Examen « Croissance Économique mondiale»
Février 2007
Guillaume Daudin

Temps disponible : 3 heures

Documents autorisés : Une feuille de notes (manuscrites ou imprimées) recto-verso.
Vous pouvez rédiger en anglais ou en français.

1) Que suggèrent les documents suivants sur la nature et l'ampleur de la relation entre les pratiques religieuses mensuelles et la croissance économique ? (la variable expliquée est bien le taux de croissance annuel) (2 points).

Table 3
Means and Standard Deviations of Variables

Variable	Mean	Standard deviation
Weekly church attendance	0.24	0.21
Monthly church attendance	0.36	0.23
Belief in heaven	0.55	0.22
Belief in hell	0.38	0.21
Belief in after-life	0.58	0.17
Belief in God in some form	0.80	0.14
Religious person	0.61	0.20
log[x/(1-x)] for:		
monthly attendance	-0.74	1.20
belief in heaven	0.33	1.15
belief in hell	-0.55	1.06
Log of per capita GDP	9.37	0.69
Years of education (years)	8.29	2.11
Urbanization rate	0.70	0.15
Life expectancy at age 1 (years)	74.1	4.1
1/(life expect. at age 1) (x 100)	1.35	0.084
Population share > 65	0.112	0.041
Population share < 15	0.238	0.073
Religious pluralism	0.29	0.23
State religion	0.33	0.47
Regulation of religion	0.37	0.48
Communist regime	0.23	0.42
Catholic fraction	0.46	0.40
Eastern religion fraction	0.073	0.240
Hindu fraction	0.012	0.086
Jewish fraction	0.015	0.099
Muslim fraction	0.043	0.147
Orthodox fraction	0.077	0.211
Protestant fraction	0.29	0.34
Other religion fraction	0.022	0.067
Non-religious fraction	0.107	0.123

Note: The columns show the (unweighted) means and standard deviations of the variables used in the statistical analysis of Table 2, along with some other variables. The sample for most variables is the set of observations for which data are available for church attendance or belief in heaven and for the explanatory variables used in Table 2. For the religious belief variables, the set of observations is smaller. The religion fractions, aside from non-religious, are relative to the population of adherents to some religion.

Notes to Table 4

Variables: The dependent variables are the growth rates of real per capita GDP over 1965-75, 1975-85, and 1985-95. The explanatory variables that are not shown are the log of per capita GDP in 1965, 1975, and 1985; years of male secondary and higher school attainment in 1965, 1975, and 1985; the reciprocal of life expectancy at age one in 1960, 1970, and 1980; the average ratio over each period of total investment to GDP; the log of the total fertility rate in 1960, 1970, and 1980; the average ratio for each period of exports plus imports to GDP, filtered for the usual relation of this ratio to the logs of population and area; the average ratio for each period of government consumption (net of outlays on defense and education) to GDP; the growth rate of the terms of trade over each period, interacted with the average ratio of exports plus imports to GDP; the average of the Political Risk Services subjective indicator of maintenance of the rule of law (the value for 1982 or 1985 appears in the first two equations); the average for each period of the Freedom House subjective measure of democracy (electoral rights) and its square; and the consumer price inflation rate for each period. Columns 2, 4, and 6 include the shares for the seven religion categories shown. These shares apply to persons expressing adherence to some religion, and the Catholic share is omitted as a normalization. The monthly church attendance and belief variables are entered, as in Table 2, as log[x/(1-x)], where x is the fraction attending or believing. Separate constants are included for each period. For data sources, see the notes to Table 2.

Estimation: Estimation is by three-stage least squares, using beginning-of-period or lagged values as instruments (except that measures of colonial status appear instead of the lagged inflation rate). The instrument lists exclude the church attendance and belief variables but include the seven religion shares along with the dummy for the presence of a state religion, the dummy for the existence of state regulation of religion, and the pluralism indicator for religious diversity (in 1970 for the first two equations and in 1980 or 1990 for the third equation).

Statistics: The table shows the estimated coefficient of each variable. The value in parentheses is the standard error of each coefficient estimate. The p-values refer to tests of the hypothesis that the coefficients of the church attendance and religious belief variables are jointly zero or that the coefficients of the religion share variables are jointly zero. The R-squared values apply separately to each of the three time periods for economic growth.

