

SIS 628
March 27, 2019

Structural Policies, Institutions and Growth

The Growth Report

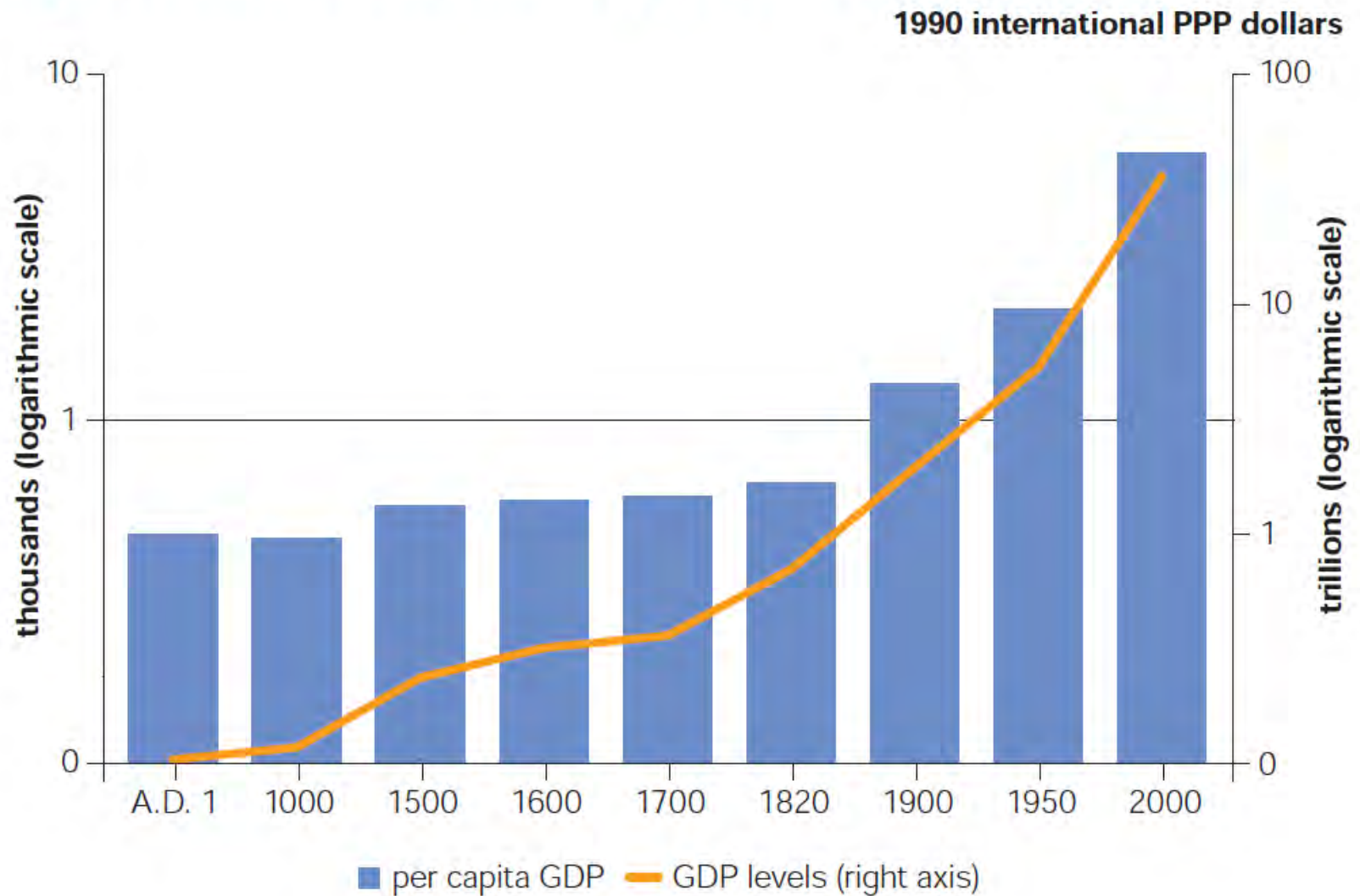
Strategies for Sustained Growth and Inclusive Development

COMMISSION ON GROWTH AND DEVELOPMENT

COMMISSION ON GROWTH AND DEVELOPMENT

- Montek Singh Ahluwalia**, Deputy Chairman, Planning Commission, Government of India, New Delhi
- Edmar Bacha**, Director, Casa Das Garças Institute for Economic Policy Studies, and Senior Adviser, Banco Itaú BBA, Brazil; former Senior Adviser to the Minister of Finance in the implementation of the "Plano Real," and former President of the National Development Bank (BNDES)
- Dr. Boediono**, Governor, Bank Indonesia; former Coordinating Minister for Economic Affairs, Professor of Economics, Gajah Mada University, Indonesia
- Lord John Browne**, Managing Director, Riverstone Europe LLP; former CEO of British Petroleum p.l.c., United Kingdom
- Kemal Derviş**, Administrator, the United Nations Development Programme; former Minister for Economic Affairs and the Treasury, Turkey
- Alejandro Foxley**, Minister of Foreign Affairs; former Minister of Finance, Chile
- Goh Chok Tong**, Senior Minister in Cabinet and Chairman, Monetary Authority of Singapore; former Prime Minister, Singapore
- Han Duck-soo**, Former Prime Minister, Former Deputy Prime Minister, and Former Minister of Finance and Economy, the Republic of Korea
- Danuta Hübner**, Commissioner for Regional Policy, European Commission; former United Nations Under-Secretary General and Executive Secretary of the UN Economic Commission for Europe; former roles in the Polish government: Polish Minister for European Affairs, Minister for European Integration and Deputy Minister for Foreign Affairs, Minister-Head of the Chancellery of the President of the Republic of Poland, Deputy Minister for Trade and Industry
- Carin Jämtin**, Former Minister for International Development Cooperation, Sweden
- Pedro-Pablo Kuczynski**, Former Prime Minister and former Minister of Economy and Finance, Peru
- Danny Leipziger**, Vice President for Poverty Reduction and Economic Management, the World Bank Group; Commission Vice Chair
- Trevor Manuel**, Minister of Finance, South Africa
- Mahmoud Mohieldin**, Minister of Investment, Arab Republic of Egypt
- Ngozi N. Okonjo-Iweala**, Managing Director, the World Bank Group; former Minister of Finance and Foreign Affairs, Nigeria
- Robert Rubin**, Chairman of the Executive Committee, Citigroup Inc.; Former Secretary of the Treasury, United States
- Robert Solow**, Nobel Laureate in Economics; Institute Professor Emeritus, Massachusetts Institute of Technology, United States
- Michael Spence**, Nobel Laureate in Economics; Professor Emeritus, Stanford University; Commission Chair, United States
- Sir K. Dwight Venner**, Governor, Eastern Caribbean Central Bank, St. Kitts and Nevis
- Ernesto Zedillo**, Former President of Mexico; Director, Yale Center for the Study of Globalization, United States
- Zhou Xiaochuan**, Governor, People's Bank of China

Figure 1 Evolution of Global and Per Capita GDP in the Last 2,000 Years



Source: Maddison, Angus. 2007. *Contours of the World Economy, 1–2030 AD*. Oxford, UK: Oxford University Press.

Note: PPP = purchasing power parity.

Table 1 13 Success Stories of Sustained, High Growth

Economy	Period of high growth**	Per capita income at the beginning and 2005***	
Botswana	1960–2005	210	3,800
Brazil	1950–1980	960	4,000
China	1961–2005	105	1,400
Hong Kong, China*	1960–1997	3,100	29,900
Indonesia	1966–1997	200	900
Japan*	1950–1983	3,500	39,600
Korea, Rep. of*	1960–2001	1,100	13,200
Malaysia	1967–1997	790	4,400
Malta*	1963–1994	1,100	9,600
Oman	1960–1999	950	9,000
Singapore*	1967–2002	2,200	25,400
Taiwan, China*	1965–2002	1,500	16,400
Thailand	1960–1997	330	2,400

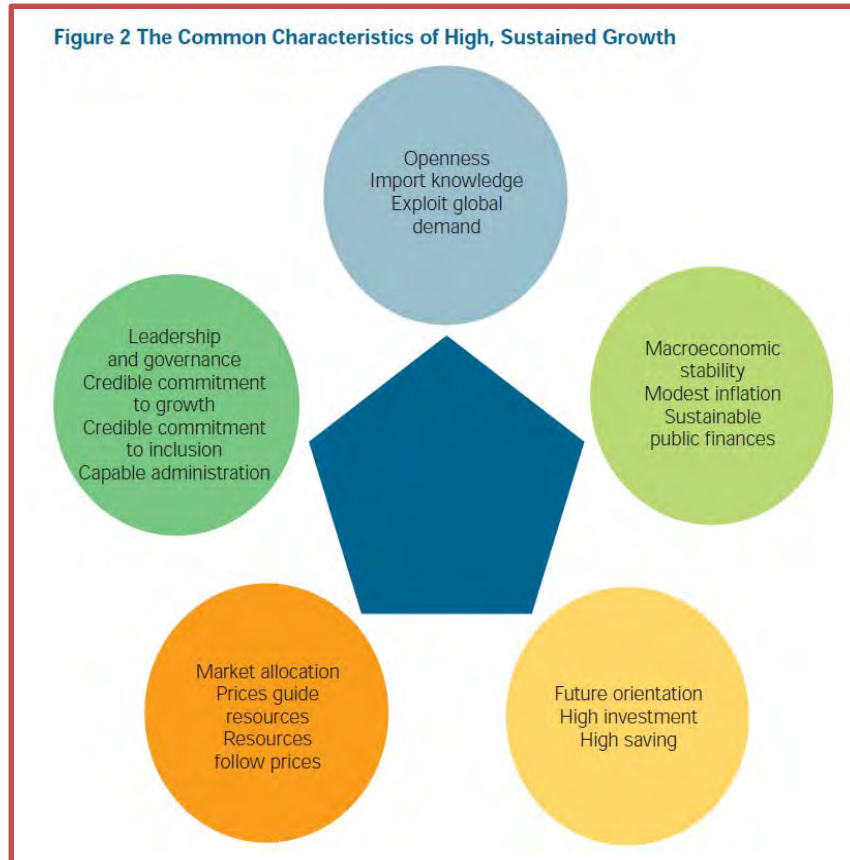
Source: World Bank, World Development Indicators.

*Economies that have reached industrialized countries' per capita income levels.

**Period in which GDP growth was 7 percent per year or more.

***In constant US\$ of 2000.

Figure 2 The Common Characteristics of High, Sustained Growth



1. They fully exploited the world economy
2. They maintained macroeconomic stability
3. They mustered high rates of saving and investment
4. They let markets allocate resources
5. They had committed, credible, and capable governments

