

Weber revisited: A literature review on the possible Link between Protestantism, Entrepreneurship and Economic Growth

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Weber revisited:

A literature review on the possible Link between Protestantism, Entrepreneurship and Economic Growth

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Abstract:

The present paper looks at the Weber-Tawney thesis on the positive link between Protestant ethic and economic growth. Both scholars observed that Protestant areas in the Western world seemed to gain faster and more wealth than areas with less Protestants, and largely explained this by a special mentality fostering entrepreneurship in Protestant thinking.

By conducting a literature study of research in the area, the paper concludes that despite wide debate, there is a significant acceptance that there is a statistical link between religious affiliation and growth.

However, scholars tend to disagree on the causal relationships. Still, the bulk of the literature seems to agree that the Reformation paved way for entrepreneurship and economic growth in one way or another. The paper seeks to map the most important explanations and the arguments behind them.

Key words: Weber, Reformation, Protestantism, Entrepreneurship, Economic Growth

JEL-codes: B15, B25, N10, N30, N90, O10, O40, O47, P10, P30, P41, P47, P50

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Introduction

For more than a 100 years Weber's thesis on the positive link between protestant ethics and prosperity has been discussed widely among scholars, who tend to disagree on so many aspects of the issue.

If one runs a regression with GDP as dependent variable and believe in God as independent variable as of 2020 one will most likely find a negative relationship between the two. On the other hand, one can divide the countries into cohorts according to their wealth or geography, run new independent regressions, and be likely to find positive relationships between GDP and believe in God.

The so-called Weber thesis does not claim there is a relationship between the believe in a god and prosperity. They claim Protestant ethics was one of several factors having a positive effect on entrepreneurship and economic growth. So, can we find this link. In that case, how can this be explained?

Nail Ferguson (2003) observed a decline in work ethics during the last decades of the 20th century, when he stated:

The experience of Western Europe in the past quarter-century offers an unexpected confirmation of the Protestant ethic. To put it bluntly, we are witnessing the decline and fall of the Protestant work ethic in Europe. This represents the stunning triumph of secularization in Western Europe – the simultaneous decline of both Protestantism and its unique work ethic.

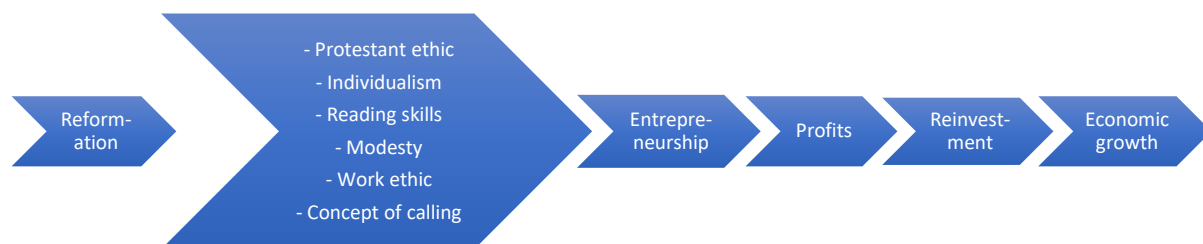
Like him, most writers on economic and social science history seem to agree that there is a clear relationship between the Protestant reformation, entrepreneurship and economic growth. In particular they find links between Puritanism, entrepreneurship and economic growth. However, one to a large degree disagrees on the causality and driving forces behind these observations (Swatos and Kaelber 2005). Thus, this paper seeks to give an overview of relevant research, and to give an answer to if there are possible links between Protestantism and economic growth.

The Weber-Tawney thesis

Barro (2019), McCleary (2006) and Young (2009) argue there is clear evidence on the empirical relationship between Protestantism and economic growth, which could be observed through centuries. Becker, Pfaff and Rubin (2016), through a literature study, conclude that a huge majority of published research concludes there is a relationship, but they disagree on the explanations. One of the first scholars to come up with plausible explanations for the relationship was Max Weber

Weber (1905) gave a description of *the capitalist spirit*, which according to him to a large degree developed from Protestant ethic of duty and calling. His hypothesis on the possible linkage between this ethics, entrepreneurship and economic growth can be formed by an algorithm, as illustrated in chart 1.