Table 4
Regressions for Economic Growth
(standard errors of coefficients are in parentheses)

Explanatory variable: (a group of other variables is included but not shown)	(1)	(2)	(3)	(4)	(5)	(6)
Monthly church attendance	-0.0095 (0.0018)	-0.0156 (0.0044)	-0.0104 (0.0023)	-0.0123 (0.0043)	-0.0092 (0.0020)	-0.0154 (0.0046)
Belief in hell	0.0094 (0.0025)	0.0140 (0.0058)	--	--	0.0104 (0.0040)	0.0174 (0.0083)
Belief in heaven	--	--	0.0069 (0.0029)	0.0076 (0.0048)	-0.0012 (0.0040)	0.0039 (0.0068)
Eastern religion share	--	-0.010 (0.011)	--	0.003 (0.009)	--	-0.013 (0.012)
Hindu share	--	-0.034 (0.016)	--	-0.030 (0.017)	--	-0.040 (0.018)
Jewish share	--	-0.004 (0.014)	--	0.006 (0.013)	--	-0.006 (0.015)
Muslim share	--	-0.032 (0.015)	--	-0.012 (0.010)	--	-0.034 (0.015)
Orthodox share	--	-0.050 (0.021)	--	-0.029 (0.017)	--	-0.051 (0.021)
Protestant share	--	-0.015 (0.007)	--	-0.018 (0.008)	--	-0.012 (0.008)
Other religion share	--	-0.001 (0.015)	--	-0.001 (0.016)	--	-0.001 (0.015)
p-value for attendance and belief(s)	0.000	0.001	0.000	0.009	0.000	0.002
p-value for religion shares	--	0.001	--	0.001	--	0.001
No. of countries and total observations	41, 118	41, 118	41, 118	41, 118	41, 118	41, 118
No. of observations for each period	38, 41, 39	38, 41, 39	38, 41, 39	38, 41, 39	38, 41, 39	38, 41, 39
R-squared values for each period	.39, .77, .36	.67, .63, .25	.36, .68, .32	.66, .60, .36	.39, .78, .35	.65, .63, .19

Barro, Robert J. and Rachel M. McCleary. 2003. "Religion and Economic Growth." *NBER Working paper*:9682.

2) Crafts estime que les salaires représentaient 60% des revenus britanniques entre 1760 et 1873 et les revenus du capital 40%. À partir de la table suivante, donnez son estimation du taux de croissance annuel du stock de capital britannique en 1760-1780, 1780-1831 et 1831-1873. Quelle méthode utilisez-vous pour faire ce calcul ? (2 points)

TABLE 1
ACCOUNTING FOR GROWTH DURING THE BRITISH INDUSTRIAL REVOLUTION
(percentage per year)

	Contributions from			
	Output Growth	Capital Stock Growth	Labor Force Growth	TFP
Crafts				
1760–1780	0.6	0.25	0.35	0.0
1780–1831	1.7	0.60	0.80	0.3
1831–1873	2.4	0.90	0.75	0.75

(Crafts, Nick F.R. 2004. "Productivity Growth in the Industrial Revolution: A New Growth Accounting Perspective." *Journal of Economic History*, 64:2.)

3) À l'aide de vos connaissances historiques et économiques, et dans la perspective du cours, faites une présentation critique du texte suivant : (16 points)

Intellectual-Property Rights and Wrongs (August 2005)
Joseph E. Stiglitz

Joseph E. Stiglitz, a Nobel laureate in economics, is Professor of Economics at Columbia University and was Chairman of the Council of Economic Advisers to President Clinton and Chief Economist and Senior Vice President at the World Bank. His most recent book is The Roaring Nineties: A New History of the World's Most Prosperous Decade.

Last October, the General Assembly of the World Intellectual Property Organization (WIPO) decided to consider what a development-oriented intellectual property regime might look like. The move was little noticed, but, in some ways, it was as important as the World Trade Organization's decision that the current round of trade negotiations be devoted to development. Both decisions acknowledge that the current rules of the international economic game reflect the interests of the advanced industrial countries – especially of their big corporations – more than the interests of the developing world.

