

**Failed States and Failed Economies: Nationalism and Economic Behavior,
1955-1995**

Carl A. Mosk

Department of Economics, University of Victoria
Victoria, B.C., Canada V8W 2Y2

May, 2005

Abstract

Using data from the Failed State Task Force data set, this paper argues entering onto positive growth paths for income and infrastructure per capita depend upon a nation's political stability and its geography. A nation's achieving sustained long-run growth in both variables is essential to its capacity to converge towards countries with high levels of income per capita because high levels of per capita infrastructure are strongly correlated with high levels of income per capita. New nation states seem to face heavy burdens to avoiding negative feedback traps, partly because their youthfulness is associated with political stability; partly because their propinquity to other politically unstable neighbors hampers their capacity to grow through trade and their ability to avert domestic conflict; partly because they tend to be located in the tropics where the incidence of malaria is high.

Keywords: Political economy; economic development; infrastructure; convergence

JEL Classifications: F1, H1, H8, O5

Author Contact:

Carl Mosk, Dept. of Economics, University of Victoria, P.O. Box 1700, STN CSC, Victoria, B.C., Canada V8W 2Y2; e-mail: mosk@uvic.ca; FAX: (250) 721-6214

I Introduction: Nationalism and Conditional Convergence

In the aftermath of World War II, nationalism spread like a wildfire. Empires - British, Western European, and Japanese – collapsed in ruins, weakened by the great global conflicts that plagued the world between the early 1930s and 1945. The number of nation states, less than a hundred between the First and Second World Wars, soared to over a hundred and seventy by the 1960s as former colonies of the great powers became independent countries.

The field of economic development blossomed in this new international economic and political order. Fueled partly by the Cold War competition for allies between the United States and the Soviet Union that sprang from the ashes of the Second World War, economists in the Western democracies turned their attention to developing models and policy proscriptions for the host of new nation states emergent in Africa and Asia.

Modern growth theory with its emphasis on convergence – the idea that poor countries with a low capital-labor ratio should grow faster in terms of income per capita than wealthy countries because the marginal product and marginal return on capital is higher the lower the capital-labor ratio – flourished in this environment.

In its early heyday the literature stressed the importance of a key aggregate demand variable fashionable in the Keynesian theory of the day, the savings rate. Savings per worker in excess of that necessary to tool the new entrants to the labor force and depreciation on existing capital stock, leads to capital deepening (a rise in the capital-labor ratio). The mainstream models developed along these lines argued population growth tended to stymie rapid growth in income per capita, pointing out the greater the

rate of population growth, the greater the need to plow new investment into capital widening keeping the capital-labor ratio constant.

In sum, ushering from the rudimentary growth theory were some simple rules: increase capital formation in the new nation state (either by bolstering domestic savings through the creation of a network of banks backed up by a national central bank or domestic equity markets or through loans or direct aid from foreign sources); discourage population growth, by promoting population planning programs and fertility reduction.

The simple growth theory models of the 1950s and 1960s were not greeted with unrestrained enthusiasm in all academic and policy-making circles. Dissenters abounded. Economists with a Marxist or non-neoclassical bent were skeptical by the optimizing assumptions underlying the modeling. Many political scientists concerned with the difficulties of nation building encountered by the former colonies and territorial possessions of England, France, Belgium, the Netherlands, Japan, and the United States, were understandably skeptical about the relevance of policies advocated by the neoclassical theorists. Political realists noted that the one party rule - riddled through and through by self interested diversion of foreign aid and government controlled revenues into the pockets of dictators and their obsequious henchmen feeding off the rake-off going into the coffers of the powerful – was an unfortunate concomitant of the new nation state building. ^[1]

The record of growth in per capita income in nation states new and old after World War II bears out the views of the skeptics. In many of the newly minted nation states, income per capita growth was actually negative. At the same time, in Western Europe, in the United States, Canada, Australia and New Zealand, in Japan and in a

handful of former colonies of Japan (South Korea, Taiwan, Hong Kong and Singapore) income per capita growth was exceptionally rapid.

In short convergence took place amongst one group of countries – the Western European nations, the United States, Canada, Australia, New Zealand, Japan and some of its former colonies – while many of the other countries, especially those in the tropical zone of Africa, diverged. Clearly, convergence was conditional on something. But on what?

The argument of this paper is that convergence is conditional on the political stability and geographic characteristics of nation states. Political and geographic characteristics are interwoven, shaping the capacity of nation states to successfully build physical infrastructure that supports long-run economic development.

The logic of the argument can be easily grasped with some simple algebra. Consider the following variables ^[2]:

y_{ini} = initial level of income per capita

g_y = growth rate of income per capita

p_{ini} = initial level of physical infrastructure

g_{pini} = growth rate of an index of physical infrastructure (indexed at 100 in the initial period)

sr = savings rate

ap_g = growth rate of population

$polstab$ = level of political stability

geo = geographic (region a country is located in, climatic constraints influencing soil composition and incidence of parasitic diseases, access to trading

partners

Then:

$$(1) \quad gpini = f(pini, gy, sr, apg, polstab)$$

and

$$(2) \quad gy = g(yini, sr, apg, polstab, geo)$$

Where I assume that the impacts of the independent variables in equation (1) are: negative for pini (reflecting the convergence hypothesis), positive for gy (the more rapidly income per capita grows the greater is the growth of resources that can be used for building more physical infrastructure), positive for the savings rate sr, negative for population growth (population widening cutting into the growth of capital deepening) and positive for political stability. For equation (2) I assume that the impacts of the independent variables upon gy are as follows: negative for yini (the convergence hypothesis); positive for sr, negative for apg, and positive for polstab. Finally, I assume that impacts of the proxies for geographical constraints depend upon the particular variables that I use in the analysis.