Chart 1. Weber algorithm on link between Protestant ethic and economic growth.



Source, Weber 1905.

Weber argued that Protestant directions, and in particular Puritan movements, were more individualistic than Catholic and Orthodox Christianity. In Protestant theology each individual was made responsible to God for his or her own salvation, one could neither go via a church nor any rites, but through an individual relationship with God. This also influenced moral perceptions. According to Weber these attitudes promoted high work ethics, moderate consumption and individual responsibility.

Protestants also had responsibility to read the Bible. Thus, they set up compulsory schools, and their reading skills became superior to everybody else. Individualism, high saving rates and reading skills paved way for entrepreneurship. Profits were reinvested rather than consumed, with economic growth as result. Weber argued that the same kind of reasoning existed within Catholicism and Orthodoxy, but was chiefly confined to monasteries.

Robert Tawney (1926) did to a large extent support Weber's thesis. However, he modified his notion of uncertainty of salvation, which should have made in particular Calvinists work hard. He also added that Protestants, and in particular Puritans, often were persecuted minorities, bereaved of privileges. Thus, they had to be entrepreneurial in order to thrive. Bringing the two together we arrive at the so-called Weber-Tawney thesis. In sum, it argues that Individual responsibility within Protestant mentality paves way for entrepreneurship, market liberalism and capitalism. The responsibility includes concern for oneself and for one's surroundings, i.e. social responsibility. These values should promote hard work, modest spending, saving, investment, reinvestment of profits, entrepreneurship and, thus, economic growth.

The Weber-Tawney thesis was to a large degree revived by Engerman (2000), who refined it by agreeing with Tawney that Capitalism basically was born in Catholic Italy, when market liberalism and entrepreneurship later thrived in the Protestant countries, paving way for growth.

Debate

Weber's thesis has been a source of disagreement (Robertson 1933, Samuelsson 1957, O'Brian 1998). In the first place his observations have been challenged. In particular his ideas that Protestantism was essential in the forming of capitalism. Capitalism seems to be older than the Puritan and Calvinistic protestant movements described by Weber. In fact, capitalism to a large degree developed in the Catholic world (Fanfani 2002). Secondly, Weber's description of Calvinists and Puritans is not very precise. In fact, it has been argued that he doesn't really describe either of them. Thirdly, the explanations of his observations are challenged. Indeed, scholars find a link between Protestantism one hand and entrepreneurship and economic growth on the other hand. But causality is heavily debated. Peltonen (2008) argues this is due to a misunderstanding of what the Weber thesis really contains, as one has made it a theory on Calvinist teaching of predestiny theology or even a theory of links between general religiosity and economic growth.

In a recent study Ruck, Bentley and Lawson (2018) claim on the grounds of empirical testing that religiosity is negatively correlated with GDP. However, the argument is hardly valid as criticism of the Weber-Tawney thesis. Firstly, Weber and Tawney never argued that religiosity promotes entrepreneurship and economic growth, they argue that Christian Protestant ethic historically fueled growth compared to other faiths. Secondly, they give a historical explanation, not a present-day description. It is well known that increase of wealth leads to less religiosity in the long run. Hence, the analysis of Ruck et al may reflect another phenomenon than the Weber-Tawney thesis, despite they try to control for this within their period of research. Thirdly, if one divide countries into three cohorts, low-wealth countries, medium-wealth countries and high-wealth countries, one finds a positive relationship between religiosity and economic growth in all segments, contrary to the argument of Ruck et al.

Barro and McCleary (2003) argue through quantitative analysis of international data since 1965, that church attendance is statistically negatively related to economic growth, when faith is positively related. This is explained by negative regression coefficients between church attendance and economic growth, and positive regression coefficients between believe in heaven and hell and economic growth. Two problems with this analysis are its short historical perspective and that their main findings do not split sufficiently between different religious affiliations.

Still the question of a possible link between the Protestantism, entrepreneurship and economic growth is not at all answered by these two analyses. So, what does historical research reveal?

