VIÐSKIPTAHÁSKÓLINN
BIFRÖST

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The Economic Consequences of Religion; Max Weber's "Spirit of Capitalism" revisited

Research Paper Series No 2 2002

Bifröst School of Business

www.bifrost.is

ISSN 1670 0058

Abstract:
A modified version of the Sachs and Warner model of relationship between economic growth and structural and policy variables is used to test Max Weber's hypothesis of a faster economic growth of nations with predominantly Protestant populations using data from the twentieth century. The research concludes that although that might have been true during the early years of the modern period, the "Protestant edge" has given way to a universal "spirit of capitalism" belonging to those who wish to embrace it.

Útdráttur:
Í skýrslu þessari er aðlöguð útgáfa af líkani Sachs og Warner af sambandi milli hagvaxtar og uppbyggingar- innviða- og stjórnarstefnubreyta notuð til að meta kenningu sem á uppruna sinn í hugmyndum Max Webers um tengsl milli mótmælendatrúar og skjótari hagvaxtar. Til þess eru notuð talnagögn frá tuttugustu öld. Rannsóknin sýnir að þó að slíkt kunni að hafa verið raunin í upphafi síðustu aldar, þá hafi forskot mótmælendaríkjanna horfið og "andi kapítalismans" orðið eign hverrar þeirrar þjóðar sem hafi viljað taka honum fagnandi.

Introduction[1]

Almost a century ago, the German sociologist and political economist Max Weber wrote a two part article in the *Archiv für Sozialwissenschaft und Sozialpolitik*, of which he was one of the editors. This article was later published as a book, which in its English translation bears the name *The Protestant Ethic and the Spirit of Capitalism*[2]. In it, Weber traces the birth of what he calles "rational" capitalism, to the ethics found in the teachings of the leaders of the reformation of Christianity, especially Calvin. This book has ever since been the source of debate within the social sciences, and almost immediately caused a wide range of criticism, both from Catholics and Protestants alike,[3] though perhaps some of it may not have been well founded.[4]

Weber had noticed, that in Europe, religious minorities seemed to be driven into economic activity with peculiar force. He argued that this could be the case because of their exclusion from positions of political influence, that they sought to satisfy their need for recognition in this field, since there was no opportunity in the service of the state.Then he noted another odd thing. Although this hypothesis seemed to be true of the Poles in Russia and Eastern Prussia, the Huguenots in France, the Quakers and Nonconformists in England and most certainly the Jews, the Catholics in Germany had shown no evidence of this result. Even in countries where they were persecuted or barely tolerated they underwent no prominent economic development. This led Weber to conclude that it had something to do with the permanent intrinsic character of their religious beliefs, and not only their "temporary external historico-political situations."[5]

Weber assumes that for a capitalistic society to take root, there must be a labour force that is willing to undertake work for wages, and to be willing to work more for more wages. He noted that in precapitalist societies, raising wages often led to reduced work effort. The opportunity of earning more was less attractive than that of working less. He says:

> Wherever modern capitalism has begun its work of increasing the productivity of human labour by increasing its intensity, it has encountered the immensely stubborn resistance of this leading trait of pre-capitalist labour. And to-day it encounters it the more, the bore backward (from a capitalistic point of view) the labouring forces are with which it has to dea1.[6]

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[1] This working paper is a small exercise in the use of econometric methods on a social scientific topic of great importance and interest to a large body of scholars throughout the Twentieth century. The author acknowledges the difficulties of using the simple methods applied here to complicated subjects such as economic growth but hopes that the conclusions might point in a somewhat credible direction. All errors or misjudgements are the sole responsibility of the author.

[2] Weber, Max, The Protestant Ethic and The Spirit of Capitalism, Charles Scribner's Sons, 1976.

[3] see for instance Robertson, H.M., "A Criticism of Max Weber and His School," Protestantism and Capitalism D.C. Heath and Co, 1959, pp 65 - 86.

[4] Giddens, Anthony, Introduction to "The Protestant Ethic..." Charles Scribner's Sons, 1976, p 10.

[5] Weber, Max, The Protestant Ethic and The Spirit of Capitalism, p.40.

[6] Weber, Max, The Protestant Ethic and The Spirit of Capitalism, p.60.