Several points relevant to the recent literature in this field are worthy of mention: it is assumed that geography and political stability interact in shaping nation state building and the perpetuation of nation states, neither dominating one another^[3]; and it is assumed that there is mutual feedback from per capita income growth to growth in infrastructure, so that countries tend to either move along positive growth paths or become mired in negative feedback “traps.”^[4] The conditionality imposed by geography and political stability is crucial to determining which path nation states have taken in the post-World War II period.

What is political stability? In this account, the degree of political stability is viewed as running along a continuum, ranging from highly stable to highly unstable, civil wars and domestic political crises tantamount to civil conflict characterizing unstable regimes. ^[5]

To empirically capture the impact of political stability upon long-run income per capita and infrastructure growth, one requires a data set that has within its purview wide variations in political stability. This study uses the Failed State Task Force and The Polity IV Political Regime data sets assembled by team of political scientists to derive measures of political stability in so far as it impacts national level economic behavior. ^[6]

One of the assumptions governing this study is that nation building comes at a price. Talent that could otherwise go into private sector economic activity is diverted to creating and staffing the political institutions crucial to creating national banking systems, national roads and common carriers, national currencies, and educational systems that create a polity conducive to creating political consensus. In low-income countries that have short national histories, creating viable nation states can be very costly indeed. But what is to be done? There is a huge economic penalty for not creating the political stability required to guarantee the survival of the nation state. That is the thrust of the findings reported here that emphasize the conditionality of the political stability of the nation state for determining the probability that a country enters onto a virtuous growth path as opposed to falling into a negative feedback trap. ^[7]

II Old and New Nation States in the Failed State Task Force Sample

Are new nation states especially vulnerable to falling into negative feedback “traps”? In this section we compare and contrast the experience of old and new nation states in the Failed State Task Force Data sample. Our focus is on the figures reported in Appendix Table A.1. I refer the reader to Appendix A.2 for a list of the variables that appear in Table A.1 and elsewhere in the empirical core of this paper.

In Appendix Table A.1 the variable “yes” measures the length of time since a country entering the Failed State Task Force data set has been a nation state prior to providing observations in the data set. As the reader can see, a substantial number of countries have “yes” values of 0 or 1. Using a value of “1” as a cut-off, we can compare and contrast the experience of countries that have a value of “yes” of less than or equal to 1 with those having a value of “yes” greater than 1.

The key questions I want to explore here are: (i) is a political crisis period more likely to generate negative or below average income per capita growth than a non-political crisis period? (ii) is the negative impact of a political crisis more likely to occur in a newly formed nation state than in an older country? And (iii) what are the major correlates of the “yes” variable in the Failed State Task Force data set?

Of the 59 countries appearing in the data set (Pakistan appears twice, once when it included Eastern Pakistan that broke off to create a separate nation state Bangladesh, and once after Eastern Pakistan broke off), 28 had “yes” values of 1 or less, and 32 (31 if one counts Pakistan only once) had “yes” values greater than 1. As can be seen, a number of the countries have “yes” values of over 100. The proportion of new states in the Failed

State Task Force is large, but there are a number of older states that appear in it. So political instability is hardly restricted to newly fashioned nation states.

Of the 28 countries in which “yes” is less than or equal to 1, 18 countries (64.3%) experienced strongly negative consequences to falling into crisis. By “strongly negative” I mean that the growth rate during the crisis period(s) were below the growth rates during the non-crisis years, *and* the percentage of years with negative income per capita growth were greater during the crisis period(s) than during the non-crisis years. Another 5 countries had “somewhat negative” experiences during the crisis period(s), one of the two conditions noted immediately above (below average growth or a relatively high proportion of negative growth years during crises) being met. Finally, in 5 cases, neither negative condition occurred. Thus in newly formed countries, crises usually but do not always produce negative economic consequences.

However, if we restrict our attention to countries experiencing complex crises (in which at least two separate types of crises are occurring simultaneously), the incidence of negative economic consequence is considerably higher than it is in countries experiencing some form of “failed state” crisis. There are 13 countries with “yes” less than or equal to 1 experiencing at least one complex crisis. For this group, 11 (84.6%) experienced “strongly negative” economic consequences; 1 had a “somewhat negative” experience; and 1 avoided negative consequences altogether.

In the older country group (with “yes” greater than 1) – counting Pakistan twice – there are 32 countries. Of these 32 countries, 17 (54.8%) experienced “strongly negative” consequences to falling into political crisis; 6 experienced “somewhat negative” consequences; and 8 experienced no negative economic consequences (India is excluded

from these allocations as it was classified as being in political crisis throughout the period 1955-1995). Within this group of countries, 17 experienced at least one complex crisis. Of the sub-group saddled with at least one complex crisis, 12 (66.7%) experienced “strongly negative” consequences; 4 experienced “somewhat negative” consequences; and 2 did not experience negative consequences.

From these findings we can draw several conclusions: most, but not all, periods of political crisis yield negative economic consequences that are felt immediately during the period of the crisis; and young countries (with “yes” less than or equal to 1) tend to be more likely to experience “serious negative” consequences to falling into political crisis than older countries; and complex crises are unusually bad as far as economic growth is concerned.