The state of the art gives substantial research support to many of the Weber and Tawney findings (Iannacone 1998, Bremer and Webster 2005). Puritans represented one of the first waves of nonconformist Protestants in the United Kingdom and the US. They have been considered pioneers within industrial entrepreneurship, labor welfare, democracy, human rights and social justice. According to research nonconformists in the United Kingdom were significantly more likely to act as industrial entrepreneurs than other religious groups in the 18th and 19th century (Jeremy 1988, Emden 1939). Jonassen (1947) argue the same about Norway in a pathbreaking analysis, combining theory, methodology, quantitative and qualitative approaches to the issue.

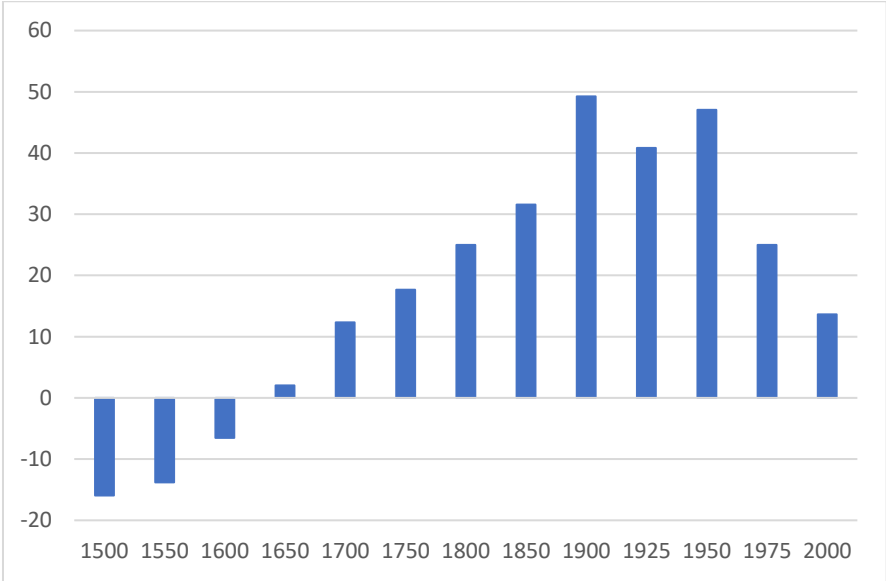
In Germany Lutheran Pietists represented much of the same values and mentality as the British Puritans. The Hernhuts, who can be considered a branch of European continental Pietism, were well known for their economic entrepreneurship. In France the Protestant Huguenots represented much of the same, when the Calvinistic branch of Protestantism in a wider sense was strong in Switzerland, the Netherlands and Scotland. Also, in the Scandinavian countries we find branches of nonconformist movements with strong Puritan and Pietistic influence, where entrepreneurship seems to have flourished (Kaelber 2005) Important studies claim that the mentality of Puritan Protestantism in a wide sense, historically has fostered democratic, social, economic and educational entrepreneurship (Barro 2003).

These statistical results have been challenged by several scholars, among them Delacroix and Nielsen (2001), who calls Weber's thesis *The Beloved Myth*, as they through econometrics conclude there is no statistically significant relationship between early development of capitalism and Protestantism. However, it can be argued that their results only question one part of the Weber thesis, namely where capitalism was born, and not the core of it: that Protestant mentality fueled entrepreneurship and growth. Delacroix's and Nielsen's research also conclude different from a clear majority of studies in this field. In his empirical work on religious affiliation and economic growth in Western Europe since 1500, Young (2009) concludes that there is a clear correlation between Protestantism and growth until the 1950s. Thereafter one maps convergence, which explains why some studies with newer data does not show the Protestant link to economic growth. Young argues that the economic success was due to dynamic ethics and mentality. He gives evidence that before the reformation those areas which became Protestant often were the poorest, when in some generations after the reformation they were the wealthiest. Between 1850 and 1940 Protestant economies in Europe had an annual growth rate of 2.5 percent, when Catholic Europe had 1.5 percent. Grier (1997) confirms a clear correlation between Protestantism and economic development in his quantitative study of 63 former colonies.

Statistical evidence

By comparing GDP per capita in predominant Protestant and Catholic countries in Europe 1500-2000 we are able to say something about the development of relative economic growth. This was first done by Young (2009). We use revised data and different weights in our comparison, but still arrive at very similar conclusions.

Chart 2. Protestant to Catholic GDP per capita, difference in percent.