Figure 3 Transitions to Higher Incomes

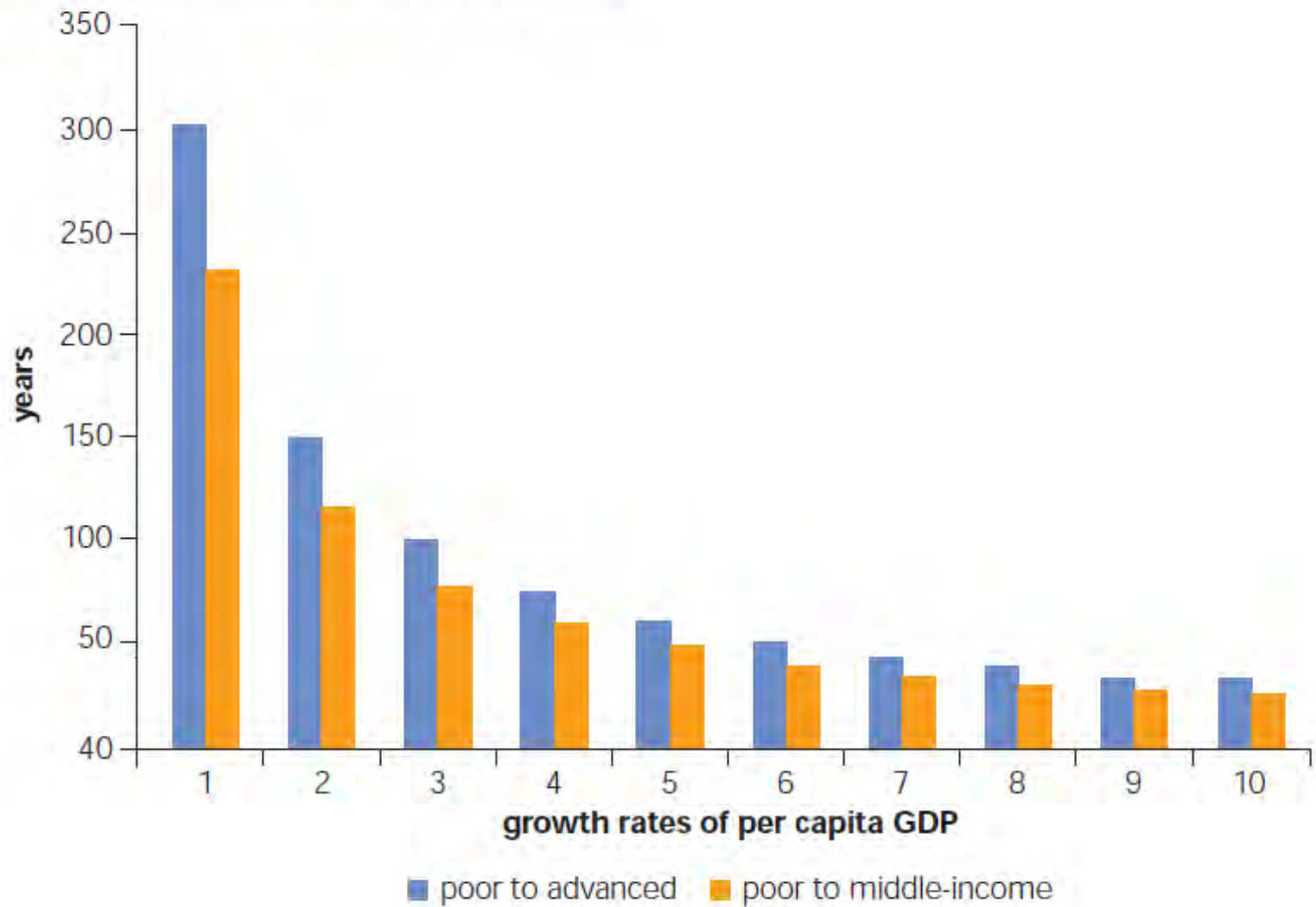
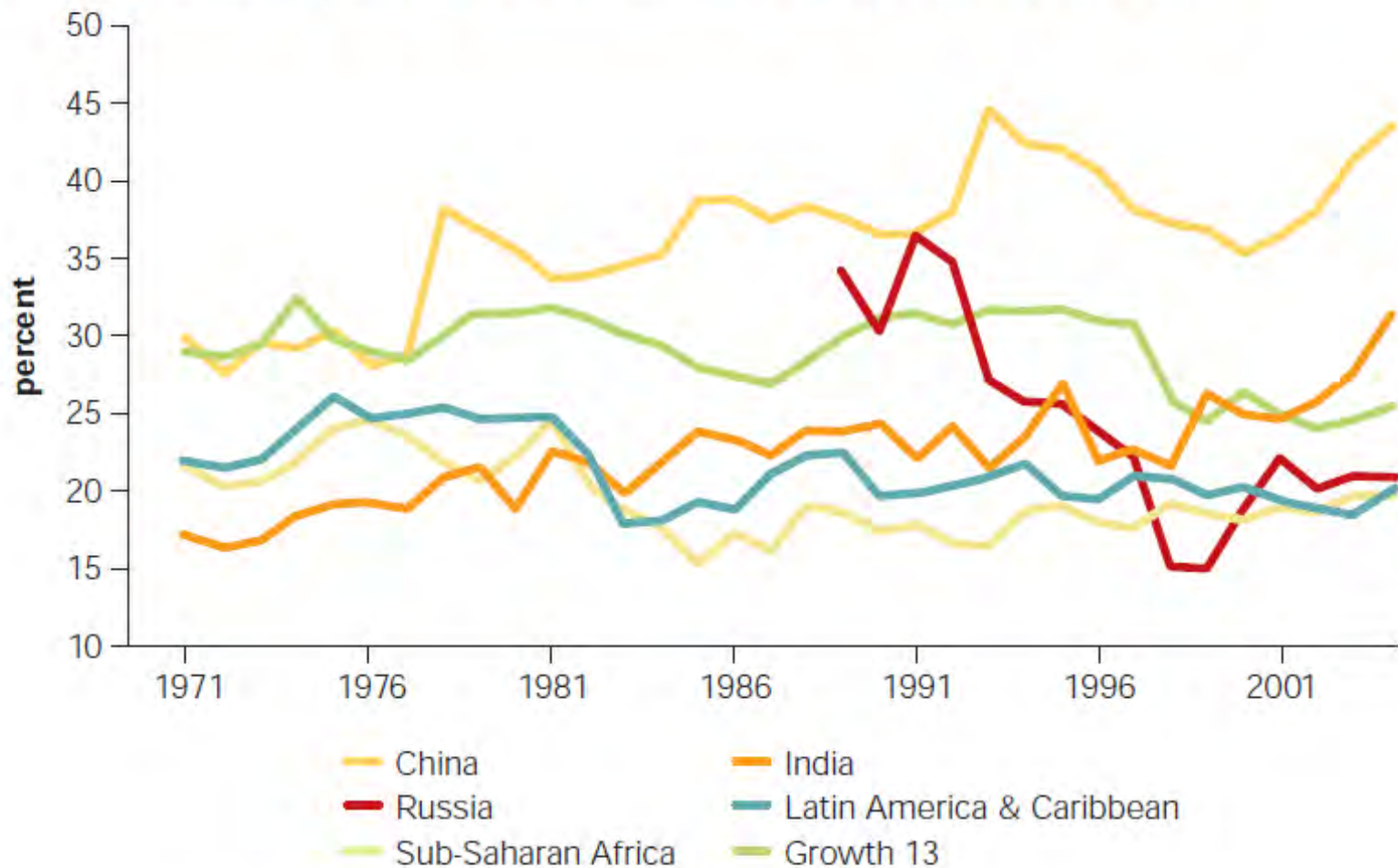


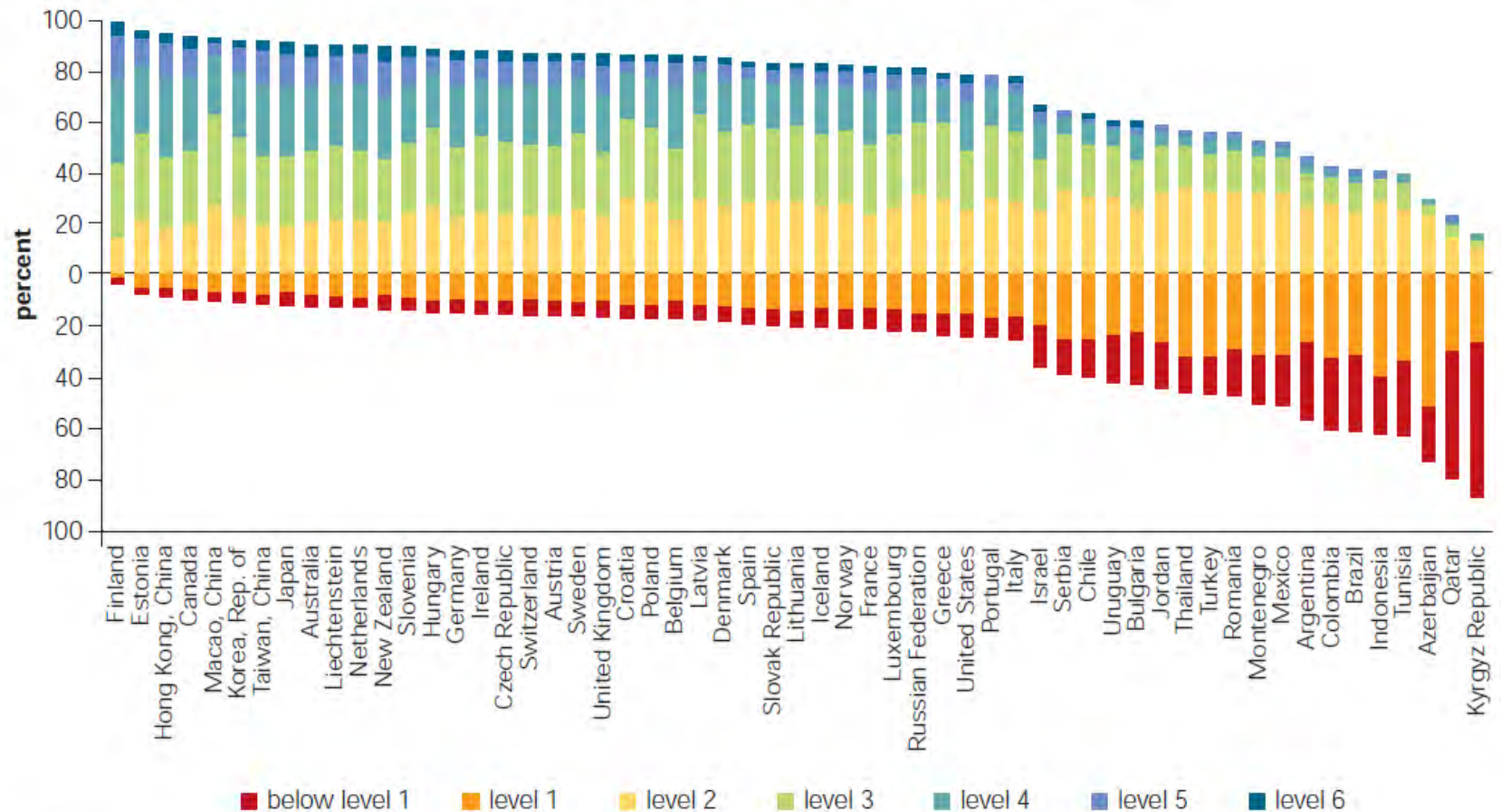
Figure 4 Percentage of GDP, Investment Rates by Growth 13, 1971-2004



Source: World Bank.

Figure 5 PISA Results

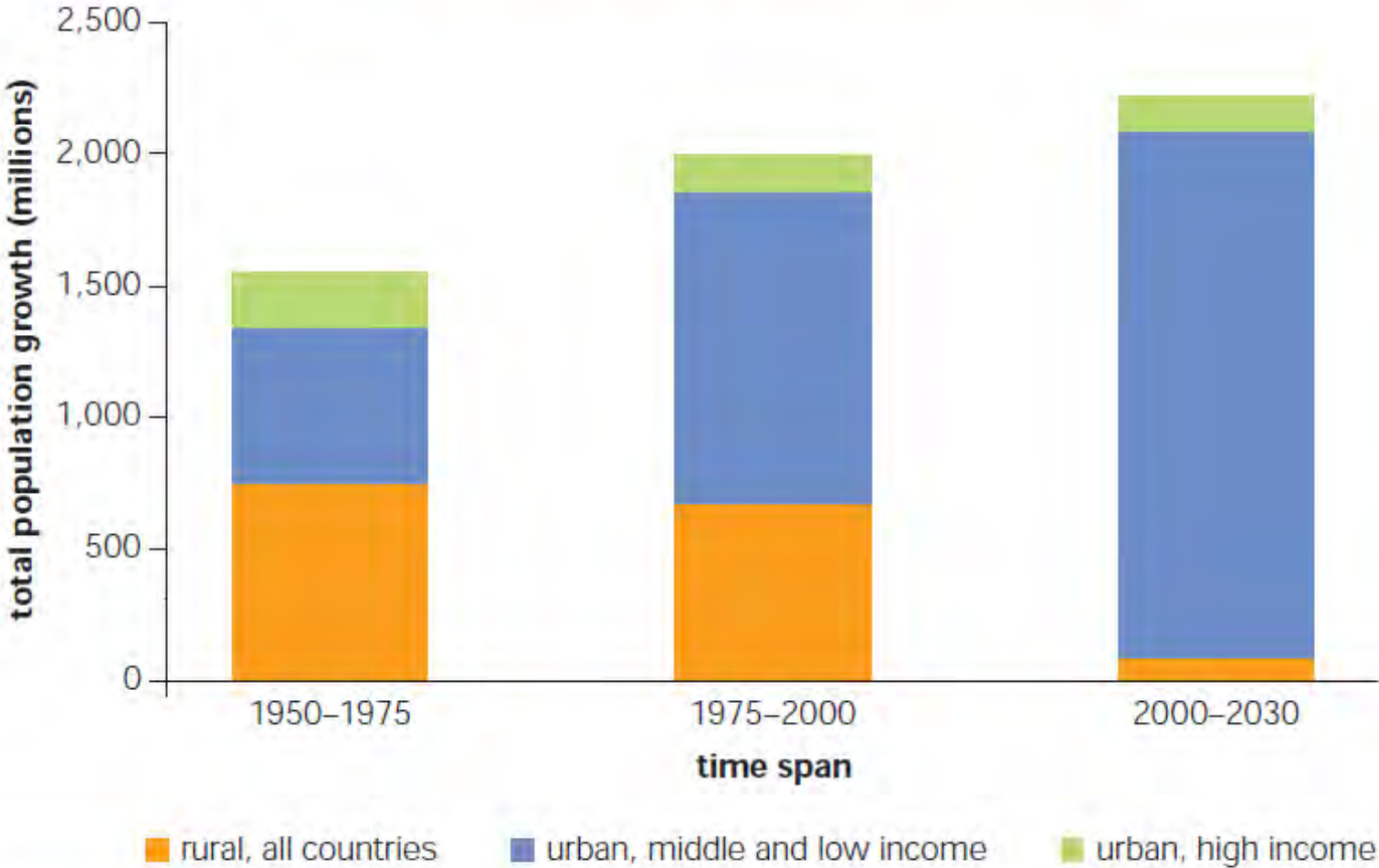
Percentage of students at each proficiency level on the science scale



Source: OECD PISA 2006 database, Table 2.1a. StatLink <http://dc.dod.org/10.1787/141844475532>.