In interpreting these results concerning young and old countries something should be said about the correlates of “yes:” after all, it is possible that the “yes” variable is picking up influences due to its correlates. Working from the list of variables in Appendix Table A.2 the major correlates of “yes” can be easily stated. The major correlates - those having an absolute value of +.2 or higher - of “yes” in the subset of the Failed State Task Force data set considered here are: yes and yini: +.46; yes and pini: +.24; yes and toWH : +.35; yes and toE :+.31; yes and toAF: -.56; yes and pva: +.24; yes and apg: -.27; yes and sr: +.43; yes and gs: -.34; yes and Rgr: -.23; yes and Mal: -.47; and yes and URB: +.60.

Older states tend to be more urban; tend to be in Europe and the Western hemisphere; tend to have higher per capita income and more infrastructure per capita than newer states; tend to have slower population growth and higher rates of savings perhaps

reflecting a deeper financial infrastructure; and tend to low incidence rates for malaria. It is likely that the ability to avoid falling into negative economic growth during political crises enjoyed by older countries is partly due to the existence of these correlations.

III Infrastructure and Income per Capita in the Failed State Task Force Sample

The thesis of this paper is that entering on a virtuous long-run growth path requires channeling sustained income per capita increases into sustained growth in infrastructure, particularly physical infrastructure.

Why focus on physical infrastructure? Two reasons seem to be compelling: there is synergy in developing all forms of infrastructure, creating human capital enhancing infrastructure that bolsters educational and health capacity of populations depending on the domestic level of communications and transportation in a country; there is strong comprehensive international convergence in many development indicators, including those for the human development, but there is a lack of comprehensive convergence in income per capita and in per capita physical infrastructure. ^[8]

In this regard consider the cross-section relationships between the level of infrastructure per capita and income per capita at the beginning and end of the period considered in this study (the early period is typically 1955-59; the later period is typically 1991-95). These cross-sections appear in Figures 1 and 2. **[Figures 1 and 2 about here]**. The correspondence between the two variables is readily evident from the figures (the correlation between the two variables is $+0.82$ in the early period).

While the association between levels of physical infrastructure and levels of income per capita is strong, indicative of a strong connection between long-run infrastructure buildup and the capacity to generate income year after year, the association between growth in per capita infrastructure and growth in per capita income per capita is far weaker. This is evident from Figure 3. **[Figure 3 about here.]** Why do get this result?

Two reasons suggest themselves. The period covered in our analysis of the Failed State Task Force data set is fairly short. Moreover, as indicated in the two equations presented in Section I, the forces working on growth in income and growth in infrastructure are different. Over a fairly short period of time, the tendency to either stay trapped at a low income per capita level with a low level of physical infrastructure, or to sustain growth in both variables, is not as evident as it would be over a long period of time.

Building and maintaining physical infrastructure stocks is the resultant of achieving sustained political stability and achieving sustained growth in income per capita. And – because of geographic scale economies – countries that are more urban are more like to have high levels of per capita infrastructure. For instance the correlation between the two variables URB and pini is +.57. Thus new nation states that tend to be rural are likely to experience strong barriers to enhancing infrastructure per capita simply because their populations are widely dispersed, living in far flung villages. Getting from low to high levels of infrastructure is a matter of structural change that is associated with changing the geographic distribution of the population of country.

It is also a matter of the way political voice is exercised. For instance, the correlation between pva (the polity variable) and per capita infrastructure is +.46. In

political environments where the voices of all regions of a nation are heard through the political process, the authorities controlling budgets for infrastructure creation and maintenance are more likely to feel pressure that keeps them from exclusively allocating resources to a few favored sites.

In sum, experiencing sustained growth in income per capita is essential to building infrastructure. This said, it is difficult to deepen the per capita infrastructure supply of countries where the population is widely dispersed, or conditions of political unrest leading to civil war in the worse case stymie the political process of allocating public resources to building, maintaining and regulating infrastructure stocks.

IV Convergence in Infrastructure per Capita and Income per Capita: The Importance of Political Stability and Geography in the Failed State Task Force Data Set

In this section we report on regressions that follow the format laid out in equations (1) and (2). Because the model that I lay out implies that income per capita growth influences growth in infrastructure per capita, and growth in infrastructure per capita influences growth in income per capita, I am assuming that the two growth processes interact with one another. The appropriate technique for handling the two-equation system in this case is two-stage least squares.

Our results appear in Table 1. [**Table 1 about here.**] They are broadly consistent with the hypotheses laid out in Section I. Consider convergence. From Panel A of Table 1 it is evident that the sign on the *pini* variable in the regression with *gpini* as dependent

variable is negative; from Panel B of the table it is evident that the sign on the yin variable is negative. Again, the economic variables in Panel A behave as expected: population growth has a negative impact; income growth a positive impact; and the savings rate a positive impact. Interestingly, the impact of “big government” on growth in infrastructure – the share of government in the economy multiplied by the polity variable – is negative. The inference is that the public sector has the most beneficial impact on infrastructure when it operates in a “lean and mean” manner, perhaps limiting its interventions to regulating infrastructure rather than in building it.

In the Panel B regression the most striking results concern the impact of geography – the presence of malaria risks throughout a country at all times of the year is a clear drag on growth – and the pull of being in Asia as far as the pull of trade is concerned. Of course what we are calling geography may not be geographic pure and simple. Malaria tends to a rural disease; its incidence may be increased when civil wars force the refugees without natural immunity to malaria fleeing conflicts to move into regions where they are vulnerable; Asia is a region with strong pull through trade due to the existence of regional sparkplugs like Japan. So one must be careful to not over-interpret the geography variable.