Historically Catholic countries: Ireland, France, Austria, Italy, Spain, Portugal, Belgium. Historically Protestant countries: Denmark, Sweden, Norway, Finland, UK, Germany, the Netherlands, Switzerland

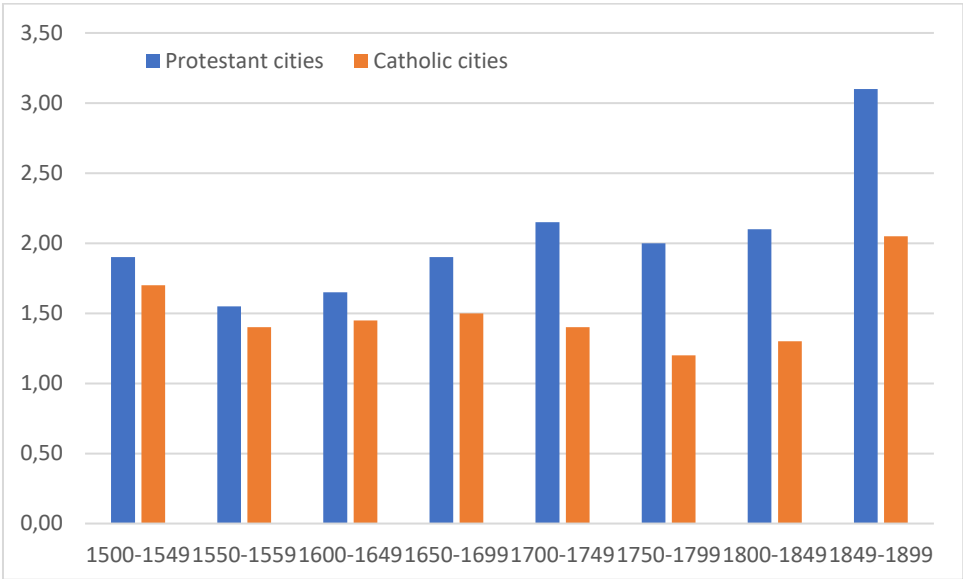
Sources: Maddison (2007), Young (2009) and Grytten (2016)

Chart 2 confirms the argument by Young, i.e. areas to become Protestant had inferior wealth compared to Catholic regions, but after the reformation until 1950 they grew significantly faster than others and obtained GDP per capita levels 50 percent higher than those of Catholic areas in the late 1800s.

Recent studies confirm that nonconformist Puritans, bound neither by traditional doctrines, customs nor practices, were essential as entrepreneurs and in the making of the modern economy. Their tracks were followed by economic growth, wealth and welfare. Iannacone (1998) argues that religious belief is often formed through rational processes and that the link between nonconformist movements and economic entrepreneurship and growth is statistically significant. This is in line with the massive British study conducted by Jeremy (1998). McCleary and Barro (2006) study links between religious affiliation, motivation and its consequences. They confirm statistical links between Protestant ethics and growth. Nunziata and Rocco (2016) gives statistical evidence of high degree of entrepreneurship among Protestant minorities.

Becker and Woessmann (2009) tested for causal relationship with wealth by examining data from 452 counties in Prussia in 1871. Their tests concluded that Protestants had significantly higher incomes than Catholics as result of the Reformation. Their main explanation was that the literacy rates among Protestants was significantly higher than by Catholics, due to the reading of the Bible in their mother-tongue. This gave an advantage in education, leading to economic progress. Drawing on data from Allen (2001), Rubin (2017) mapped differences in welfare ratios between 17 major European Catholic and Protestant cities 1500-1899, i.e. the ratio of ordinary labor’s wages relative to a barebone basket of subsistence. A welfare ratio of one means one is living at the subsistence level, while a ratio of two means one can buy twice the level of necessary subsistence. Rubin found that the welfare ratios constantly favored the Protestants. The difference grew rapidly from the mid 17th century. By the mid 19th century the purchasing power averaged a 50 percent higher level than that for the predominantly Catholic cities.

Chart 3. Welfare ratios 17 major cities in Europe 1500-1899



Catholic cities: Antwerp, Florence, Naples, Valencia, Madrid, Paris, Munich, Vienna, Gdansk, Krakow and Warsaw.
 Protestant cities: Amsterdam, London, Strasbourg, Augsburg, Leipzig and Hamburg.