Weber then concludes that labour must be performed as if it were an absolute end in itself, a calling. That can only be the product of a long and arduous process of education. This is where the Protestant ethic comes into place. The concept of calling has a different meaning in Protestantism than in Catholicism. “The only way of living acceptably to God was not to surpass worldly morality in monastic ascetism, but solely through the fulfilment of the obligations imposed upon the individual by his position in the world. That was his calling.”[7]

Even today, there is the widespread notion that Catholicism and capitalism are like oil and water, as can bee seen in this quote from The New Republic, February 9 1998, regarding the papal visit to Cuba:

> But make no mistake: While the Pope is happy to praise democracy, he is no champion of capitalist values out to slay the last defender of Marxism. In fact, as Castro has gleefully observed, the Pope "has done all his criticisms of communism. Now he's criticizing capitalism." That's because John Paul is guided by a theological vision that is as hostile to capitalism as it is to communism. [8]

If one looks at a map of the world religions, as can be seen in so many encyclopaedias and world atlases, it is somewhat striking to notice that those countries that are predominantly Protestant, are also, almost without exception, rich. Christianity has taken root in many parts of the world, and the southern half of the great American continent is Christian, but the form of Christianity there is Roman Catholic. That half is also the poorer one in material posessions than the overwhelmingly Protestant North America.

This trend is also visible within Europe, where the Catholic south was significantly later to reap the benefits of the industrial revolution than the Protestant north. Then there is the controversy of Ireland. Apparantly well situated, English speaking, fertile country. Ninety-eight percent Catholic and has, up until the last 10 years, been the poor man of Europe. Two hundred years ago, the population of Ireland was about half the population of England. Now it is around one-twentieth of that of its neighbour.

Is this all a coincidence? Has this to do with some other dominant factors of society than religion and the morals and institutions that tend to develop from it? Were the Irish just constantly put down by the British? Was South America kept behind by its powerful counterpart in the North, or some internal strife, that can not be traced to the fundamental characteristics a serious religion and its institutions set on a society? Old World Colonialism said goodbye to South America in the former half of the nineteenth century so it can hardly be blamed. It is interesting to pursue thes questions from the qualitative speculations and into the quantitative.

Framework and theoretical approach

It will be difficult to tackle questions of such proportions in a short paper like this one. What I hope to do is to use a modified version of the Sachs and Warner model of

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[7] Weber, Max, The Protestant Ethic and The Spirit of Capitalism, p.80.
[8] Winters, Micahel Sean, "Old faithful: John Paul v. modernity." The New Republic, Feb 9 1998, p. 16.

relationship between economic growth and structural and policy variables[9] to test Max Weber's hypothesis of a faster economic growth of nations with predominantly Protestant populations using data from the latter half of the twentieth century.

I have constructed a data set from various sources. On religion in the world I use a book published in 1988 by the Centro de Literatura Christiana,[10] that has a thorough estimate of the followers of different religious categories in all the countries of the time. The data sample consists of 80 countries. I chose to include most of the countries that might be considered Christian, but left out many countries that are not. Some predominantly Muslim countries found their way into my data set, together with countries that are neither Christian nor Muslim, like Japan and India. Another large category I chose to exclude were the countries that were under some sort of a socialist regime at the time. Although many of these countries would probably today be considered Orthodox Christian, my data is from 1988, or the year before the Berlin wall came. It is also fair to assume, that fifty to seventy years of socialist institution bulding has left its mark on these nations so as to blur the foundations of morals contained in the message of the Orthodox church. It will take several years to recapture those foundations, and perhaps they will never be recaptured.

The data on gross national product per capita, is aquried through Penn World Tables, accessible through the website of the University of Toronto,[11] and the data on income distribution and Gini coefficients comes from the website of the World Bank.[12] I also use data from the economics text book *Economic Growth* [13] by Barro and Sala-I-Martin.

The regressions are based on a modified version of a model developed by Jeffrey D. Sachs and Andrew Warner at the Harvard Institute for International Development.[14] It looks at the relationship between economic growth and structural and policy variables used by Sachs and Warner plus variables accounting for religious affiliation and colonial status of the nations in question in the twentieth century.

Catholic writers have replied to the claims of the superiority of the Protestant ethic in worldly matters, that other things were, perhaps, more important than the accumulation of wealth, and the even distribution of it was just as important.[15] Though this argument was mostly used with regards to nineteenth century society, and before the world witnessed the rise and possible fall of the Nordic "welfare state," I tend to look into this, and see if there is a significant difference in the distribution of wealth between countries of different religious affiliations.