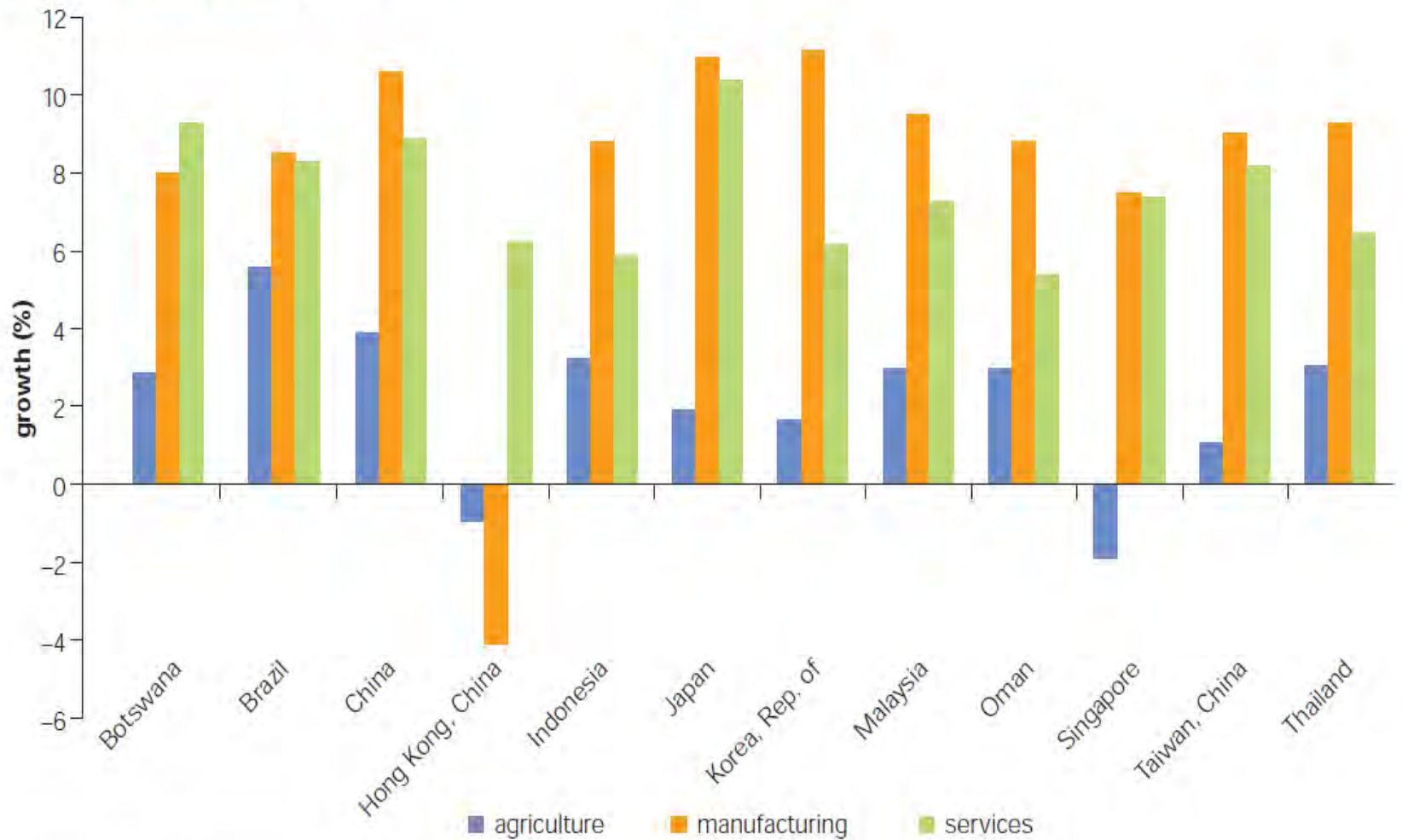
Note: Countries are ranked in descending order of percentage of 15-year-old at Levels 2, 3, 4, 5, and 6. Above the zero line one finds the proportion of students in the country that has higher ratings than level 1. Below the zero line, one finds the proportion of students with level 1 and below.

Figure 6 Population Growth to 2030: Low- and Middle-Income versus High-Income Countries



Source: United Nations Urbanization Prospects.

Figure 7 Growth Rates by Sector



Source: See appendix, p. 114

Bad Ideas

- Subsidizing energy except for very limited subsidies targeted at highly vulnerable sections of the population.
- Dealing with joblessness by relying on the civil service as an “employer of last resort.” This is distinct from public-works programs, such as rural employment schemes, which can provide a valuable social safety net.
- Reducing fiscal deficits, because of short term macroeconomic compulsions, by cutting expenditure on infrastructure investment (or other public spending that yields large social returns in the long run).
- Providing open-ended protection of specific sectors, industries, firms, and jobs from competition. Where support is necessary, it should be for a limited period, with a clear strategy for moving to a self-supporting structure.
- Imposing price controls to stem inflation, which is much better handled through other macroeconomic policies.
- Banning exports for long periods of time to keep domestic prices low for consumers at the expense of producers.

Bad Ideas

- Resisting urbanization and as a consequence underinvesting in urban infrastructure.
- Ignoring environmental issues in the early stages of growth on the grounds that they are an “unaffordable luxury.”
- Measuring educational progress solely by the construction of school infrastructure or even by higher enrollments, instead of focusing on the extent of learning and quality of education.
- Underpaying civil servants (including teachers) relative to what the market would provide for comparable skills and combining this with promotion by seniority instead of evolving credible methods of measuring performance of civil servants and rewarding it.
- Poor regulation of the banking system combined with excessive direct control and interference. In general, this prevents the development of an efficient system of financial intermediation that has higher costs in terms of productivity.
- Allowing the exchange rate to appreciate excessively before the economy is ready for the transition towards higher-productivity industry.

Figure 8 Real GDP Growth in Sub-Saharan Africa



Source: World Bank.



This map was produced by the Map Design Unit of The World Bank. The boundaries, colors, denominations and any other information shown on this map do not imply, on the part of The World Bank Group, any judgment on the legal status of any territory, or any endorsement or acceptance of such boundaries.

Africa's colonial history has left it with an unusual political geography. Although the region's 48 states vary a great deal, they can be grouped into three loose categories: coastal, landlocked, and resource-rich. Countries along the coasts of Africa can ship goods directly to world markets. Landlocked countries, on the other hand, cannot integrate easily with the world economy without the help of their neighbors. Countries in the third category may or may not lie along the coasts, but the commodities they produce are valuable enough to justify the costs of transporting them across even large distances and multiple borders.

Africa's population is distributed fairly equally across these three groups: a third, a third, and a third. This is one of Africa's most distinctive features. Outside the region, 88 percent of the devel-

oping world lives in countries with access to the coast (but no other natural resources). In Africa only a third does. Outside Africa, only 1 percent of the developing world's population lives in landlocked countries that lack natural resources. In Africa, a full third does. This configuration is the result of colonial border-making. In other parts of the world, places that are landlocked and resource-scarce did not become countries. In Africa, they did. The region cannot reverse this legacy of history. It can only try to make the best of it.

Source: Paul Collier and Stephen A. O'Connell, "Opportunities and Choices." Prepared for the synthesis volume of the African Economic Research Consortium's *Explaining African Economic Growth* project.

Note: Collier and O'Connell's paper classifies Sudan and the Democratic Republic of Congo as landlocked based on the judgment that the vast majority of the populations in these two countries have limited access to the coast.

Table 2 Global carbon footprints at OECD levels would require more than one planet^a

	CO ₂ emissions per capita (t CO ₂) 2004	Equivalent global CO ₂ emissions (Gt CO ₂) 2004 ^b	Equivalent number of sustainable carbon budgets ^c
World ^d	4.5	29	2
Australia	16.2	104	7
Canada	20.0	129	9
France	6.0	39	3
Germany	9.8	63	4
Italy	7.8	50	3
Japan	9.9	63	4
Netherlands	8.7	56	4
United Kingdom	9.8	63	4
United States	20.6	132	9

Source: UNDP, Human Development Report 2007, calculations based on Indicator Table 24.

a. As measured in sustainable carbon budgets.

b. Refers to global emissions if every country in the world emitted at the same per capita level as the specified country.

c. Based on a sustainable emissions pathway of 14.5 Gt CO₂ per year.

d. Current global carbon footprint.

Figure 9 Per Capita CO₂ Emissions

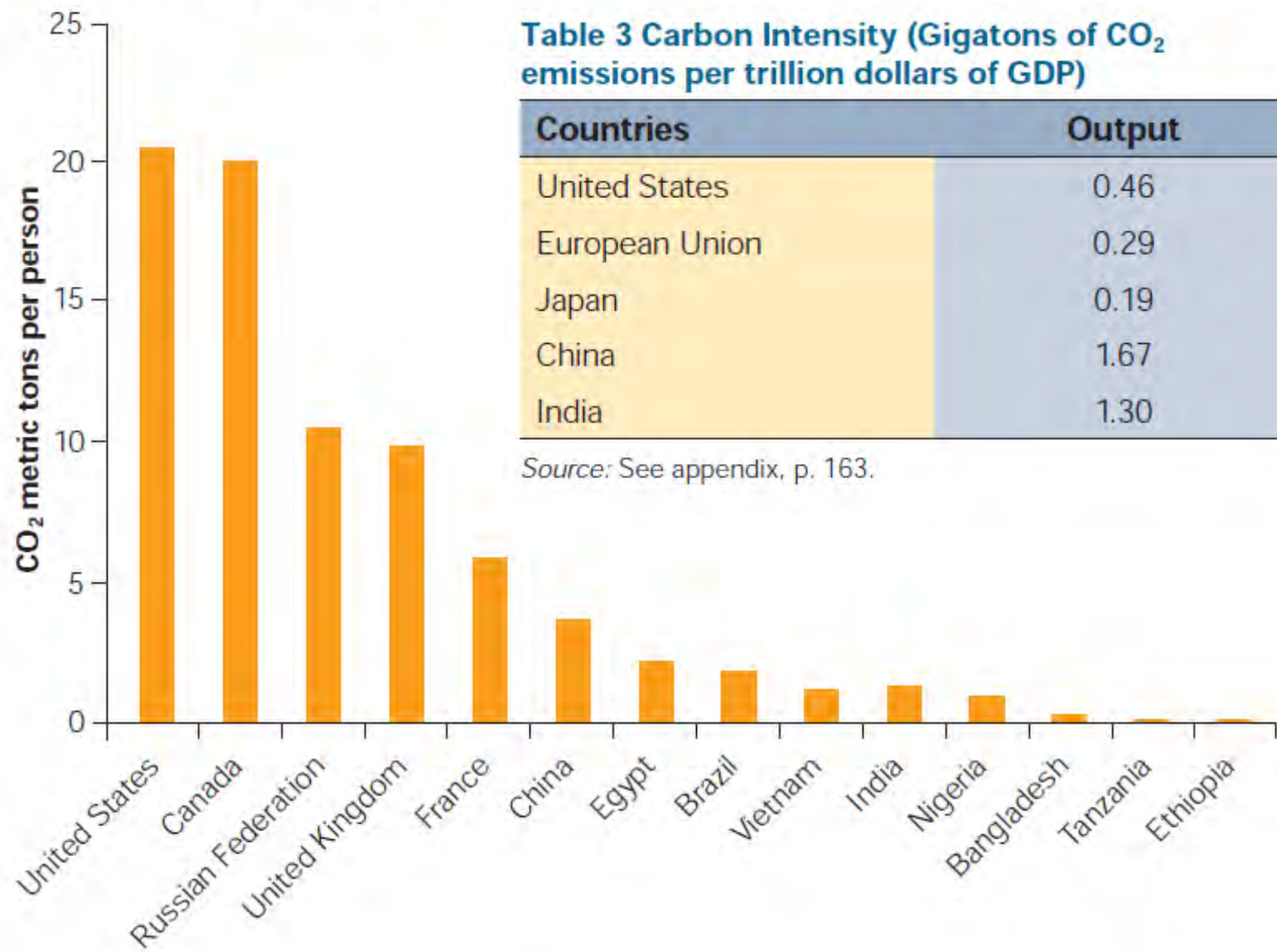


Table 3 Carbon Intensity (Gigatons of CO₂ emissions per trillion dollars of GDP)

Countries	Output
United States	0.46
European Union	0.29
Japan	0.19
China	1.67
India	1.30