V Conclusions

This paper argues that entering onto virtuous growth paths for income per capita and infrastructure per capita depends on both political stability and geography. A nation’s achieving sustained long-run growth in both variables is essential to its capacity to

converge towards countries with high levels of income per capita because high levels of infrastructure per capita are strongly correlated with high levels of income per capita. Recently emergent nation states seem to face heavy barriers to entering onto virtuous growth paths. One of these barriers is their youthfulness that is associated with political instability. Another is their propinquity to other politically unstable and economically stagnant neighbors that hampers their capacity to promote growth through trade and their ability to avoid domestic conflict. A third barrier to entering onto a virtuous growth path is the incidence of malaria that seems to stymie growth in income per capita throughout much of the tropics where many of the relatively new nation states are located.

Footnotes

- [1] On corruption undermining the efficient use of foreign aid or loans, see Easterly (2002), Rose-Ackerman (2004) and van de Walle (2005). Arguing along these lines, Hall and Jones (1999) develop a measure of social infrastructure that mirrors the political and economic institutions (including a bias toward trade openness) developed in Western Europe and the countries of British settlement (the United States, Canada, Australia and New Zealand). Basically, Hall and Jones (1999) explain most of the international cross-sectional variation in output per worker in terms of social infrastructure, the amount due to variation in the capital-labor ratio and the quality of labor input being remarkably small.
- [2] For a full list of the variable names used in the empirical analysis appearing later in this paper, please see Appendix Table A.2.
- [3] In interpreting international cross-sections in income per capita scholars like Jeffrey Sachs emphasize the overwhelming importance of geography while others stress how political and economic institutions dominate. For instance Sachs and Warner (1997) emphasize being in the tropics and being landlocked, and Gallup and Sachs (2001) stress the negative impact that the incidence of malaria has upon growth in income per capita. In contrast, Hall and Jones (1999) and Sokoloff and Engerman (2000) place priority to political institutions, especially on the spread of democracy and the franchise in which voting is done in private. Acemoglu, Johnson and Robinson (2001) argue that geography – especially the incidence of parasitic diseases like malaria and yellow fever in the tropics – constrained Europeans who were desirous of settling the colonies that they secured during the

19th century. Countries to which European settlers flocked – for instance, Australia – developed the political and economic institutions that promoted virtuous income per capita growth while countries settlers avoided tended to develop political and economic institutions that were not conducive to virtuous growth. The emphasis is on historical persistence. In this paper, geographic constraints are viewed as facilitating or hindering the development of national institutions – that is the institutions of nation building – in the contemporary period, and less emphasis is placed on historical persistence. For an interesting economist perspective on the nation-state, see Alesina and Spolaore (2003).

- [4] Feedback, either positive or negative, is crucial to arguments about path dependence, namely the view that the deadweight of the past shapes the choices made in the present. In Mosk (1996) I develop a model of human health in which growth in income per capita shapes growth in labor productivity that in turn promotes growth in income per capita. Mosk (2001) develops a more general feedback thesis according to which growth in income per capita promotes the growth of physical, human capital promoting and financial infrastructure that in turn feeds favorably upon growth in income per capita. Many of the chapters in the Copenhagen Consensus volume edited by Lomborg (2004) note that income per capita and its growth shapes the very factors that either promote or hinder further growth: for instance Collier and Hoeffler (2004) on civil wars and domestic conflicts; Eichengreen (2004) on financial depth (the ratio of banking and equity financing to income); Pritchett (2004) on education; and Rose-Ackerman (2004) on governance and corruption.

- [5] The approach to civil conflict taken here – viewing it as one end of a continuum ranging from very stable to highly unstable – differs from that taken by Collier, Eliot, Hegre, Hoeffler, Reynal-Querol and Sambinis (2003) that sees civil conflicts as *sui generis* breakdowns, often divorced from political problems per se, occasionally stemming from “resource curses” that encourage rent-seeking warlords to lead separatist movements for regions endowed with raw materials (e.g.: diamonds, oil).
- [6] In this paper I narrow the list of countries in the Failed State Task Force Phase III data set that I analyze to those countries that (i) have figures on per capita income and per capita physical infrastructure covering the period that they are observed in the Failed State Taskforce Phase III; and (ii) that were created as nation states prior to the late 1990s, that is have existed as nation states for at least a decade prior to 1995. For the Failed State Task Force see Goldstone, Gurr, Harff, Levy, Marshall, Bates, Epstein, Kahl, Surko, Ulfelder, and Unger (2000). For the Polity Project IV data set, see Marshall and Jagers (2002). For the income per capita (and population growth, savings and share of government in the economy figures used in this study) see Heston, Summers and Aten (downloaded on January 14, 2005). For the figures on physical infrastructure per capita, see Canning (1998).
- [7] In the analysis undertaken here, only domestic wars are taken into account, international conflicts being excluded from the data set. This assumption rests in part on the fact that in the post-1950 period, the frequency of civil wars has increased relative to the frequency of international conflicts. In fact, there is often an overlap of domestic and international tensions, particularly in countries where

ethnic or religious groups live on both sides of a international border separating nation states. On this point see Davis, Jagers and Moore (1997).

- [8] On these points see Goldin (1998) and Kenny (2004). Gramlich (1994) provides a useful discussion of the literature measuring the growth payoff to infrastructure investment.