It may be criticized, that one wishes to observe the connections of what might be labeled as archaic institutions in this era that has marked it self as the "post" era, be it post-modern or post-christian. But as Weber himself said, while undertaking his own task in the midst of scientific and technical revolutions, never before witnessed by

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[9] Sachs, Jeffrey D. & Andrew M. Warner, Sources of Slow Growth in African Economies, HIID, 1996
[10] Johnstone, Patrick, Operacion Mundo, Centro de Literatura Christiana, 1988
[11] www.chass.utoronto.ca
[12] www.worldbank.org
[13] Barro, Robert J. & X. Sala-I-Martin, Economic Growth, McGraw-Hill, 1995
[14] Sachs, Jeffrey D. & Andrew M. Warner, Sources of Slow Growth in African Economies, HIID, 1996
[15] Viner, Jacob, Religious Thought and Economic Society, Duke University Press, 1978, p. 183.

humans: "The Puritan wanted to work in a calling; we are forced to do so. For when ascetism was carried out of monastic cells into everyday life, and began to dominate worldly morality, it did its part in building the tremendous cosmos of the modem economic order."[16]

Recently, with the collapse of the bipolar international system, and not least since the horrors of 11 September 2001, there has been an upsurge in looking towards religious factors as relevant in international politics. Perhaps the best-known example of this is Samuel P. Huntington's controversial book *The Clash of Civilizations and the Remaking of World Order,* in which he aims to define the new cleavages opening up in the wake of the Cold War.[17]

It has also been argued that culture, as a factor relating to religion and institutionbuilding, is a prime mover behind the economic development of countries. An example of the ongoing debate can be found in the recent book, *Culture Matters*,[18] edited by Lawrence E. Harrison and Samuel P. Huntington. Harrison is the author of a book on the subject, which is called *Underdevelopment Is a State of Mind*.[19]

Religion is clearly a defining force in shaping the institutions, morals, laws and identities a society inherits, and Anthony D. Smith says: 'For the greater part of human history the twin circles of religious and ethnic identity have been very close, if not identical… Though one cannot argue conclusively for ethnic causation there are enough circumstantial cases to suggest strong links between forms of religious identity, even within world religions, and ethnic cleavages and communities.'[20]

Michael Sean Winters writes in *The New Republic*: "At a synod of bishops from North and South America held in Rome last autumn, a prevailing theme was anxiety over the extension of U.S.-style capitalism into the traditionally Catholic cultures of Latin America. Some bishops even used the term "invasion.""[21] Similar thoughts are to be found in Leslie Armour's contemplation, in the *International Journal of Social Economics*, when she says:

> The cultures which are developing in Hong Kong and Taiwan seem to have much in common with the Protestant work ethic which interested Weber, and, for all their occasional attempts to link what they are doing to a traditional Confucian culture, westerners cannot help noticing the familiarity of the social and political doctrines which are preached.[22]

In the conclusion of his book Weber says that the "idea of duty in one's calling prowls about in our lives like the ghost of dead religious beliefs."[23]

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[16] Weber, Max, The Protestant Ethic, p. 181.
[17] Huntington
[18] Harrison, Lawrence E. & Samuel P. Huntington, (2001) Culture Matters, Basic Books
[19] Harrison, Lawrence E., (2000), Underdevelopment Is a State of Mind, Madison Books
[20] Smith, A. p. 7.
[21] Winters, Micahe1 Sean, "Old faithful: John Paul v. modernity." The New Republic, Feb 91998 p. 16.
[22] Armour, Leslie, "Economics and social reality: Professor O'Neal and the problem of culture", International Journal of Social Economics, Sept-Nov 1995.
[23] Weber, Max, The Protestant Ethic and The Spirit of Capitalism, p.181.

The Research

It is appropriate to begin our tour through the data by looking at a scatter diagram that describes the connection between GDP per capita in 1988 and the percentage of the population of the 80 countries included in the data that are considered to be Protestant in 1988. (Graph 1, Appendix 1)

As can be observed in graph 1, there seems to be some positive correlation between the two variables. Although there are several rich countries, that are not predominantly Protestant, most of those who are, have GDP per capita in US dollars around $15.000. If a regression line is drawn through the scatter diagram as in graph 2 (Appendix 1), it can be seen that the line is positively sloping. According to Weber's theory we would not see such a positive slope for GDP and Catholics or Orthodox[24] Christians. That is represented in graph 3 (Appendix 1), which turns out to be as would be expected from Weber's theory.