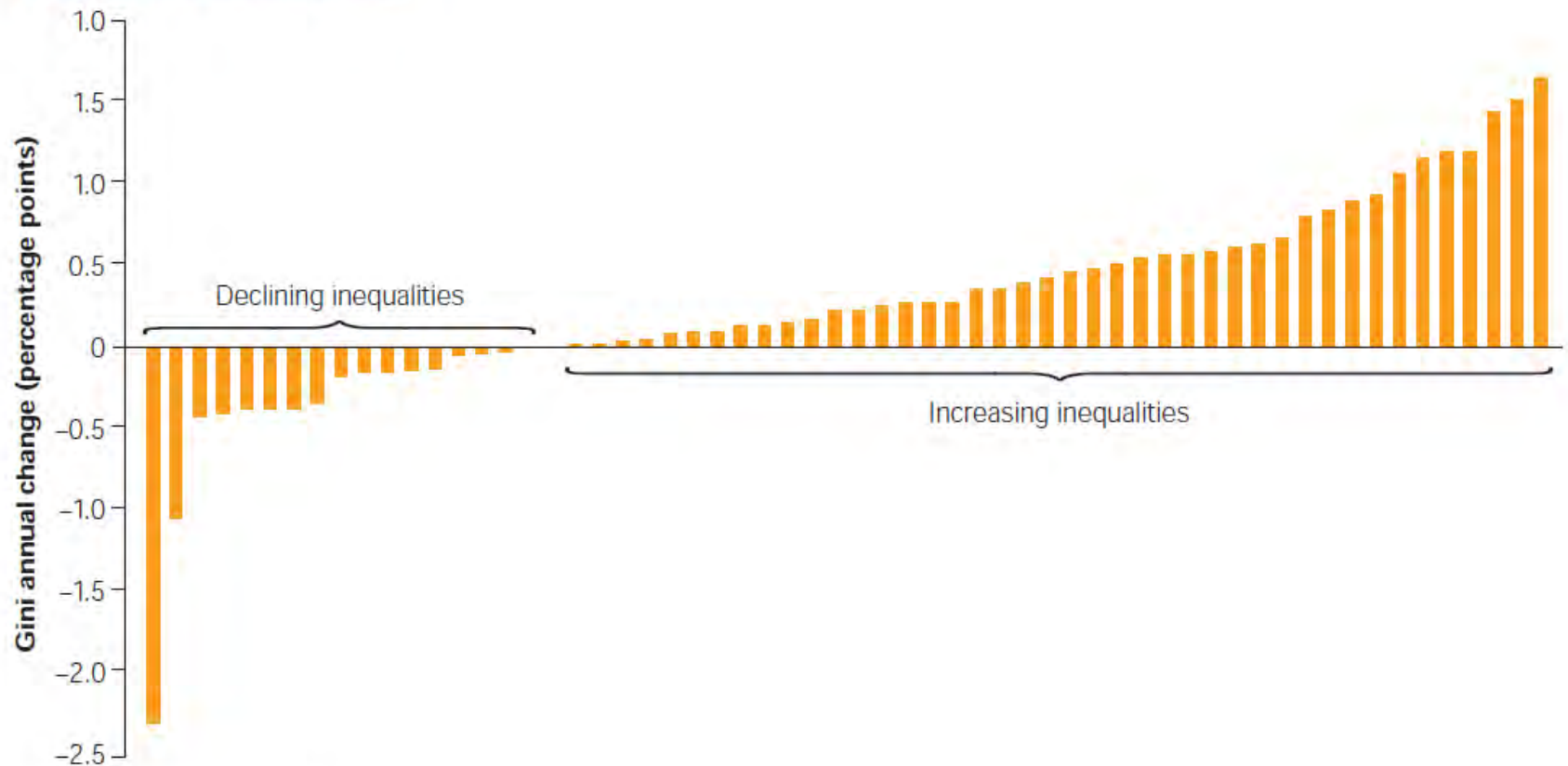
Source: See appendix, p. 163.

Source: UNDP, Human Development Report 2007.

1. The advanced economies should cut emissions first and they should do so aggressively. This will slow the accumulation of carbon in the atmosphere. It will also reveal a great deal about how much it truly costs to cut carbon emissions.
2. More generous subsidies should be paid to energy-efficient technologies and carbon reduction technologies, which will reduce the cost of mitigation.
3. Advanced economies should strive to put a price on carbon.
4. The task of monitoring emissions cuts and other mitigation measures should be assigned to an international institution, which should begin work as soon as possible.
5. Developing countries, while resisting long-term target-setting, should offer to cut carbon at home if other countries are willing to pay for it. Such collaborations take place through the Clean Development Mechanism provisions in the Kyoto protocol. Rich countries can meet their Kyoto commitments by paying for carbon cuts in poorer countries.

6. Developing countries should promise to remove fuel subsidies, over a decent interval. These subsidies encourage pollution and weigh heavily on government budgets.
7. All countries should accept the dual criteria of efficiency and fairness in carbon mitigation. In particular, richer countries, at or near high-income levels, should accept that they will each have the same emissions entitlements per head as other countries.
8. Developing countries should educate their citizens about global warming. Awareness is already growing, bringing about changes in values and behavior.
9. International negotiations should concentrate on agreeing to carbon cuts for more advanced economies, to be achieved 10 or 15 years hence. These mitigation efforts should be designed so as to reveal the true costs of mitigation.

Figure 10 Gini Annual Change



Source: World Bank, Global Monitoring Report 2008.

Note: The time period varies depending on the availability of data. Typically it is from late 1980s and early 1990s to later 1990s and early 2000s.

INSTITUTIONS AS A FUNDAMENTAL CAUSE OF LONG-RUN GROWTH

DARON ACEMOGLU

Department of Economics, MIT, 50 Memorial Drive E52-380b, Cambridge, MA 02142
e-mail: daron@mit.edu

SIMON JOHNSON

Sloan School of Management, MIT, 50 Memorial Drive, Cambridge, MA 02142
e-mail: sjohnson@mit.edu

JAMES A. ROBINSON

Department of Government, WCFIA, Harvard University, 1033 Massachusetts Avenue, Cambridge, MA 02138
e-mail: jrobinson@gov.harvard.edu

The most trite yet crucial question in the field of economic growth and development is: Why are some countries much poorer than others? Traditional neoclassical growth models, following Solow (1956), Cass (1965) and Koopmans (1965), explain differences in income per capita in terms of different paths of factor accumulation. In these models, cross-country differences in factor accumulation are due either to differences in saving rates (Solow), preferences (Cass–Koopmans), or other exogenous parameters, such as total factor productivity growth. In these models there are institutions, for example agents have well defined property rights and exchange goods and services in markets, but differences in income and growth are not explained by variation in institutions.

The first wave of the more recent incarnations of growth theory, following Romer (1986) and Lucas (1988) differed in the sense that they emphasized that externalities from physical and human capital accumulation could induce sustained steady-state growth. However, they also stayed squarely within the neoclassical tradition of explaining differences in growth rates in terms of preferences and endowments. The second wave of models, particularly Romer (1990), Grossman and Helpman (1991) and Aghion and Howitt (1992), endogenized steady-state growth and technical progress, but their explanation for income differences is similar to that of the older theories. For instance, in the model of Romer (1990), a country may be more prosperous than another if it allocates more resources to innovation, but what determines this is essentially preferences and properties of the technology for creating 'ideas'.¹

¹ Although, as we discuss later, some recent contributions to growth theory emphasize the importance of economic policies, such as taxes, subsidies to research, barriers to technology adoption and human capital policy, they typically do not present an explanation for why there are differences in these policies across countries.

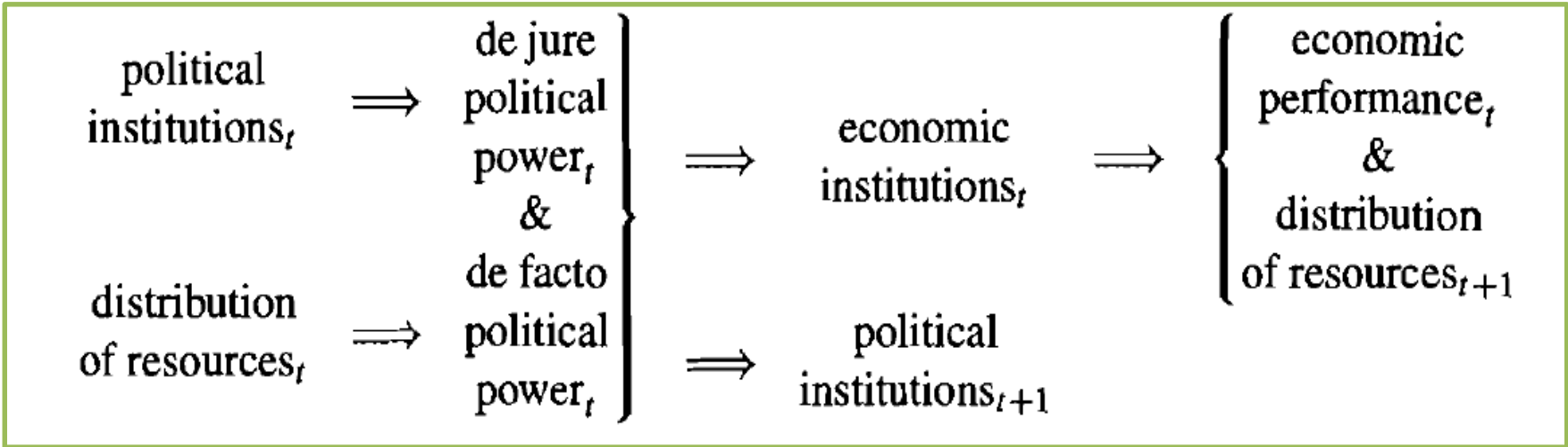
Though this theoretical tradition is still vibrant in economics and has provided many insights about the mechanics of economic growth, it has for a long time seemed unable to provide a *fundamental* explanation for economic growth. As North and Thomas (1973, p. 2) put it: “the factors we have listed (innovation, economies of scale, education, capital accumulation, etc.) are not causes of growth; they *are* growth” (italics in original). Factor accumulation and innovation are only *proximate* causes of growth. In North and Thomas’s view, the fundamental explanation of comparative growth is differences in *institutions*.

What are institutions exactly? North (1990, p. 3) offers the following definition: “Institutions are the rules of the game in a society or, more formally, are the humanly devised constraints that shape human interaction”. He goes on to emphasize the key implications of institutions since, “In consequence they structure incentives in human exchange, whether political, social, or economic”.

Of primary importance to economic outcomes are the *economic institutions* in society such as the structure of property rights and the presence and perfection of markets. Economic institutions are important because they influence the structure of economic incentives in society. Without property rights, individuals will not have the incentive to invest in physical or human capital or adopt more efficient technologies. Economic institutions are also important because they help to allocate resources to their most efficient uses, they determine who gets profits, revenues and residual rights of control. When markets are missing or ignored (as they were in the Soviet Union, for example), gains from trade go unexploited and resources are misallocated. Societies with economic institutions that facilitate and encourage factor accumulation, innovation and the efficient allocation of resources will prosper.

Central to this chapter and to much of political economy research on institutions is that economic institutions, and institutions more broadly, are *endogenous*; they are, at least in part, determined by society, or a segment of it. Consequently, the question of why some societies are much poorer than others is closely related to the question of why some societies have much “worse economic institutions” than others.

Even though many scholars including John Locke, Adam Smith, John Stuart Mill, Arthur Lewis, Douglass North and Robert Thomas, and recently many papers in the literature on economic growth and development, have emphasized the importance of economic institutions, we are far from a useful framework for thinking about how economic institutions are determined and why they vary across countries. In other words, while we have good reason to believe that economic institutions matter for economic growth, we lack the crucial *comparative static* results which will allow us to explain why equilibrium economic institutions differ (and perhaps this is part of the reason why much of the economics literature has focused on the proximate causes of economic growth, largely neglecting fundamental institutional causes).



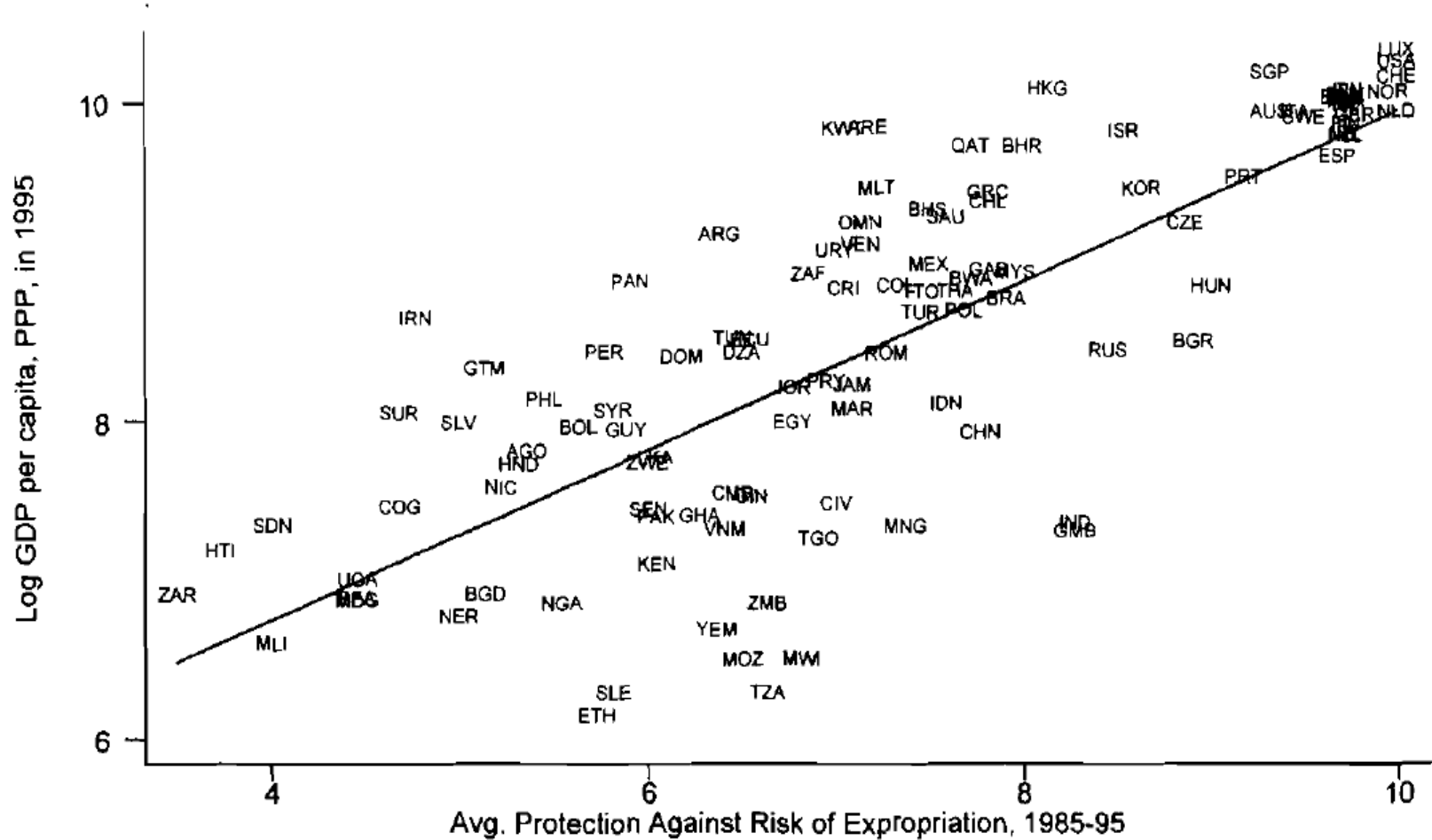


Figure 1. Average protection against risk of expropriation 1985–95 and log GDP per capita 1995.