Bibliography

- Acemoglu, D.; S. Johnson; and J. Robinson (2001) "The Colonial Origins of Comparative Development: A Empirical Investigation," *American Economic Review*, Vol. 91, #5: 1369-1401.
- Alesina, A. and E. Spolaore (2003) *The Size of Nations* (Cambridge, MA: The MIT Press.)
- Canning, D. (1998) "A Database of World Infrastructure Stocks, 1950-95," Downloaded from <http://wbln0018.worldbank.org/Research/workpapers.nsf> on February 3, 2005 (associated dataset downloaded from <http://www.worldbank.org/html/Publications/Workpapers/WPS1900series/wps1929/canning.xls>)
- Carment, D. and P. James [eds] (1997) *Wars in the Midst of Peace: The International Politics of Ethnic Conflict* (Pittsburgh: University of Pittsburgh Press.)
- Collier, P.; V. L. Eliot; H. Hegre; A. Hoeffler; M. Reynal-Querol; and N. Sambanis (2003) *Breaking the Conflict Trap: Civil War and Development Policy* (Washington, D.C.: World Bank.)
- Collier, P. and A. Hoeffler (2004), "Conflicts," in Lomborg (2004): 129-156.

Davis, D.: K. Jagers; and W. H. Moore (1997) "Ethnicity, Minorities, and International Conflict," in Carment and James (1997): 148-163.

Easterly, W. (2002) *The Elusive Quest for Growth: Economists' Adventures and Misadventures in the Tropics* (Cambridge, MA: The MIT Press.)

Eichengreen, B. (2004) "Financial Instability," in Lomborg (2004): 251-280.

Gallup, J. L. and J. D. Sachs (2001), "The Economic Burden of Malaria," *American Journal of Tropical Medicine and Hygiene*, Vol. 64 (1,2) S: 85-96.

Goldin, C. (1998) "America's Graduation from High School: The Evolution and Spread of Secondary Schooling in the Twentieth Century," *The Journal of Economic History*, Volume 58, #2: 345-374.

Goldstone, J.: T. Gurr; B. Harff; M. Levy; M. Marshall; R. Bates; D. Epstein; C. Kahl; P. Surko; J. Ulfelder, Jr.; and A. Unger (2000) *State Failure Task Force Report: Phase III Findings*, Downloaded from www.cidcm.umd.edu/inscr/stfail/ on January 6, 2005.

Gramlich, E. (1994) "Infrastructure Investment: A Review Essay," *Journal of Economic Literature*, Vol. 32, #3: 1176-1196.

Hall, R. and C. Jones (1999) "Why Do Some Countries Produce So Much Output Per Worker Than Others?," *Quarterly Journal of Economics*, Vol. 114: 83-116.

Heston, A.; R. Summers and B. Aten, *Penn World Table Version 6* (Center for International Comparisons at the University of Pennsylvania (CICUP), Data downloaded on January 14, 2005 from <http://pwt.econ.upenn.edu/php-site/pwt61form.php>).

Kenny, C. (2004) "Why Are We Worried About Income? Nearly Everything that Matters is Converging," *World Development*, Vol. 33, #1: 1-19.

Lomborg, B. [ed] (2004) *Global Crises, Global Solutions* (New York: Cambridge University Press.)

Marshall, M. and K. Jaggers (2002) "Polity Project IV Project: Political Regime Characteristics and Transitions, 1800-2002: Dataset User's Manual," Downloaded from www.cidcm.umd.edu/inscr/polity, March 10, 2005.

Mosk, C. (1996) *Making Health Work: Human Growth in Modern Japan* (Berkeley and Los Angeles: University of California Press.)

---- (2001) *Japanese Industrial History: Technology, Urbanization and Economic Growth* (Armonk, N.Y.: M. E. Sharpe.)

Pritchett, L. (2004) "Access to Education," in Lomborg (2004): 175-234.

Rose-Ackerman, S. (2004) "Governance and Corruption," in Lomborg (2004): 301-344.

Sachs, J. and A. Warner (1997) "Fundamental Sources of Long-Run Growth," *American Economic Review*, Vol. 87, #2: 184-188.

Sokoloff, K. and S. Engerman (2000), "History Lessons: Institutions, Factor Endowments, and Paths of Development in the New World," *The Journal of Economic Perspectives*, Vol. 14, #3: 217-232.

van de Walle, N. (2005) *Overcoming Stagnation in Aid-Dependent Countries* (Washington, D.C.: Center for Global Development.)

World Health Organization (1985) *Vaccination Certificate Requirements and Health Advice for International Travel. Situation as on 1 January 1986* (Geneva: World Health Organization.)