Sources: Allen (2001) and Rubin (2017).

Rubin (2017) also used international real GDP per capita in 2010 to map possible impacts of different faith affiliations on economic welfare. He estimated regression coefficients on proportions of population according to religious affiliation to GDP per capita, and found that a country made up of Protestants only would be \$13,406 wealthier than a country with none. He found a positive, but significantly smaller effect for Catholicism as well. A country made up of Catholics only would be \$3,900 wealthier per capita than a country with none. Finally, a country made up of Muslims only was \$7,509 poorer per capita than a country with none Muslims, even after including the oil economies in the Persian Gulf.

These patterns demonstrate that there is indeed a positive correlation between Protestantism and wealth. In addition, researchers have shown that not only is there a positive correlation, but also causal connections (Blum and Dudley 2001, Becker and Woessmann 2009, Chen et al. 2014, Rubin, 2017).

What about causality?

The possible link between Protestantism and economic growth is hardly monocausal. On the basis of Sheremeta and Smith (2018) and Grytten and Minde (2019) we can set up the following equation on how it could have influenced economic growth:

$$(1) \quad dY_t^{CP} = F(RF_t, ED_t, WE_t, EN_t, SE_t, CS_t, IC_t, MM_t) + R_t$$

where

dY_t^{CP} = Economic growth caused by Protestantism

t = time period

F = Function of

RF = Religious Freedom

ED = Education

WE = Work Ethic

EN = Entrepreneurship

SE = Social Ethic

CS = Civil Society

IC = Institutional Changes

MM = Mental Motivation

R = Residual, i.e. unexplained factor

In order to check if this growth was predominant among Protestants, dY^P , one has to compare with economic growth among other religious groups, dY^O , during a period, t . Hence, we get the following equation:

$$(2) \quad dY_t^{CP} = \frac{dY_t^P}{dY_t^O} = F \left(\frac{RF_t^P}{RF_t^O}, \frac{ED_t^P}{ED_t^O}, \frac{WE_t^P}{WE_t^O}, \frac{EN_t^P}{EN_t^O}, \frac{SE_t^P}{SE_t^O}, \frac{CS_t^P}{CS_t^O}, \frac{IC_t^P}{IC_t^O}, \frac{MM_t^P}{MM_t^O} \right) + R_t$$

In equation (2) it is given that each parameter, x , has its individual effect, where $\frac{x_t^P}{x_t^O} > 0$. One may also look at the combined or aggregated effects of these parameters, where each of them has a relative weight. The aggregate of these can then explain why economic growth was higher among Protestants, here expressed as an arithmetic sum:

$$(3) \quad dY_t^{CP} = \frac{dY_t^P}{dY_t^O} = a \frac{RF_t^P}{RF_t^O} + b \frac{ED_t^P}{ED_t^O} + c \frac{WE_t^P}{WE_t^O} + d \frac{EN_t^P}{EN_t^O} + e \frac{SE_t^P}{SE_t^O} + f \frac{CS_t^P}{CS_t^O} + g \frac{IC_t^P}{IC_t^O} + h \frac{MM_t^P}{MM_t^O} + R_t$$

Where $(a + \dots + h = 1)$

We do not have sufficient data to run regression tests on this equation. However, one is able to examine research into each of these parameters to map if causality finds support. The residual will be treated under the other variables. Through a study of international research literature on the seven first parameters Sheremeta and Smith (2018) conclude that all these factors played causal roles for the historical success of Protestantism on economic growth.

Religious Freedom

Adam Smith argued that monopolistic churches are hinderances both to church growth and economic growth (Smith 1776). Later research literature conclude that religious monopolies give negative impact to economic growth and fuel corruption (Norris and Inglehart, 2004; Ekelund et al. 2006). The Medieval Catholic Church had monopolistic rights on religion. (Becker et al. 2016). This prevented entry of alternative ideas (Miller 2002, Stark and Iannaccone 1994).