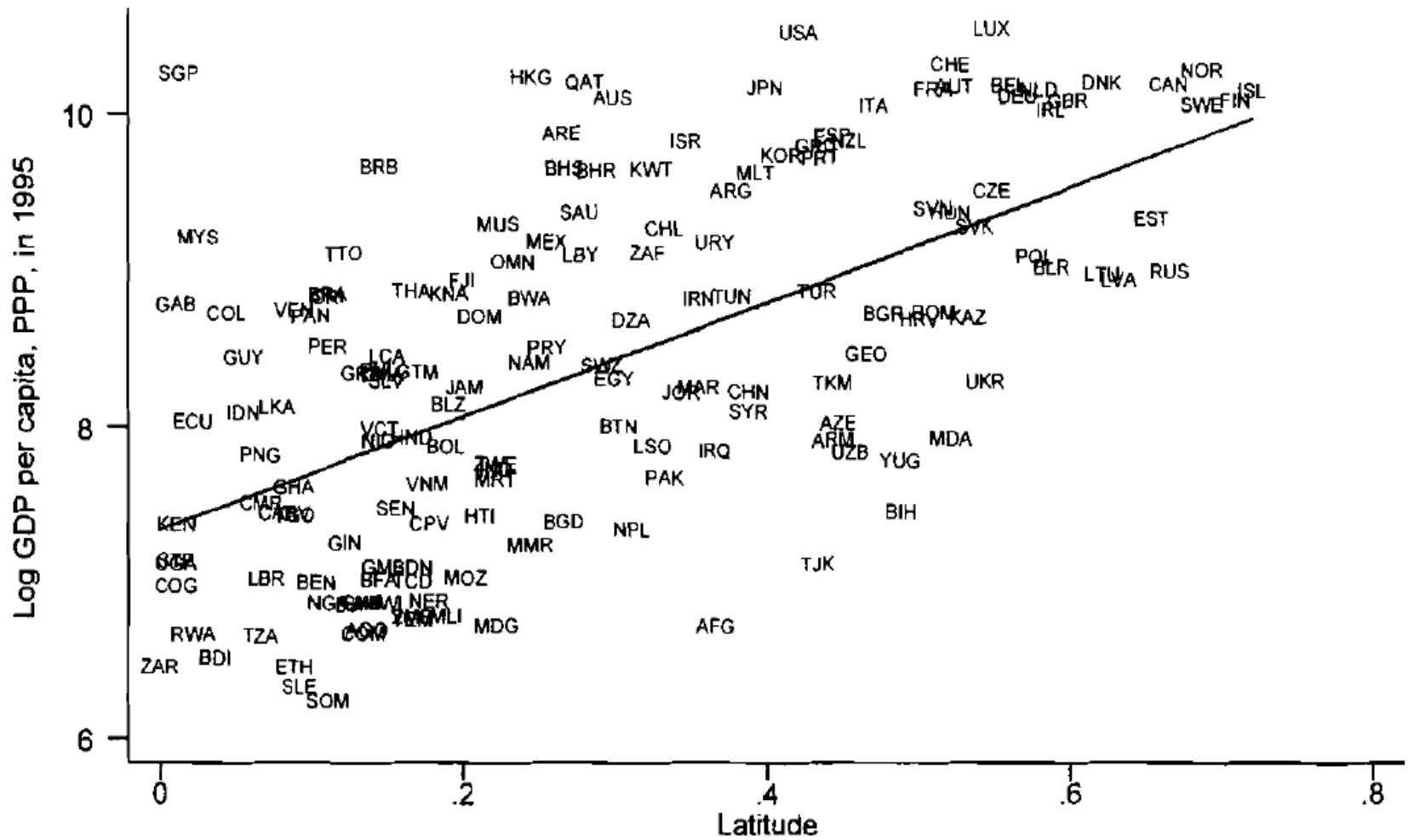


Figure 2. Latitude and log GDP per capita 1995.

It is tempting to interpret Figure 1 as depicting a causal relationship (i.e., as establishing that secure property rights cause prosperity). Nevertheless, there are well-known problems with making such an inference. First, there could be reverse causation – perhaps only countries that are sufficiently wealthy can afford to enforce property rights. More importantly, there might be a problem of omitted variable bias. It could be something else, e.g., geography, that explains both why countries are poor and why they have insecure property rights. Thus if omitted factors determine institutions and incomes, we would spuriously infer the existence of a causal relationship between economic institutions and incomes when in fact no such relationship exists. Trying to estimate the relationship between institutions and prosperity using Ordinary Least Squares, as was done by Knack and Keefer (1995) and Barro (1997) could therefore result in biased regression coefficients.

To further illustrate these potential *identification* problems, suppose that climate, or geography more generally, matters for economic performance. In fact, a simple scatterplot shows a positive association between latitude (the absolute value of distance from the equator) and income per capita. Montesquieu, however, not only claimed that warm climate makes people lazy and thus unproductive, but also unfit to be governed by democracy. He argued that despotism would be the political system in warm climates. Therefore, a potential explanation for the patterns we see in Figure 1 is that there is an omitted factor, geography, which explains both economic institutions and economic performance. Ignoring this potential third factor would lead to mistaken conclusions.

Even if Montesquieu's story appears both unrealistic and condescending to our modern sensibilities, the general point should be taken seriously: the relationship shown in Figure 1, and for that matter that shown in Figure 2, is not causal. As we pointed out in the context of the effect of religion or social capital on economic performance, these types of scatterplots, correlations, or their multidimensional version in OLS regressions, *cannot* establish causality.

What can we do? The solution to these problems of inference is familiar in microeconomics: find a source of variation in economic institutions that should have no effect on economic outcomes, or depending on the context, look for a natural experiment. As an example, consider first one of the clearest natural experiments for institutions.

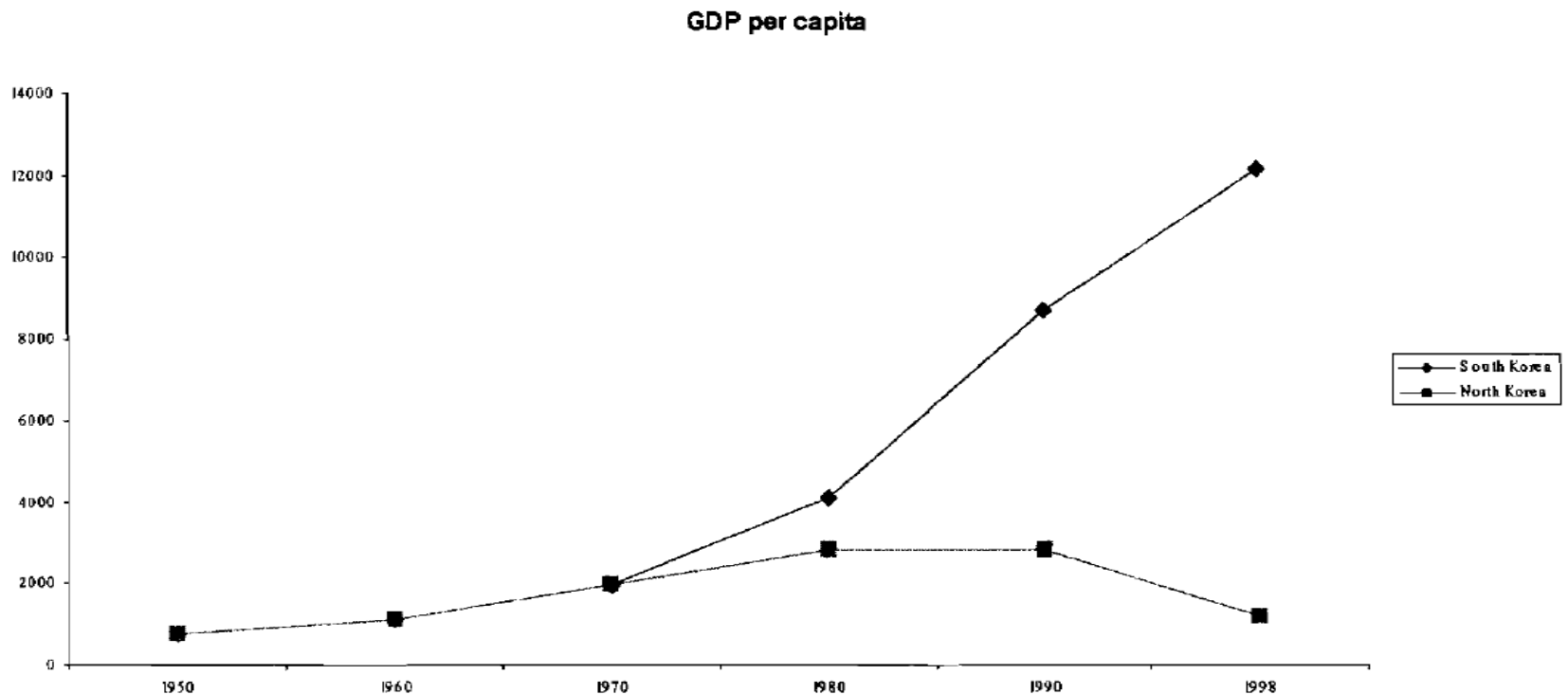


Figure 3. GDP per capita in North and South Korea, 1950–98.

However convincing on its own terms, the evidence from this natural experiment is not sufficient for the purposes of establishing the importance of economic institutions as the primary factor shaping cross-country differences in economic prosperity. First, this is only one case, and in the better-controlled experiments in the natural sciences, a relatively large sample is essential. Second, here we have an example of an extreme case, the difference between a market-oriented economy and a communist one. Few social scientists today would deny that a lengthy period of totalitarian centrally planned rule has significant economic costs. And yet, many might argue that differences in economic institutions among capitalist economies or among democracies are not the major factor leading to differences in their economic trajectories. To establish the major role of economic institutions in the prosperity and poverty of nations we need to look at a larger scale “natural experiment” in institutional divergence.

The colonization of much of the world by Europeans provides such a large scale natural experiment. Beginning in the early fifteenth century and massively intensifying after 1492, Europeans conquered many other nations. The colonization experience transformed the institutions in many diverse lands conquered or controlled by Europeans. Most importantly, Europeans imposed very different sets of institutions in different parts of their global empire, as exemplified most sharply by the contrast to the economic institutions in the northeast of America to those in the plantation societies of the Caribbean. As a result, while geography was held constant, Europeans initiated large changes in economic institutions, in the social organization of different societies. We will now show that this experience provides evidence which conclusively establishes the central role of economic institutions in development. Given the importance of this material and the details we need to provide, we discuss the colonial experience in the next section.

