2, pp. 149-75.
- Martes, A. and Rodriguez, C. (2004), Church Membership, Social Capital, and Entrepreneurship in Brazilian Communities in the US, in Stiles, C. and Galbraith, C. (Eds), *Ethnic Entrepreneurship: Structure and Process*, Elsevier, Amsterdam, pp. 171-202.
- Piedmont, R. and Leach, M. (2002), "Cross-cultural generalizability of the spiritual transcendence scale in India: spirituality as a universal aspect of human experience", *American Behavioral Scientist*, Vol. 45, pp. 1888-901.
- Rathbard, M. (1995), *Economic Thought Before Adam Smith*, Edward Elgar, New York, NY.
- Rose, S. (2001), "Is the term 'spirituality' a word that everyone uses, but nobody knows what anyone means by it?", *Journal of Contemporary Religion*, Vol. 16, pp. 193-207.
- Van de Ruit, C. (2001), "Micro-finance, donor roles and influence and the pro-poor agenda: the cases of South Africa and Mozambique", draft working paper, University of Kwazulu-Natal, Durban.
- Winter, J. (1974), "Quantitative studies of the applicability of the weber thesis to post-world war II USA: a call for redirected efforts", *Review of Religions Research*, Vol. 16, pp. 47-58.
- Woodrum, E. (1985), "Religion and economics among Japanese Americans: a Weberian study", *Social Forces*, Vol. 64 No. 1, pp. 191-203.

Further reading

Dollahite, D. (1998), "Fathering, faith and spirituality", *Journal of Men's Studies*, Vol. 7, pp. 3-15.

About the authors

Craig S. Galbraith is a Professor of Entrepreneurship and Technology at the Cameron School of Business, University of North Carolina Wilmington. His research interests include the impact of institutions, technology, and social capital on entrepreneurial activity in high risk situations. Craig S. Galbraith is the corresponding author and can be contacted at: galbraithc@uncw.edu

Devon M. Galbraith is an Instructor at the Cameron School of Business, University of North Carolina Wilmington. Her research interests are in the areas of human resource management and accounting information systems within small to medium sized enterprises. E-mail: galbraithd@uncw.edu