Table 1: Growth of Physical Infrastructure per Capita and Growth in Income per Capita: Two-Stage Least Square Estimates with gpini and gy as Dependent Variables, Cross-Section of 59 Countries in the Failed State Data Set

Panel A: Equation with gpini as Dependent Variable

Dependent Variable			gpini
Intercept			4.27* (3.57)
Independent Variables	Initial level of physical infrastructure per capita	pini	-0.003*** (-1.94)
	Political	nccpr	0.01 (.66)
		govim	-0.004*** (-1.96)
	Economic	gy	0.39*** (1.74)
		apg	-0.67*** (-1.68)
		sr	0.04** (2.22)
	Geographic	URB	-0.01 (-0.72)
Adjusted R ²			0.22

Table 1 [Continued]

Panel B: Equation with gy as Dependent Variable

Dependent Variable			gy
Intercept			4.35* (2.76)
	Initial Level of Income per Capita	yin	-0.004*** (-2.22)
	Political	nccpr	0.02 (1.26)
	Economic	sr	0.02 (1.31)
		agp	-0.57 (-1.49)
		toWH (trade openness – Western Hemisphere)	-0.006 (-0.59)
		toE (trade openness – Europe)	-.02 (0.69)
		toAF (trade openness – Africa)	-0.005 (-0.44)
		toAS (trade openness – Asia)	0.02*** (2.05)
	Geographic	Mal	-1.65* (-3.68)
	Adjusted R ²		

Notes: t-statistics in ()

- * significant at the 1% level
- ** significant at the 5% level
- *** significant at the 10% level

Appendix Table A.1

Panel A: Growth Rates of Income per Capita (gy), the Ratio of Years without Political Crisis to Years with Political Crisis (nccpr), and Number of Years Prior to the First Year of the Observation Period When Current Nation State Established (yes)

[State Failure Taskforce Data Combined with Penn World Tables Data]

Country	Observation period	gy	nccpr	yes
Algeria	1961-1998	1.857895	3.22	0
Angola	1961-1998	-1.02917	1.57	0
Argentina	1955-1998	1.544773	3.4	140
Bangladesh	1971-1998	1.412143	13.0	0
Benin	1960-1998	1.574103	2.9	0
Brazil	1955-1998	1.544773	21.0	134
Burkina Faso	1960-1998	0.540513	38.0	0
Burundi	1962-1998	1.031081	2.36	0
Chad	1961-1998	0.101316	0.19	0
Chile	1955-1998	2.531591	10.0	138
Columbia	1955-1998	1.887045	2.14	137
Comorus	1975-1998	-1.70375	11.0	0
Cyprus	1960-1996	4.681892	4.29	0
Dominican Republic	1955-1998	2.984091	6.33	112
Ecuador	1955-1998	1.756136	21.0	126
Egypt	1955-1998	2.576818	2.39	5
El Salvador	1955-1998	0.811591	1.93	115
Ethiopia	1955-1998	0.283409	0.29	58
The Gambia	1965-1998	0.69	33.0	0
Ghana	1957-1998	0.84119	9.5	0
Greece	1955-1998	3.540455	43.0	126
Guatemala	1955-1998	1.351136	0.42	117
Guinea-Bissau	1974-1998	3.5152	24.0	0
Guyana	1966-1998	1.924545	10.0	0
Haiti	1968-1998	3.432903	30.0	154
India	1955-1998	2.539773	0.0	7
Indonesia	1961-1998	3.63	0.41	13
Iran	1956-1998	3.055814	0.96	142
Israel	1955-1998	3.243182	0.375	8
Jordon	1955-1998	2.4925	6.33	10
Kenya	1963-1998	1.423611	11.0	0

Panel A Continued on the next page

Country	Observation period	gy	nccpr	yes
Korea, South	1955-1998	5.458182	10.0	8
Lesotho	1961-1998	2.267368	5.33	0
Madagascar	1961-1998	-1.02974	8.5	1
Mali	1961-1998	-0.10342	8.5	1
Mexico	1955-1998	2.0475	43.0	135
Morocco	1956-1998	2.63246	1.39	0
Mozambique	1975-1998	-2.26875	0.5	0
Nicaragua	1955-1998	-0.84727	2.67	118
Niger	1961-1998	-1.55763	37.0	1
Nigeria	1960-1998	0.769744	2.0	0
Pakistan A	1955-1970	1.82375	3.5	5
Pakistan B	1971-1998	2.618571	0.27	21
Panama	1955-1998	2.6	21.0	53
Papua New Guinea	1975-1998	-0.75583	1.18	0
Peru	1955-1998	1.2225	1.59	132
Philippines	1955-1998	1.544773	0.47	10
Romania	1961-1998	4.742895	37.0	103
Rwanda	1962-1998	0.479189	1.85	0
Senegal	1961-1998	-0.34132	2.46	1
Sierra Leone	1962-1996	-0.20314	2.18	1
South Africa	1955-1998	1.183636	1.93	46
Sri Lanka	1955-1998	2.039545	1.59	8
Syria	1961-1998	3.613684	6.6	16
Thailand	1955-1998	4.634773	0.69	141
Turkey	1955-1998	2.696364	1.2	141
Uganda	1962-1998	1.696216	0.12	0
United Kingdom	1955-1998	2.185455	0.69	141
Zambia	1964-1998	-0.95571	4.83	0
Zimbabwe	1967-1998	1.9375	1.00	1

Sources: Penn World Tables (Version 6) and “State Failure Task Force Report: Phase III Findings”

Notes: The data set includes those countries in the State Failure Task Force Report that (1) had Penn World Table income per capita estimates that covered the period when all of the crises during the 1955-1998 period occurred; and (2) were nation states for at least 20% of the era 1955-1998 (excluded because they became nation states only during the 1990s were Armenia, Azerbaijan, Belarus, Croatia, Georgia, Kazakhstan, Kyrgyzstan, Moldova, Russia, Tajikistan, and Yemen.)

Panel B: Growth Rates for Income per Capita (gy) and Percentage of Years with Negative Income per Capita Growth Rates (yng%): Countries Classified According to the Number of Years Prior to the First Year of the Observation Period When Current Nation State Established (yes).