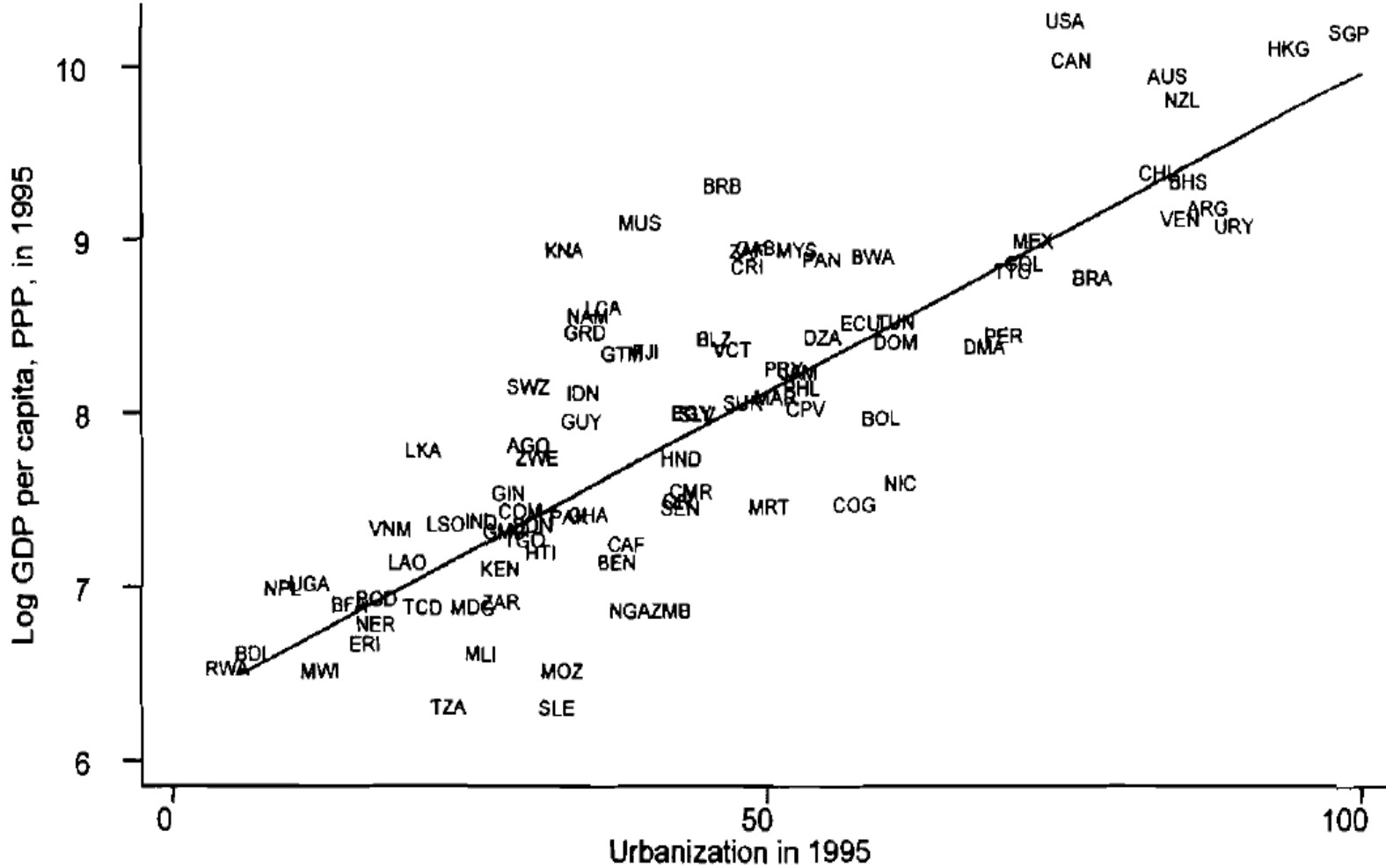


Figure 4. Urbanization in 1995 and log GDP per capita in 1995.

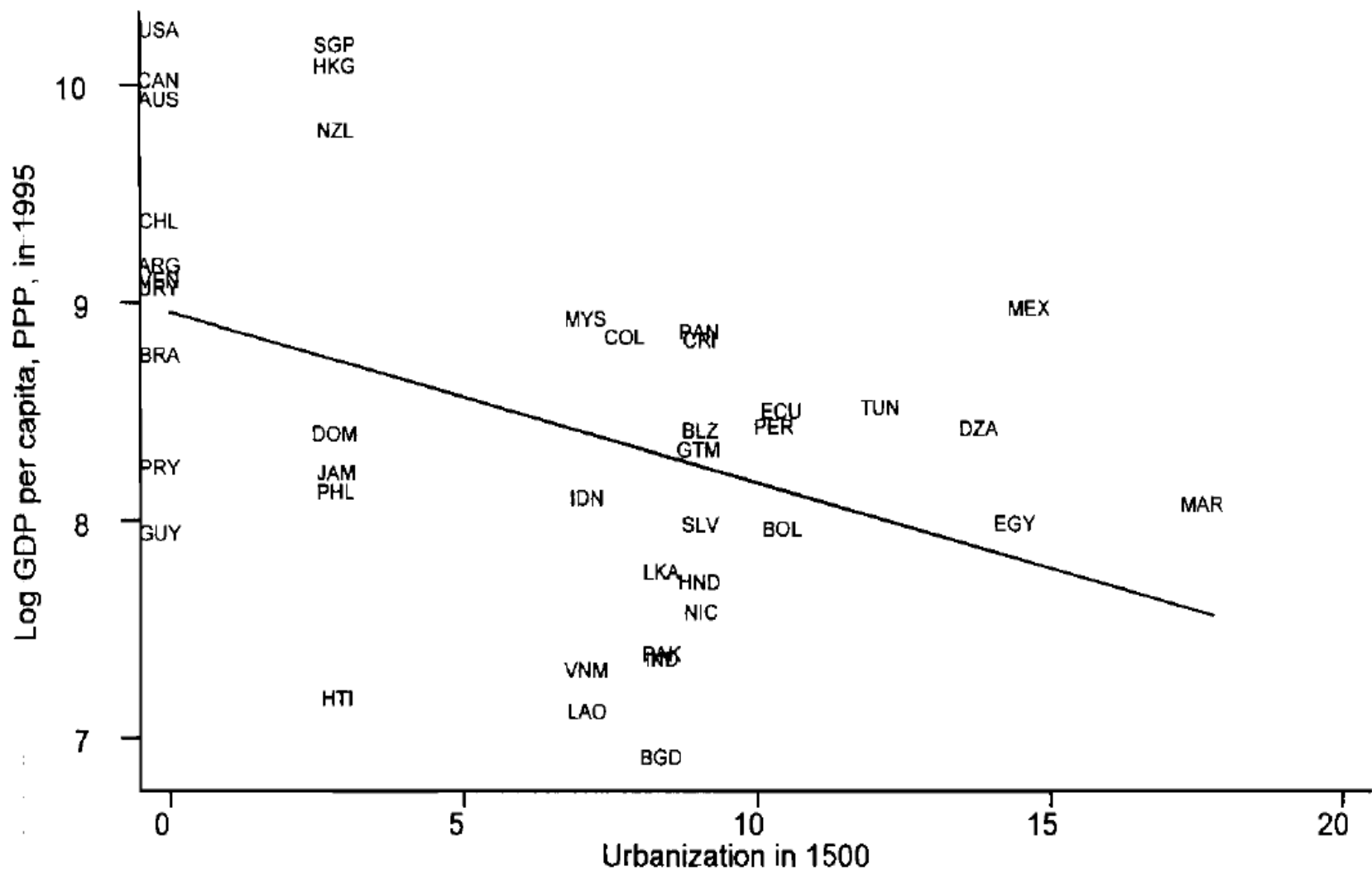


Figure 5. Urbanization in 1500 and log GDP per capita in 1995, among former European colonies.

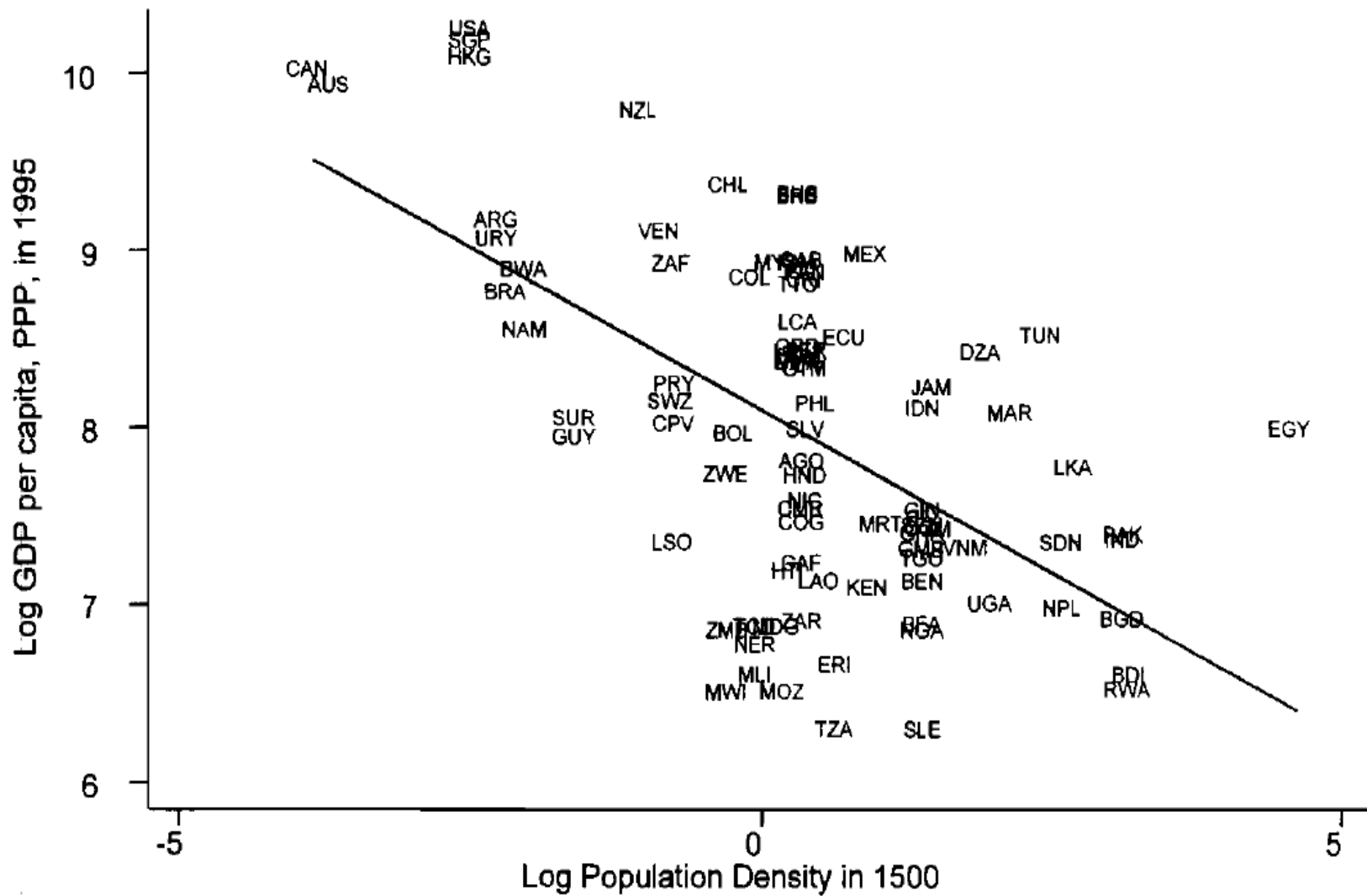


Figure 6. Log population density in 1500 and log GDP per capita in 1995, among former European colonies.

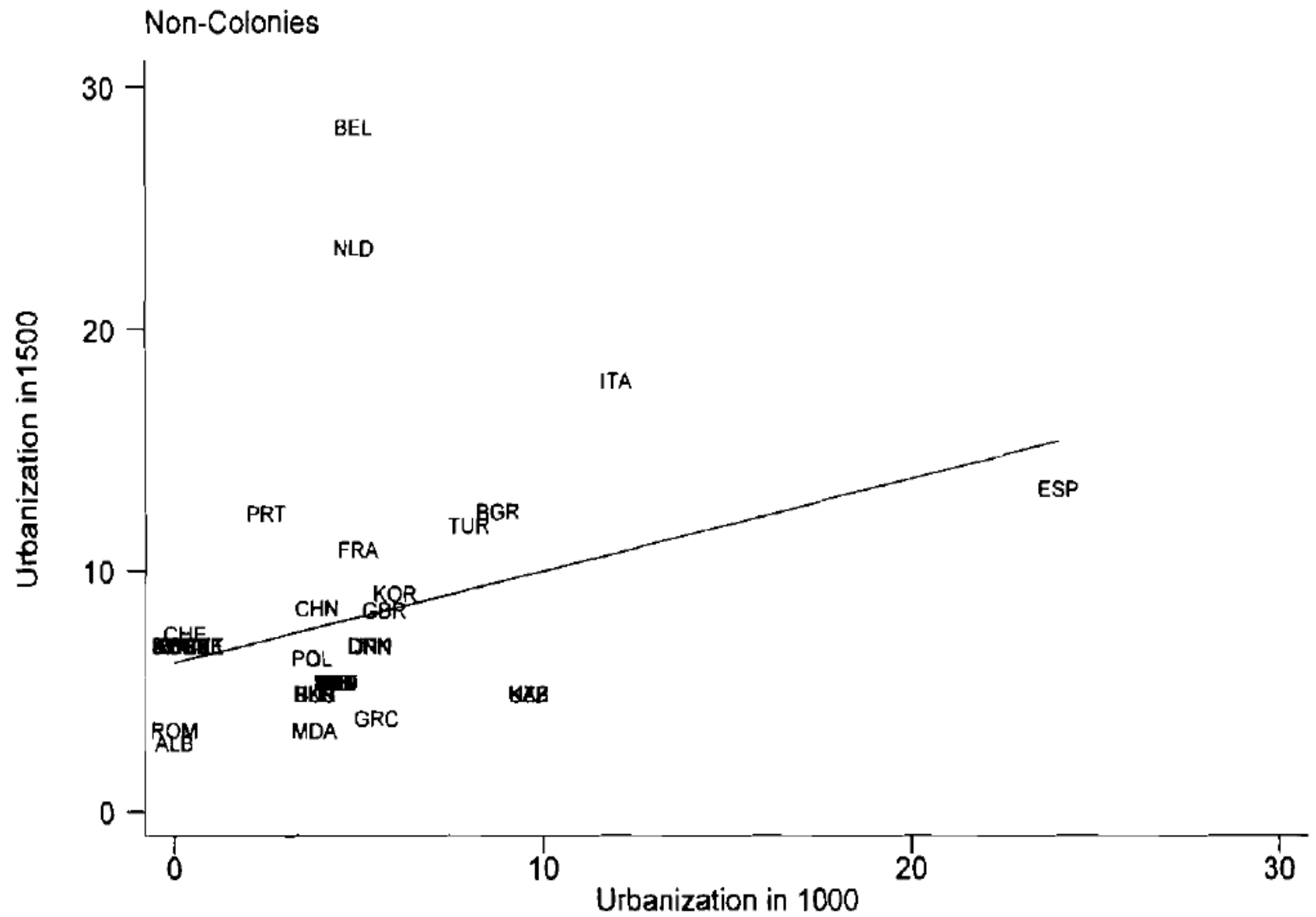


Figure 7. Urbanization in 1000 and 1500, among non-colonies.