The slightly positive slope of the regression line is not significantly different from zero, so judging from the simplified view of the pictures, the effect of non-Protestant Christianity on GDP per capita is most probably nil.

But it is not enough to simply consider scatter diagrams. The subject should be met in a more rigorous manner.

In the model by Sachs and Warner the variables are:

Policy variables: (1) openness to trade
(2) market efficiency
(3) national saving rates

Structural variables: (4) initial income
(5) physical access to port facilities
(6) natural resource abundance

In their paper they regress the following simpler version of their equation:

$$g' = \beta_0 - \beta'_1 Z' + \beta_2 y'_0 \qquad (1)$$

where g' is the growth rate, Z' is the vector of structural and policy characteristics, and y'_0 is the countries initial log level of per capita income.

The openness to trade variable and market efficiency variable can be looked upon as one seperated variable, since for the former they use what they call SOPEN, and was developed by themselves in a previous paper,[25] and the Index of Economic Freedom of The Heritage Foundation, which they modify to remove the sub-index on trade

[24] The only predominantly Orthodox country in the data is Greece, since most of Central- and Eastern-European countries are excluded for beforementioned reasons. It should thus not distort the picture much to add Orthodox Christians to the Roman Catholics, when shown in contrast to the Protestants.
[25] Sachs, Jeffrey D. & Andrew M. Warner, "Economic Reform and the Process of Global Integration," Brookings Papers on Economic Activity, 1995, pp. 1-118.

policy. We thus combine this variable anew, and let the Index of Economic Freedom stand by itself. The year for the Index is 1994, and thus it might be stated that it is somewhat ambiguous, but here it is not used to quantify the effect of economic freedom on growth, but rather as an indication of the policies followed in the countries in question. Although they may have changed somewhat dramatically in the time period observed, it is used here for the lack of a better variable. It also proved to be highly significant in the regression.

For the national savings rate I use a variable measuring the ratio of real gross domestic investment (private plus public) to real GDP, I/Y, measured as decade averages for 1965 - 1985, from the book by Barro and Sala-I-Martin.[26] Initial income is GDP per capita in 1960 from the Penn World Tables.[27] The physical access to port facilities variable is constructed as prescribed by Sachs and Warner, as a variable between 0 and 1. A country with container port facilities is given a value of zero, a landlocked country without navigable rivers to the sea a value of 1. Coastal economies without container ports are given the value 0.1 and landlocked countries with navigable river access to container ports 0.2.

The natural resource abundance is constructed as the percentage share of fuels, minerals and metals of merchandise exports in 1965. Sachs and Warner use the ratio of natural resource exports to GDP in the base year of their research to estimate the possible "Dutch disease"[28] effects on growth and expect resource rich economies to grow less rapidly than resource-poor economies.

I added the proportions of Protestants and Catholics in the 80 countries to this equation, and also a variable accounting for the years of which the countries have been under colonial rule in the twentieth century. This is done as a reaction to the criticism of Sachs' and Warner's paper by Professor Tetteh Kofi of the University of San Francisco,[29] that their regression does not take historical and institutional factors into account. I belive that the religion variables and this colonial variable answer for these factors in some manner.

At first I ran a regression excluding my own variables, to test for my version of Sachs' and Warner's model, and my results seem to be very similar to theirs, with the exception that my regression did not find any "Dutch disease" related to the natural resource abundance. On the contrary I found a slight positive effect, but my variable is not excactly the same as theirs, and it is not important for this study so I will make no more of it. The results can be seen in table 1, Appendix 2.