There are several explanations to why religious freedom is linked to economic growth. Firstly, religious freedom reduces corruption (North et al., 2013). According to the *Government Restrictions on Religion Index* of 2011 eight of the ten most corrupt countries are countries with the highest governmental restrictions on religion. Secondly, religious freedom reduces social conflict. Thirdly, religious freedom promotes the

protection of civil and human rights, such as freedom of speech, press and assembly freedom (Grim and Finke, 2011). These rights motivate entrepreneurship, which is important for economic growth.

Education

It is an undisputable fact that Protestants had higher literacy rates than other religious groups. This was due to the importance of reading the Bible in one's mother-tongue. Reading skills led to higher education, and education led to higher skilled entrepreneurs and labor force. Hence, Protestants experienced higher economic growth than others.

Using the 1871 census, Becker and Woessmann (2009) showed that Prussian Protestant counties had significantly higher literacy rates than Catholic counties. They were also able to show that this difference in literacy rates was caused by the Reformation. The gender gap was in addition lower in reformed areas (Becker and Woessmann, 2008). Protestant men had a literacy rate of 93.4 percent compared to 84.8 percent for Catholic men, while for women it was 88.8 and 78.5 percent respectively.

Haukland (2014) shows that the Reformation in the 1500s and compulsory confirmation from 1736, where one should read the Bible and basic Lutheran doctrines, led to compulsory schooling from 1739 in Denmark-Norway. Additionally, the Puritan revival from the early 1800s led to a significant step up for education.

The Reformation also had a significant impact on overall education. Boppart et al (2013) concluded higher educational attainments by Protestants than Catholics. Gallego and Woodberry (2012) gave evidence that regions in Africa, where Protestant missionaries were in majority, had higher literacy rates than where Catholic missionaries were in majority. Bai and Kung (2015) concluded similarly for China, McCleary (2013) did for Korea, and Mantovanelli (2014) did for India. Still Catholic education played a substantial role for improved education in all these areas.

Work Ethic

Ferguson (2003) argued on the basis of data from OECD that one could find the consequences of both the rise and fall of Protestant ethics. He argued that the ethic gave a labor productivity gain after the Reformation, when secularization in Western Europe has reversed this process. Arrunada (2010) argues that Protestant and Catholics have similar work ethic, but their social ethic is different.

The view of the positive effect of Protestant work ethics is confirmed by several scholars (Mills 2013, Bresiger 2014). McCullough and Willoughby (2009) stresses that self-control and thereby high work ethics follow active religious people. They find this very clearly among Puritans. Johansen (2017) points out that modest use of Alcohol in (neo)puritan movements had a substantial effect on labor productivity.

On the basis of micro-data from Germany, Spenkuch (2016) concluded Protestants worked 3.5 hours longer per week than Catholics. Basten and Betz (2013) also provided strong empirical support for Weber's hypothesis by using Swiss data. Finally, van Hoorn and Maseland (2013) by using World Value Survey data concluded that unemployment brings more dissatisfaction to Protestants, suggesting they value work stronger than other groups.

Entrepreneurship

Nunziata and Rocco (2016) used data from Switzerland and from the European Social Survey (Nunziata and Rocco, 2014) to investigate into the relationship between entrepreneurship and religious affiliation. They concluded Protestants were significantly more likely to be entrepreneurs than other groups. In similar research Rietveld and van Burg (2014) provided evidence that Protestant entrepreneurs are more likely to have a view that their duty is to add value to society since *their work is a calling from God*. This has been confirmed in a Study by Grytten (2014) examining entrepreneurial activities among Norwegian Puritans during the 19th, 20th and early 21st century.

Iannacone (1998) finds a statistically significant link between nonconformist movements and economic entrepreneurship and growth. This is in line with the massive British study conducted by Jeremy (1998), and by a study of McCleary and Barro (2006), who all confirm the statistically significant links between Protestant ethics and entrepreneurship, especially among nonconformist Puritan movements.

In the book *Entrepreneurship and Religion* edited by Dana (2010) contributors find that minorities and outsiders often become entrepreneurs independent of religious affiliation. They argue that entrepreneurship was common among Protestant minorities, like Puritans and nonconformists. Thus, they to a large degree explain the link between religious affiliation and entrepreneurship as particularism opposed to universalism. This is to a large degree supported by Nafziger (2012) in his explanation of entrepreneurial activities by religious minorities.