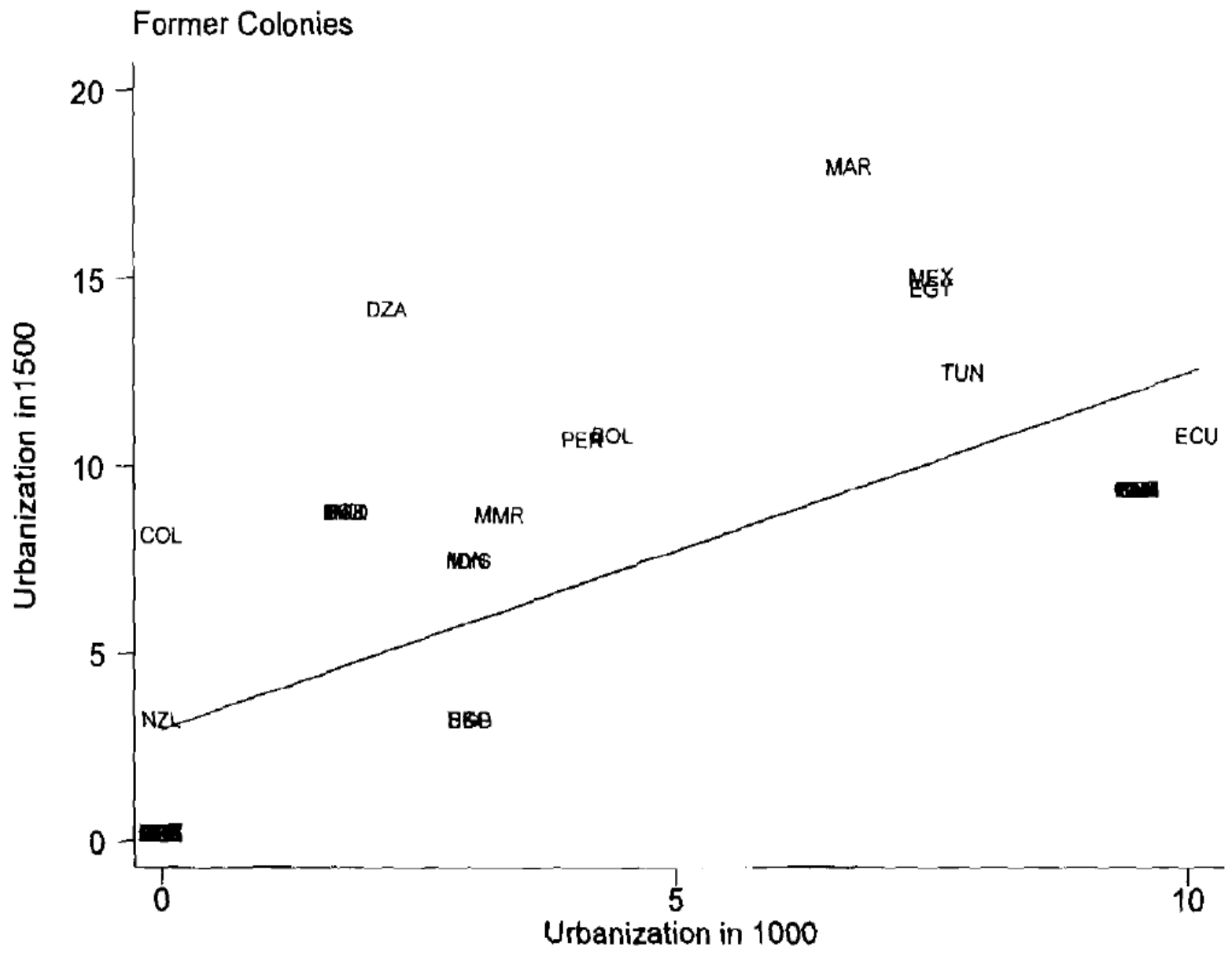


Figure 8. Urbanization in 1000 and 1500, among former European colonies.

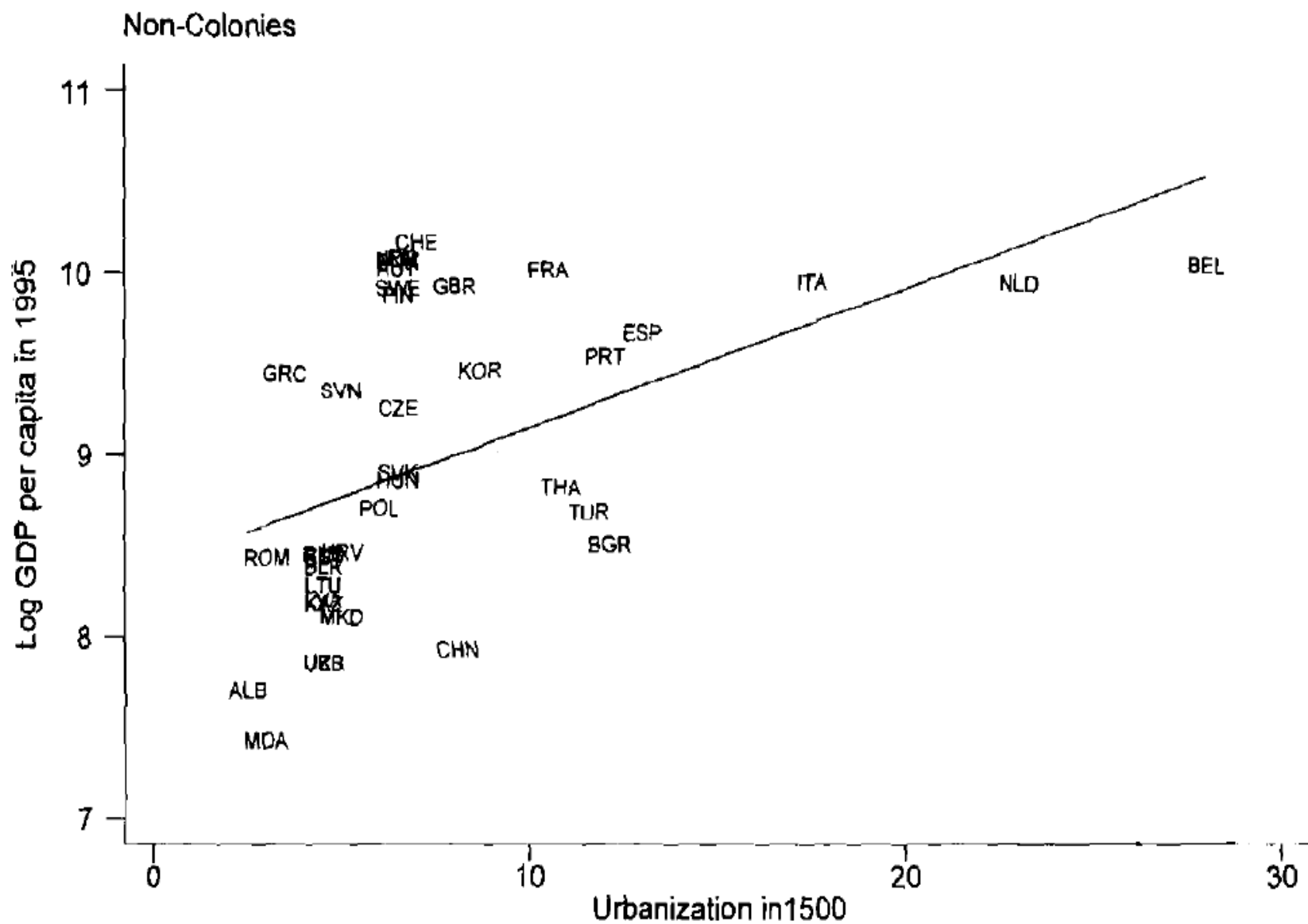


Figure 9. Urbanization in 1500 and log GDP per capita in 1995, among non-colonies.

Urbanization in excolonies with low and high urbanization in 1500
(averages weighted within each group by population in 1500)

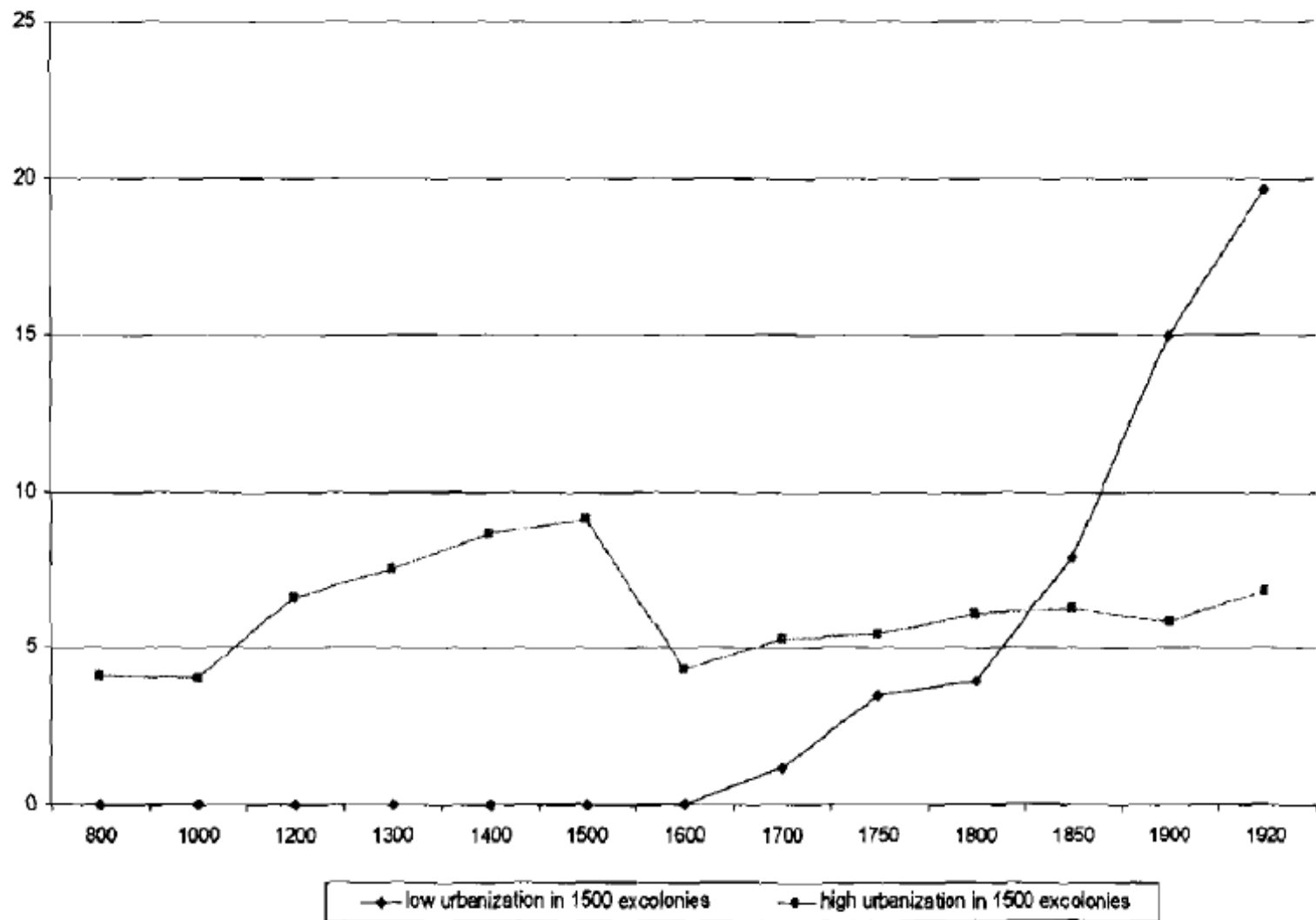


Figure 10. Evolution of urbanization among former European colonies.