Then it is time for the following modified model:

(2) $g_i = \beta_0+\beta_1(prot)+\beta_2(cath)+\beta_3(IEF)+\beta_4(inve)+\beta_5(col)+\beta_6(land)+\beta_7(natr)+\beta_8 y_0+\varepsilon_i$

[26] Barro, Robert J. & X. Sala-I-Martin, Economic Growth, McGraw-Hill, 1995.
[27] www.chass.utoronto.ca
[28] "Dutch disease": Problems resulting from shifts in production due to the discovery of a major natural resource.
[29] Kofi, Tetteh, "Comments on Jeffrey D. Sachs and Andrew M. Warner, Sources of Slow Growth in African Economies," Class handout in "Economic Development I, ECON672," fall 1997.

where g_i is the growth rate = log(GDPper capita l988) - log(GDP per capita 1960)/t, t=28, and y_0 is the log of GDP per capita 1960. The results can be seen in table 2, Appendix 2.

The table shows that all the included variables are significantly different from zero within the 95% level, and the R^2 is higher than in the Sachs - Warner regression, so it is safe to assume the new variables add some explanatory power to the model. It is not surprising to see that being a colony for the better half of the twentieth century has a significant negative effect on economic growth. The reasons for this might be that the institutions set up in these countries were to serve the colonizing states needs for raw material and natural resources, rather than to promote the economic growth of the colonies. These institutions most probably prevail after they become independent, and thus stunt growth.

What is surprising though is that the Protestant and Catholic variables seem to have a negative relation to growth, and the Protestant variable even more so than the Catholic. This requires some further investigation.

Weber was writing his book in the beginning of the twentieth century, when the Occident was already a lot richer than the rest of the world. If anything, the gap had widened significantly by 1960, which is the base year for our regression. It was thus unlikely to see the same results emerging if the base year was moved back to 1910, and a modified regression repeated.[30] I could not use the IEF for 1994 in the regression, the landlockedness variable makes no sense because of differences in infrastructure since 1900, and the investment ratio between 1960 and 1988 could not be used either, so the modified regression was:

(3) $$g_i = \beta_0+\beta_1(prot00)+\beta_2(cath00)+\beta_3(col)+\beta_4(natr)+\beta_5 y_0+\varepsilon_i$$

where g_i = log(GDPper capita1960) - log(GDP per capita 1910)/t, t = 50, and y_0 is the log of GDP per capita 1910. The variables prot00 and cath00 are the proportions of Protestants and Catholics in the year 1900. The results can be seen in table 3, Appendix 2, (and on graphs 4a and 4b in Appendix 1).

This result is more like what could be expected from Weber's hypothesis. The Protestant countries grow faster than the Catholic countries from 1910 to 1960. That is the case, although similar patterns could be seen in GDP per capita in Protestant countries with respect to GDP per capita in Catholic countries in 1910, that is, the Protestants were already richer back then.

That suggests that the negative trend of Protestantism w.r.t. growth, that is observed in table 2, is not only due to the convergence between rich and poor nations, predicted by the Solow model of growth, but rather, that the growth in the Protestant North and West has slowed down relative to growth in Catholic countries.

[30] In the tables in Barro's book, I was able to find GDP per capita in 29 countries in 1910 and 1913 in 1985 US prices, which fit the data in the Penn World tables. I have 16 currently developed economies and 14 currently less developed economies. The GDP in 1913 fits the LDC's.

Conclusions

It is safe to conclude that there seems to be a positive correlation between predominantly Protestant populations and economic growth in the former half of the twentieth century but much less so in the latter half, when economic growth in the predominantly Catholic countries in Europe and South America starts to take off.

We do observe a negative coefficient of both the Catholic and Protestant nations between 1960 and 1988. The assumption can thus only be that the Protestant edge, possibly more or less correctly described by Weber, has dissappeared. That conforms to a study by Todd P. Steen on the impact of religion on the earnings and human capital of American men in over ten years. He noted that with various economic and demographic characteristics held constant, men raised as Catholics had significantly higher earnings than men raised as Protestants. Other papers have shown less significance of difference.[31]

Thus what might have been true in the nineteenth century, preceding the writing of Weber's book, does not seem to be true today. The "spirit of capitalism" has conquered a good part of the world. Although it may have originated in the hard working Protestant communities, hoping to manifest by material wealth their salvation, bringing them wealth as the world had never seen before, it seems now to belong to those societies willing to embrace it, regardless of religious beliefs. If there remain in the world religious beliefs, or social values derived thereof, that inhibit its embrace is another question.

[31] Steen, Todd P. "Religion and Earnings: Evidence from the NLS Youth Cohort," International Journal of Social Economics, Jan 1996.