Social Ethic

This field has fostered a lot of research into causality between religion and economic growth, in particular within the topics of trust and corruption. A great number of research papers and books reveal that Protestants have a significantly higher level of trust than most other religious and secular societies, leading to long-term economic growth (Burnham et al. 2000, Rietz et al. 2013, Inglehart 1999, Uslaner 2002, Guiso et al. 2003, Delhey and Newton 2005, Bjornskov 2007, McCullough and Willoughby 2009). It has also been concluded that Protestant countries have lower levels of corruption. (Treisman, 2000, Guiso et al. 2003, Woodberry 2004, Arrunada, 2010). Chen et al (2014) attribute part of China's recent economic success to disseminations of Protestant social values by western missionaries.

La Porta et al (1997) presented data on GDP and trust level in 25 European countries, and find a strong relationship between trust and economic growth. Also, Protestant countries have the highest trust level and highest economic growth, followed by countries with an even distribution of Catholics and Protestants.

CS = Civil Society

The presence of a well-organized civil society is imperative for economic development. By examining data from 85 countries Treisman (2000) concluded that a potential reason for the success of Protestant countries was that their traditions *lead to a more vibrant, autonomous civil society*.

It has been claimed that the main principles of the American civil society, which has the largest volunteer sector in the world, were laid out in the 1776 Declaration of Independence and the 1789 Constitution, and that these principles were consistent with Puritan ethics. We know that 49 out of 55 delegates were affiliated with Protestantism, and that many of them were influenced by Puritan thinking despite practicing Puritans made up a minority (Lambert, 2003). Wills (1979) and Amos (1989) agree that the foundation of the USA and its civil society to a large degree was based on Puritan and Protestant values.

Woodberry (2004) did an extensive literature review on research on this topic and concluded that in all societies there is strong evidence that *Protestant groups are more active than other religious groups in forming and supporting non-profit organizations*. Curtis et al (2001) found this for the USA, Lam (2002) for Canada, Anheier (1989) for Africa, James (1986) for Japan, Pongsapich (1998) for Thailand. When (Anheier and Salamon 1998) and Curtis et al. (2001) found for other countries. According to Woodberry (2004) Protestant missionaries played an important role in fostering the growth of organizational civil society, as they reformed what they saw as malfunctioning systems (Deol 2000, van der Veer 2001).

IC = Institutional Changes

In their recent book called *The Wealth of Religions* Barro and McCleary (2019) argue that there is a political economy of religions, in which Protestant churches and countries have been more open to change, and thus progression. The Reformation in itself was a agent for change. This attitude is carried on into the society.

The Reformation had huge impact on politics. The ruling elite with roots in Catholicism lost power, and the governance system of Europe was changed substantially. Berman (2003) suggests the Reformation made a revolution in legal thinking and institutions. Legal reforms inspired by the Reformation laid the foundation of the *civic service state* of Western Europe.

Rubin (2017) argues that the ruling religious elite lost its power during the Reformation, paving way for more democratic parliaments, which were catalysts for implementing economically beneficial laws. Nexon (2009) and Stamatov (2010) conclude that the Reformation created tight networks within parliaments, which helped to overcome institutional barriers. Witte (2002), argued that Protestant legal innovations, such as protecting private property rights and contracts, were most effective in the economic sphere.

Dørum and Sødal (2016) emphasize the influence Protestantism had on work ethics, social convergence, the development of democracy, voting rights for women, formation of a modern school system, social policy, industrial policy and the role of institutional changes in Norway during the 19th and 20th century. They argue that an underlying idea for the development was the notion that everyone is equal for God. Dørum and Sødal (2017) also argue the that Norwegian Puritan Protestants influenced the modernization of the political system. Grytten and Minde (2015) on the basis of voting registration concluded that Norwegian Puritan members of Parliament largely voted progressively in support of liberalism.

Woodberry (2012) stresses the role Protestant missionaries played in spreading of stable democracies around the world. His statistical analysis suggests that Protestant missions explain about half the variation in democracy in Africa, Asia, Latin America, and Oceania. He offers a number of causal mechanisms, including religious liberty, education, and printing press, used by missionaries to promote democracy.