Without intellectual property protection, incentives to engage in certain types of creative endeavors would be weakened. But there are high costs associated with intellectual property. Ideas are the most important input into research, and if intellectual property slows down the ability to use others' ideas, then scientific and technological progress will suffer.

In fact, many of the most important ideas – for example, the mathematics that underlies the modern computer or the theories behind atomic energy or lasers – are not protected by intellectual property. Academics spend considerable energy freely disseminating their research findings. I am pleased when someone uses my ideas on asymmetric information – though I do appreciate them giving me some credit. The growth of the "open source" movement on the Internet shows that not just the most basic ideas, but even products of

enormous immediate commercial value can be produced without intellectual property protection.

By contrast, an intellectual property regime rewards innovators by creating a temporary monopoly power, allowing them to charge far higher prices than they could if there were competition. In the process, ideas are disseminated and used less than they would be otherwise.

The economic rationale for intellectual property is that faster innovation offsets the enormous costs of such inefficiencies. But it has become increasingly clear that excessively strong or badly formulated intellectual property rights may actually impede innovation – and not just by increasing the price of research.

Monopolists may have much less incentive to innovate than they would if they had to compete. Modern research has shown that the great economist Joseph Schumpeter was wrong in thinking that competition in innovation leads to a succession of firms. In fact, a monopolist, once established, may be hard to dislodge, as Microsoft has so amply demonstrated.

Indeed, once established, a monopoly can use its market power to squelch competitors, as Microsoft so amply demonstrated in the case of the Netscape Web browser. Such abuses of market power discourage innovation.

Moreover, so-called "patent thickets" – the fear that some advance will tread on pre-existing patents, of which the innovator may not even be aware – may also discourage innovation. After the pioneering work of the Wright brothers and the Curtis brothers, overlapping patent claims thwarted the development of the airplane, until the United States government finally forced a patent pool as World War I loomed. Today, many in the computer industry worry that such a patent thicket may impede software development.

The creation of any product requires many ideas, and sorting out their relative contribution to the outcome – let alone which ones are really new – can be nearly impossible.

Consider a drug based on traditional knowledge, say, of an herb well known for its medicinal properties. How important is the contribution of the American firm that isolates the active ingredient? Pharmaceutical companies argue that they should be entitled to a full patent, paying nothing to the developing country from which the traditional knowledge was taken, even though the country preserves the biodiversity without which the drug would never have come to market. Not surprisingly, developing countries see things differently.

Society has always recognized that other values may trump intellectual property. The need to prevent excessive monopoly power has led anti-trust authorities to require compulsory licensing (as the US government did with the telephone company AT&T). When America faced an anthrax threat in the wake of the September 11, 2001, terrorist attacks, officials issued a compulsory license for Cipro, the best-known antidote.

Unfortunately, the trade negotiators who framed the intellectual-property agreement of the Uruguay trade round of the early 1990's (TRIP's) were either unaware of all of this, or more likely, uninterested. I served on the Clinton administration's Council of Economic Advisors at the time, and it was clear that there was more interest in pleasing the

pharmaceutical and entertainment industries than in ensuring an intellectual-property regime that was good for science, let alone for developing countries.

I suspect that most of those who signed the agreement did not fully understand what they were doing. If they had, would they have willingly condemned thousands of AIDS sufferers to death because they might no longer be able to get affordable generic drugs? Had the question been posed in this way to parliaments around the world, I believe that TRIP's would have been soundly rejected.

Intellectual property is important, but the appropriate intellectual-property regime for a developing country is different from that for an advanced industrial country. The TRIP's scheme failed to recognize this. In fact, intellectual property should never have been included in a trade agreement in the first place, at least partly because its regulation is demonstrably beyond the competency of trade negotiators.

Besides, an international organization already exists to protect intellectual property. Hopefully, in WIPO's reconsideration of intellectual property regimes, the voices of the developing world will be heard more clearly than it was in the WTO negotiations; hopefully, WIPO will succeed in outlining what a pro-developing intellectual property regime implies; and hopefully, WTO will listen: the aim of trade liberalization is to boost development, not hinder it.