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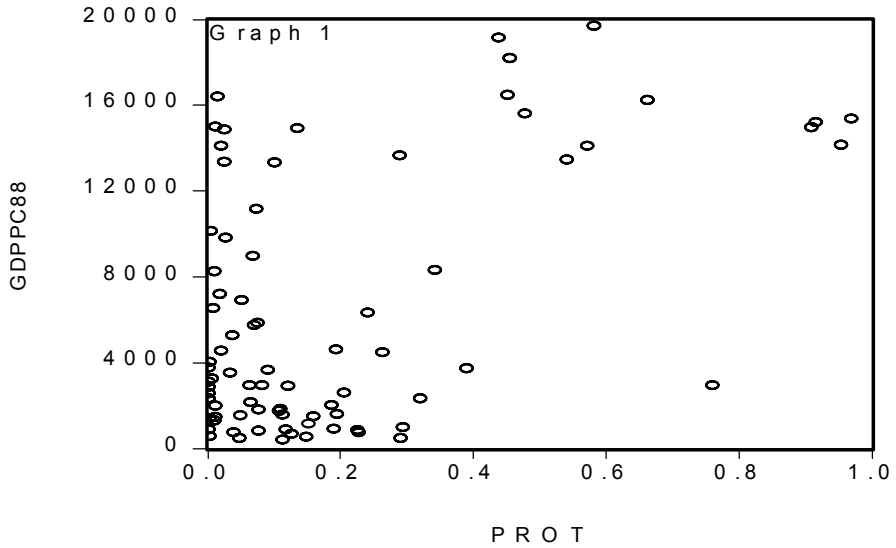
Websites

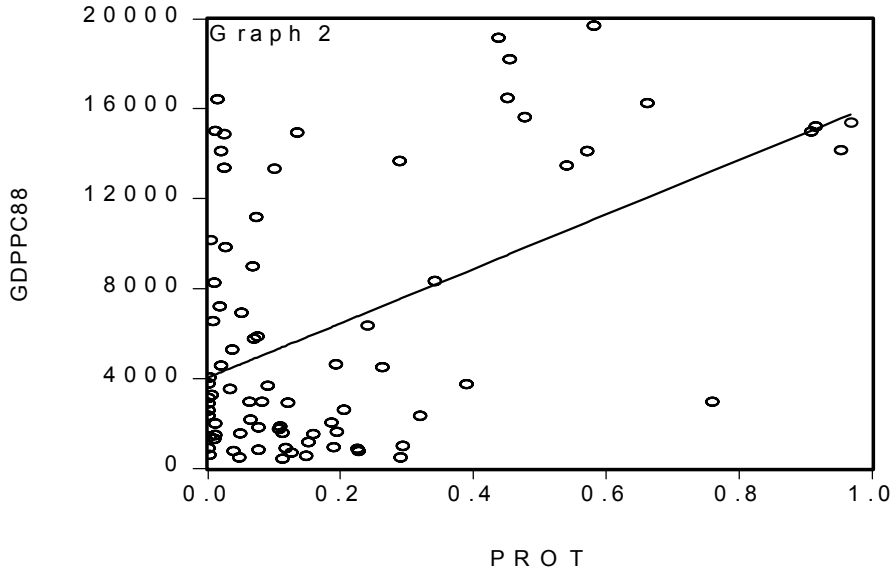
The University of Toronto, Penn World Tables: www.chass.utoronto.ca