MM = Mental Motivation

Mentality is a factor which is influencing most of the above parameters. Can one trace a special Protestant mentality fueling entrepreneurship and economic growth? Weber and Tawney were of the opinion that the individualistic view on salvation fostered individual responsibility, entrepreneurship and economic growth. Research confirm this, in particular for puritan nonconformist movements. But not all agree. Grossman (2006) and Cantoni (2009) argue that population shifts were more decisive for the development, when Korotayev (2006) and Becker and Woessman (2009) argue that literacy more than mentality explain historical differences within these countries.

On the other side McCullough and Willoughby (2009) argue that mental motivation is very strong among actively religious people, enabling them to successful entrepreneurship. Peltonen (2008) argues that a lot

of economic history research clearly concludes that a mental motivation for the linkage exists. Fanfani (2002) has investigated into Christian mentality and their links to the formation of capitalism. He argues that Capitalism is a Catholic innovation, since it to a large degree was born in Italian cities. However, he agrees that Protestant mentality fueled entrepreneurship and economic growth. Becker, Pfaff and Rubin (2016) find similar patterns, when Rubin (2017) also argues a free printing press to a large degree made it possible to conquer the society with their ideas in the Western world.

In a quantitative study of generational entrepreneurship Grytten and Minde (2019) conclude that there is a clear motivational factor behind Puritan entrepreneurship and industrialism on the basis of mentality. Iannacone (1998) argues that religious belief and mentality is often formed through rational processes and that these created a link between nonconformist movements, entrepreneurship and growth.

McCleary and Barro (2006) gives a compelling insight to the mentality factor. They examine statistical links between Protestant ethics, motivation and growth. They find a significant relationship and find clear motivational forces in nonconformist movements. They conclude the same in their extensive latter international study (Barro and McCleary 2019). However, they still stress other factors more for causal explanations on the link between religious affiliation and growth. Dalgaard and Supphellen (2011) on the basis of a study of Lutheran Pietist and Methodist movements conclude there is a mentality motivation for entrepreneurship, fostering economic growth.

Conclusions

Do one find evidence of a positive statistical links between Protestantism and economic growth? And do we find statistical links of causality between the two factors? By a literature study of quantitative and qualitative research into this field along with looking at statistical evidence on our own we conclude that there are significant links

This present paper sets up two dependent variables and eight independent parameters of examination of the possible linkage, in addition to a residual. These are parameters on the possible historical direct and indirect effect of Protestantism on economic growth.

One finds support of all these links between economic growth and church affiliation, as summed up in table 1. The results clearly suggest that the Reformation had significant bearing on its society and its individuals that motivated a strong movement of individualism, independence, and thus, entrepreneurship, which fostered economic growth and development.

Table 1. Parameters giving causal explanations of a positive historical link between Protestantism and economic growth.

Parameters	Operational Parameters	Statistical Effect	Effect
Economic growth caused by Protestantism	dY^{CP}_t	>0	Positive
Growth ratio Protestants:Others	dY^P_t/dY^O_t	>0	Positive
Religious freedom ratio Protestants:Others	RF^P_t/RF^O_t	>0	Positive
Education ratio Protestants:Others	ED^P_t/ED^O_t	>0	Positive

Work Ethic ratio Protestants:Others	WE^P_t/WE^O_t	>0	Positive
Entrepreneurship ratio Protestants:Others	EN^P_t/EN^O_t	>0	Positive
Social Ethic ratio Protestants:Others	SE^P_t/SE^O_t	>0	Positive
Civil Society ratio Protestants:Others	CS^P_t/CS^O_t	>0	Positive
Institutional Change ratio Protestants:Others	IC^P_t/IC^O_t	>0	Positive
Mental Motivation ratio Protestants:Others	MM^P_t/MM^O_t	>0	Positive
Residual	R_t	>0	Positive

* Statistical effect means they reflect quantitative studies with significant positive effect, alternatively several research publications concluding there is a clear effect.

Thus, on the basis of existing data and a huge quantity of research one can conclude that there seem to be what many will claim is an obvious historical link between Protestantism and economic growth. A vast majority of research publications in the field also conclude that there is a causal link between the two, despite some disagree or put emphasis on other explanations. However, according to what we may call mainstream research Protestantism historically paved way for certain institutions and attitudes that caused entrepreneurship and economic growth.

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