Panel B.1: Countries for which “yes” is less than or equal to 1

Country	gy		yng%		Number and Nature of Crises
	Crisis period	Non-Crisis Period	Crisis period	Non-Crisis period	
Algeria	-2.27%	3.14%	66.7%	27.6%	2 (1962, 1991-98) Complex
Angola	-2.95	1.99	63.6	9.1	1 (1975-98) Complex
Bangladesh	5.19	1.12	50.0	19.2	1 (1974-5) Regime transition
Benin	2.66	1.20	30.0	41.4	1 (1963-72) Regime transition
Burkina Faso	-3.92	0.66	100.0	52.6	1 (1980) Regime transition
Burundi	4.93	-0.62	36.4	61.5	2 (1963-73; 1988-98) Complex
Chad	0.06	0.34	56.3	33.3	1 (1965-96) Complex
Comorus	-7.16	-1.21	100.0	54.6	1 (1995-6) Complex
Cyprus	1.82	5.23	28.6	20.0	2 (1963-8; 1974) Complex
The Gambia	-2.35	0.78	100.0	57.6	1 (1994) Regime transition
Ghana	1.83	0.74	75.0	42.1	2 (1972; 1978-84) Regime transitions
Guinea-Bissau	-28.22	4.84	100.0	45.8	1 (1998) Complex
Guyana	-2.04	2.32	33.3	36.7	1 (1978-80) Regime transition
Kenya	-2.24	1.76	100.0	42.4	1 (1991-93) Ethnic war
Lesotho	2.16	2.28	33.3	40.6	2 (1970; 1994-8) Regime transition-1; Complex-2
Madagascar	-1.52	-0.97	75.0	64.7	1 (1974-5) Regime transition
Mali	-1.59	0.07	75.0	50.0	1 (1990-3) Ethnic war
Morocco	2.93	2.51	27.8	28.0	2 (1963-5; 1975-89) Regime transition-1; Ethnic war-2
Mozambique	-3.44	0.07	62.5	62.5	1 (1976-92) Revolution
Niger	-3.23	-1.51	100.0	59.5	1 (1996) Regime transition
Nigeria	0.21	1.05	61.6	38.5	2 (1964-70; 1980-5) Complex
Papua New Guinea	-0.22	-1.21	54.6	69.2	1 (1988-98) Ethnic war

Panel B.1 Continued on the next page

Panel B.1: Continued

Country	Gy		yng%		Number and Nature of Crises
	Crisis period	Non-Crisis Period	Crisis period	Non-Crisis period	
Rwanda	-2.20	1.93	46.2	33.3	2 (1963-66; 1990-8) Complex
Senegal	-0.44%	-0.30%	45.5%	48.2%	2 (1962-4; 1991-8) Regime transition-1; Ethnic war-2
Sierra Leone	-1.78	0.52	54.6	45.8	2 (1967-71; 1991-8) Regime transition-1; Complex-2
Uganda	1.67	1.93	39.4	25.0	1 (1966-98) Complex
Zambia	0.71	-1.30	66.7	69.0	2 (1968-72; 1996) Regime transitions
Zimbabwe	1.26	2.62	56.3	31.3	1 (1972-87) Complex

Panel B.2: Countries for which “yes” is greater than 1

Country	Gy		yng%		Number and Nature of Crises
	Crisis period	Non-Crisis Period	Crisis period	Non-Crisis period	
Argentina	1.62	1.52	40.0	35.3	2 (1966; 1973-80) Regime transition-1; Complex-2
Brazil	2.23	1.22	16.7	21.0	1 (1964-5) Regime transition
Chile	-4.38	3.22	50.0	15.9	1 (1973-6) Complex
Columbia	1.94	1.87	7.1	23.3	1 (1984-8) Revolution
Dominican Republic	1.13	3.28	33.3	16.7	1 (1961-6) Complex
Ecuador	6.33	1.54	0.0	31.0	1 (1970-2) Regime transition
Egypt	2.77	2.50	25.81	2.39	1 (1986-1998) Revolution
El Salvador	-1.66	2.09	46.7	10.3	1 (1977-92) Complex
Ethiopia	0.13	0.80	35.3	30.0	1 (1961-94) Complex
Greece	4.05	3.53	0.0	20.9	1 (1967) Regime transition
Guatemala	1.36	1.34	25.8	25.0	1 (1966-96) Complex
Haiti	11.56	3.16	0.0	53.3	1 (1991) Regime transition
India	2.54	-	27.3	-	1 (1952-98) Ethnic war
Indonesia	3.04	5.08	22.2	9.1	3 (1956-66; 1975-92; 1977-98) Complex (all three)
Iran	0.64	5.58	40.9	19.1	3 (1952-5; 1963; 1977-98) Regime transition-1; Revolution-2; Complex-3
Israel	2.83	4.35	21.9	8.3	1 (1967-98) Ethnic war
Jordan	-3.71	3.47	50.0	34.2	2 (1957; 1967-71) Regime transition-1; Revolution-2

Panel B.2 Continued on next page

Panel B.2 [Continued]