World Bank: www.worldbank.org

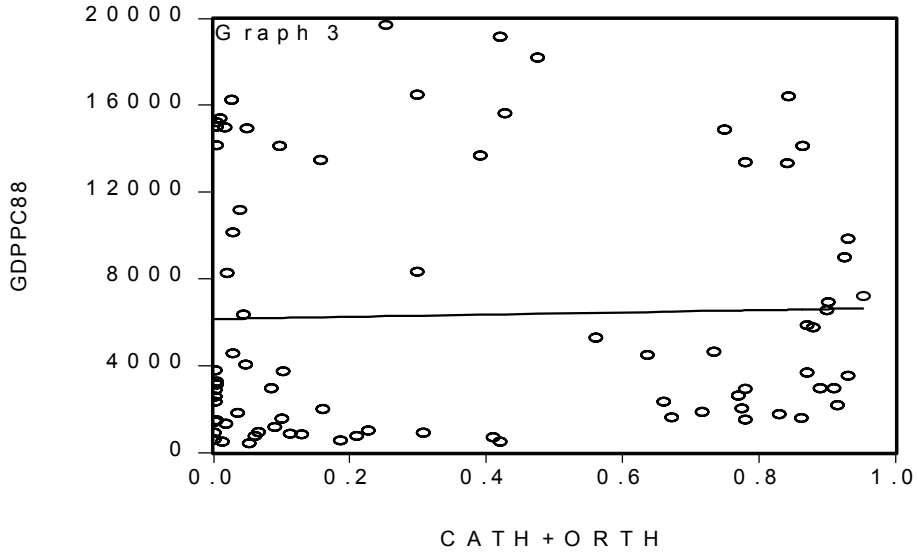
Appendix1: Graphs



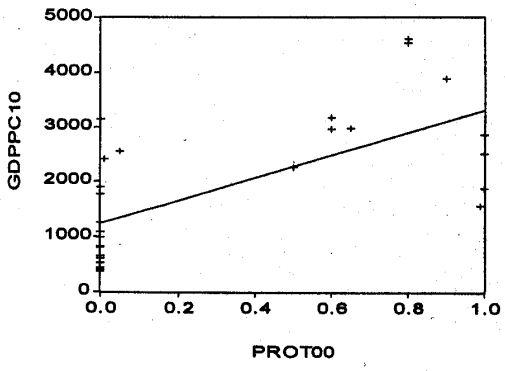
GDPPC88 vs. PROT



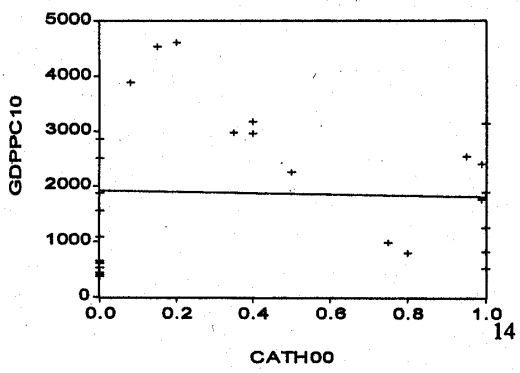
GDPPC88 vs. CATH+ORTH



Graph 4a



Graph 4b



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Appendix 2: Tables

Table 1

Dependent Variable: (LOG(GDPPC88)-LOG(GDPPC60))/28
Included observations: 80

Variable	Coefficient (β_i)	t-Statistic		
C	0.172215	10.26719***	**R-squared**:	0.695524
IEF	-0.016296	-6.353348***	**Adjusted R-squared:**	0.674951
INVESTMENT	0.116770	5.629105***		
LANDLOCKEDNESS	-0.034482	-6.045303***		
NATURAL RES	0.010912	2.352475**		
LOG(GDPPC60)	-0.012689	-6.253304***		

*** Significant at 1% level
** Significant at 5% level
* Significant at 10% level

Table 2

Dependent Variable: (LOG(GDPPC88)-LOG(GDPPC60))/28
Included observations: 80

Variable	Coefficient (β_i)	t-Statistic		
C	0.170999	9.385366***	**R-squared:**	0.737922
PROT	-0.015156	-2.592329**	**Adjusted R-squared:**	0.708392
CATH	-0.011451	-2.671595***		
IEF	-0.015547	-6.360637***		
INVESTMENT	0.113824	5.745225***		
COLONIAL RULE	-0.011909	-2.033570**		
LANDLOCKEDNESS	-0.032230	-5.901003***		
NATURAL RES	0.011116	2.503636**		
LOG(GDPPC60)	-0.011157	-4.812915***		

*** Significant at 1% level
** Significant at 5% level
* Significant at 10% level

Table 3

Dependent Variable: (LOG(GDPPC60)-LOG(GDPPC10))/50
Included observations: 29

Variable	Coefficient (β_i)	t-Statistic		
C	0.066290	5.219618***	**R-squared:**	0.748452
PROT00	0.017934	5.407806***	**Adjusted R-squared:**	0.693768
CATH00	0.011348	4.295442***		
COLONIAL RULE	-0.018211	-3.937740***		
NATURAL RES 65	-0.012044	-4.887984***		
LOG(GDPPC10)	-0.010659	-6.039204***		

*** Significant at 1% level
** Significant at 5% level
* Significant at 10% level