Industrial Production Per Capita, UK in 1900 = 100
(from Bairoch)

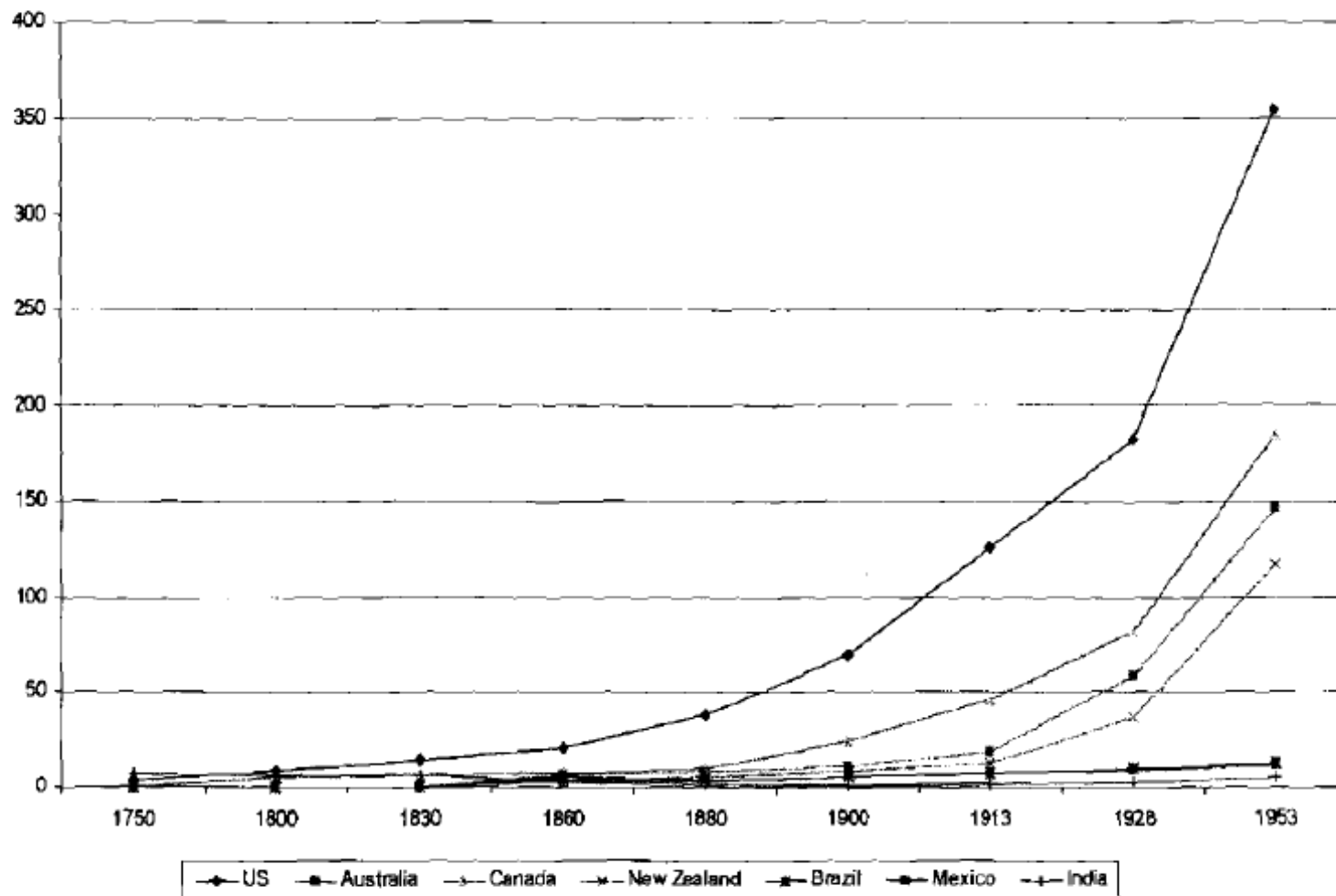


Figure 11. Evolution of industrial production per capita among former European colonies.

When did the reversal occur? One possibility is that it arose shortly after the conquest of societies by Europeans but Figures 10 and 11 show that the previously-poor colonies surpassed the former highly-urbanized colonies starting in the late eighteenth and early nineteenth centuries, and this went hand in hand with industrialization. Figure 10 shows average urbanization in colonies with relatively low and high urbanization in 1500. The initially high-urbanization countries have higher levels of urbanization and prosperity until around 1800. At that time the initially low-urbanization countries start to grow much more rapidly and a prolonged period of divergence begins. Figure 11 shows industrial production per capita in a number of countries. Although not easy to see in the figure, there was more industry (per capita and total) in India in 1750 than in the United States. By 1860, the United States and British colonies with relatively good economic institutions, such as Australia and New Zealand, began to move ahead rapidly, and by 1953, a huge gap had opened up.

Which of the three broad hypotheses about the sources of cross-country income differences are consistent with the reversal and its timing? These patterns are clearly inconsistent with simple geography based views of relative prosperity. In 1500 it was the countries in the tropics which were relatively prosperous, in 2003 it is the reverse. This makes it implausible to base a theory of relative prosperity today, as Sachs (2000, 2001) does, on the intrinsic poverty of the tropics. This argument is inconsistent with the historical evidence.

Similar considerations weigh against the culture hypothesis. Although culture is slow-changing the colonial experiment was sufficiently radical to have caused major changes in the cultures of many countries that fell under European rule. In addition, the destruction of many indigenous populations and immigration from Europe are likely to have created new cultures or at least modified existing cultures in major ways [see Vargas Llosa (1989), for a fictionalized account of just such a cultural change]. Nevertheless, the culture hypothesis does not provide a natural explanation for the reversal, and has nothing to say on the timing of the reversal. Moreover, we discuss below how econometric models that control for the effect of institutions on income do not find any evidence of an effect of religion or culture on prosperity.

The most natural explanation for the reversal comes from the institutions hypothesis, which we discuss next.

Is the Reversal of Fortune consistent with a dominant role for economic institutions in comparative development? The answer is yes. In fact, once we recognize the variation in economic institutions created by colonization, we see that the Reversal of Fortune is exactly what the institutions hypothesis predicts.

In Acemoglu, Johnson and Robinson (2002) we tested the connection between initial population density, urbanization, and the creation of good economic institutions. We showed that, others things equal, the higher the initial population density or the greater initial urbanization, the worse were subsequent institutions, including both institutions right after independence and today. Figures 12 and 13 show these relationships using the same measure of current economic institutions used in Figure 1, protection against expropriation risk today. They document that the relatively densely settled and highly urbanized colonies ended up with worse (or 'extractive') institutions, while sparsely-settled and non-urbanized areas received an influx of European migrants and developed institutions protecting the property rights of a broad cross-section of society. European colonialism therefore led to an institutional reversal, in the sense that the previously-richer and more-densely settled places ended up with worse institutions.⁷

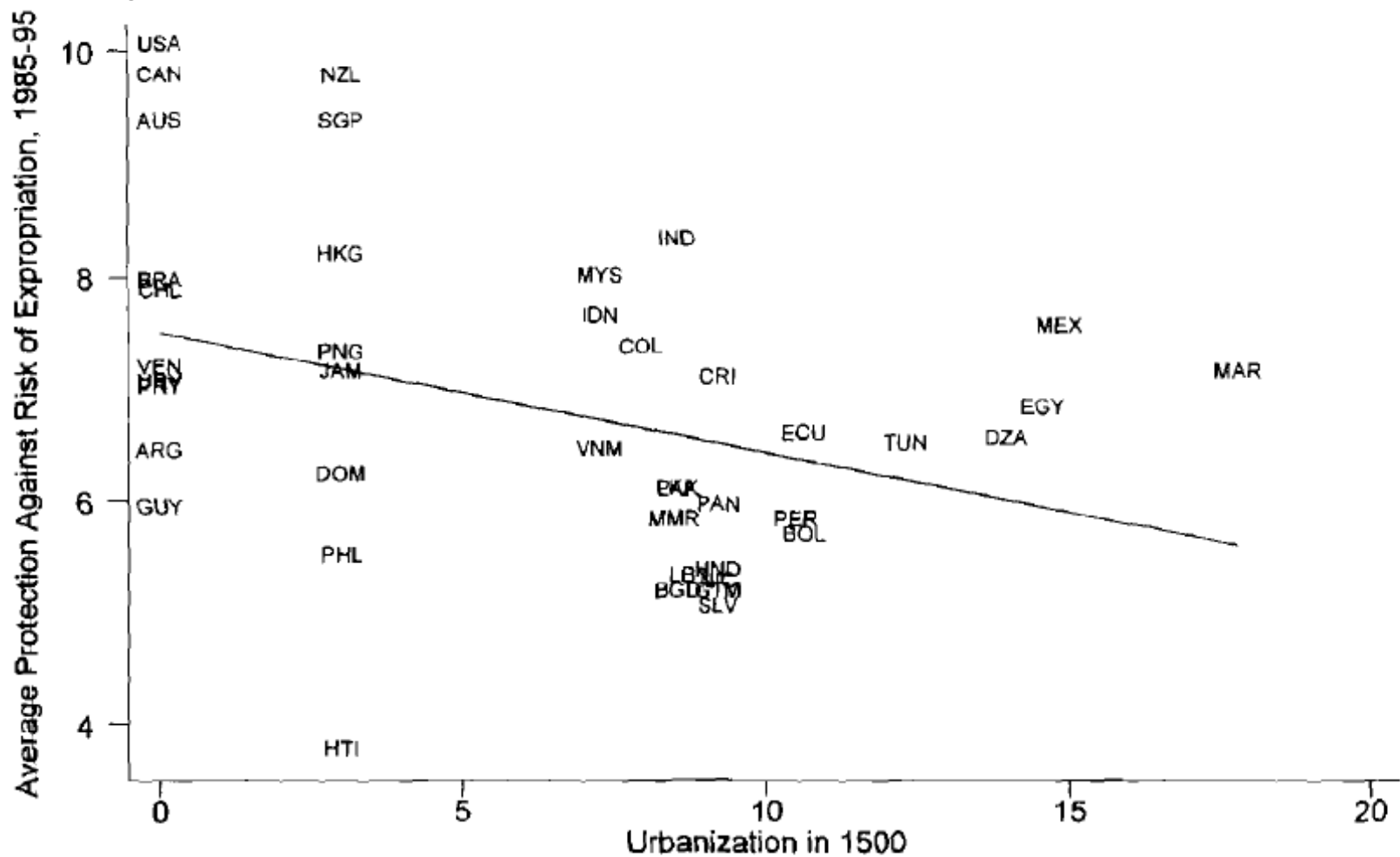


Figure 12. Urbanization in 1500 and average protection against risk of expropriation 1985-95.

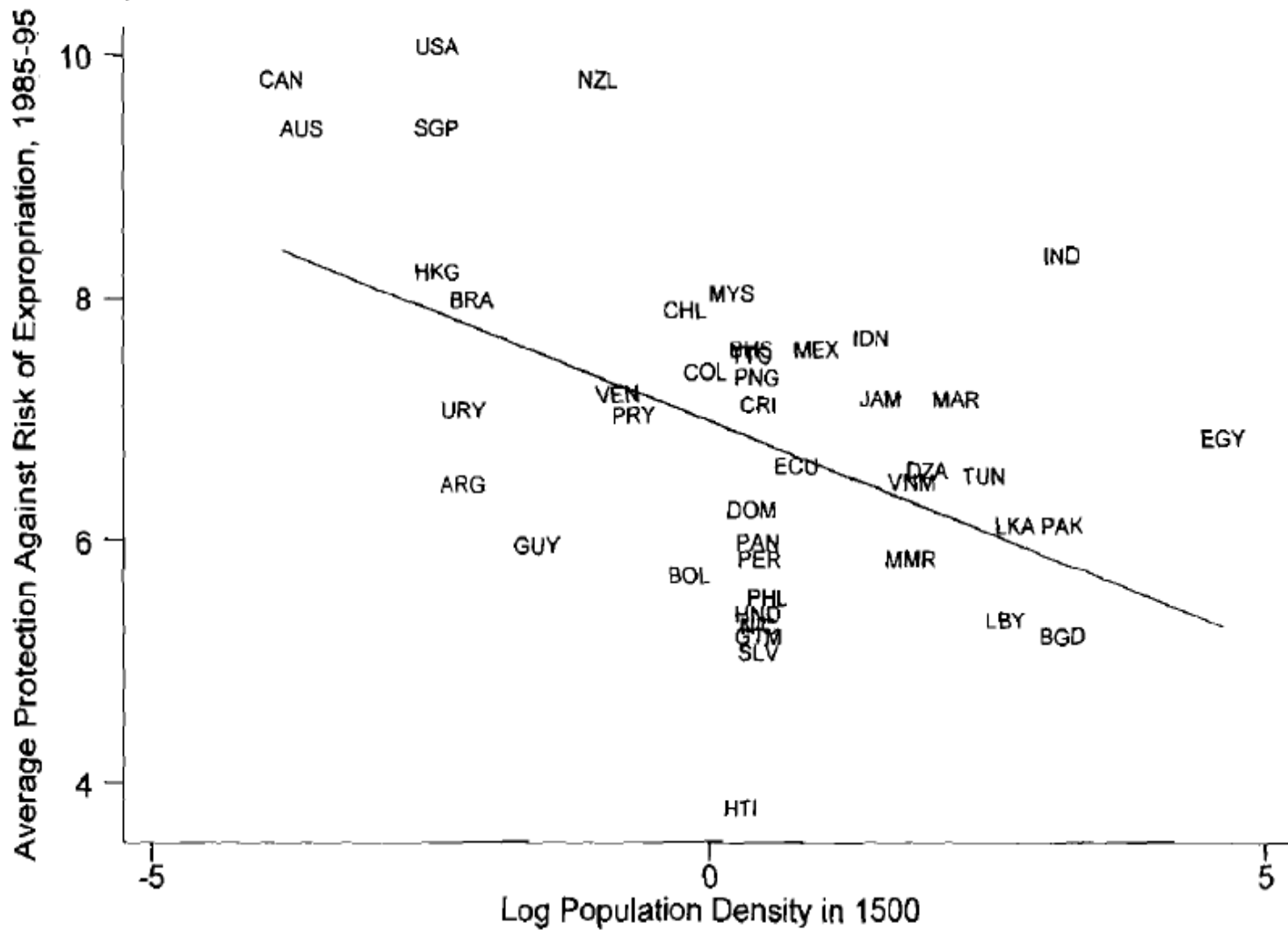


Figure 13. Log population density in 1500 and average protection against risk of expropriation 1985–95.