Country	gy		yng%		Number and Nature of Crises
	Crisis period	Non-Crisis Period	Crisis period	Non-Crisis period	
Korea, South	4.43	5.56	25.0	12.5	2 (1961-3; 1979) Regime transition-1; Revolution-2
Mexico	2.27	2.04	0.0	18.6	1 (1994) Ethnic war
Nicaragua	-5.28	0.81	83.3	43.8	1 (1978-90) Complex
Pakistan A	-3.16	3.49	50.0	7.1	1 (1958-61) Complex
Pakistan B	2.37	3.52	13.6	33.3	2 (1971-7; 1983-98) Complex-1; Ethnic war-2
Panama	4.23	2.52	0.0	26.2	1 (1968-9) Regime transition
Peru	-0.35	2.21	41.2	22.2	2 (1968; 1982-97) Regime transition-1; Complex-2
Philippines	1.13	2.44	26.7	7.1	1 (1969-98) Complex
Romania	-5.48	5.02	100.0	21.6	1 (1989) Revolution
South Africa	-0.46	2.03	60.0	10.4	2 (1976-7; 1984-96) Revolution-1; Complex-2
Sri Lanka	2.80	1.56	5.9	11.1	2 (1971; 1983-98) Revolution-1; Complex-2
Syria	8.73	2.84	20.0	30.3	2 (1958-63; 1981-2) Revolution; Complex-2
Thailand	4.40	4.98	7.7	11.1	3 (1957; 1967-83; 1991-8) Regime transition-1; Complex-2 & 3
Turkey	2.30	3.02	30.0	16.7	2 (1971: 1980-98) Regime transition-1; Complex-2
United Kingdom	1.97	2.49	23.1	0.0	1 (1969-94) Ethnic war

Note: The State Failure Taskforce Report (Phase III) divides “state failure events” into the following five categories:

- (1) Revolutionary wars – episodes of sustained violent conflict between organization and politically organized challengers that seek to overthrow the central government, to replace its leaders, or seize power in one region.
- (2) Ethnic wars – episodes of sustained violent conflict in which national, ethnic, religious, or other communal minorities challenge governments to seek major changes in status.
- (3) Adverse regime changes – major, abrupt shifts in patterns of governance, including state collapse, periods of severe elite or regime instability, and shifts away from democracy toward authoritarian rule.
- (4) Genocides and politicides – sustained policies by states or their agents, or, in civil wars, by either of the contending authorities that result in the deaths of a substantial portion of a communal or political group.

(5) Complex – complex events are made of two or more temporarily linked wars and crises. If events overlap or if four years or less separate the end of one event and the onset of the next, they are combined into complex events.

Appendix Table A.2

List of Variables Used in Statistical Analysis

Variable Acronym	Definition of Variable	Comments
gy	Growth of income per capita	Data from Penn World Tables
nccpr	Ratio of non-crisis years to crisis years	Computed as ratio of ncy (non-crisis years) to cy (crisis years)
yes	Years since nation state created	Using 1955 as the benchmark date, the greatest value for “yes” is 141 (China, Thailand, Turkey and the United Kingdom)
cpC	=1 if any of the crisis years involve a “complex” crisis =0 otherwise	Complex crises involved more than one of the following – regime transition, ethnic war, revolution – occurring simultaneously
pini	Initial level of physical infrastructure per capita (five year average)	Absolute value (based upon electrical generating capacity, railroad kilometers, paved road kilometers, and telephone mainlines per capita)
pinf	Final level (1991/5) of physical infrastructure per capita	Absolute value (based upon electrical generating capacity, railroad kilometers, paved road kilometers, and telephone mainlines per capita)
gpini	Growth rate of index for physical infrastructure per capita	Overall index based upon three per capita indices – for electrical generating capacity; for railroads and paved roads combined; and for telephone mainlines
Cnccr	=1/[cpC*nccpr] if cpC = 1 = 0 otherwise	Measures the degree to which a country is burdened by complex political crises as a percentage of years observed between 1955 and 1998
to	Trade openness = ratio of imports plus exports to GDP	
toWH	to*WH	WH = 1 if country in Western Hemisphere =0 otherwise
toE	To*E	E = 1 if country in Europe; = 0 otherwise
toAF	to*AF	AF = 1 if country in Africa; = 0 otherwise

Appendix Table A.2 [Continued]

List of Variables Used in Statistical Analysis [Continued]

toAS	To*AS	AS = 1 if country in Asia; =0 otherwise [includes Cyprus, Turkey and Papua New Guinea]
pva	Average level of polity variable	Variable measures “democracy,” ranging from –10 (authoritarian) to +10 (democratic)
ap	Average population size	Figures in 1,000s (computed by averaging population figures over period of observation for each country)
apg	Growth rate of population	
sr	Savings rate	The “csave” variable in the Penn World Tables
gs	Government share in total demand	From Penn World Tables (government share in CGDP)
Rgr	Absolute value of difference between ratio of growth in physical infrastructure to growth in income per capita and unity (one)	Takes a unitary elasticity of growth in physical infrastructure to growth in income per capita as the benchmark for comparison for individual country experience
Mal	=1 if World Health Organization in January, 1986 indicates that “malaria exists throughout the year in the whole country” =0 otherwise	Taken from World Health Organization (1985), <i>Vaccination Certificate Requirements and Health Advice for International Travelers</i> (Geneva)
URB	Average level of urbanization for period 1960-90	Computed by averaging together the urbanization levels in 1960, 1970, 1980 and 1990.
govim	The product of the polity variable pva and the government’s share in total demand = gs*pva	The damage or benefit a government does to an economy depends on the degree to which it is democratic as opposed to autocratic and the economic impact of the government proxied by governmental share in income

Figure 1: Average Level of Income Per Capita and Infrastructure per Capita, Five Year Averages for Initial Period (Typically 1955-59), 59 Countries in Failed State Data Set

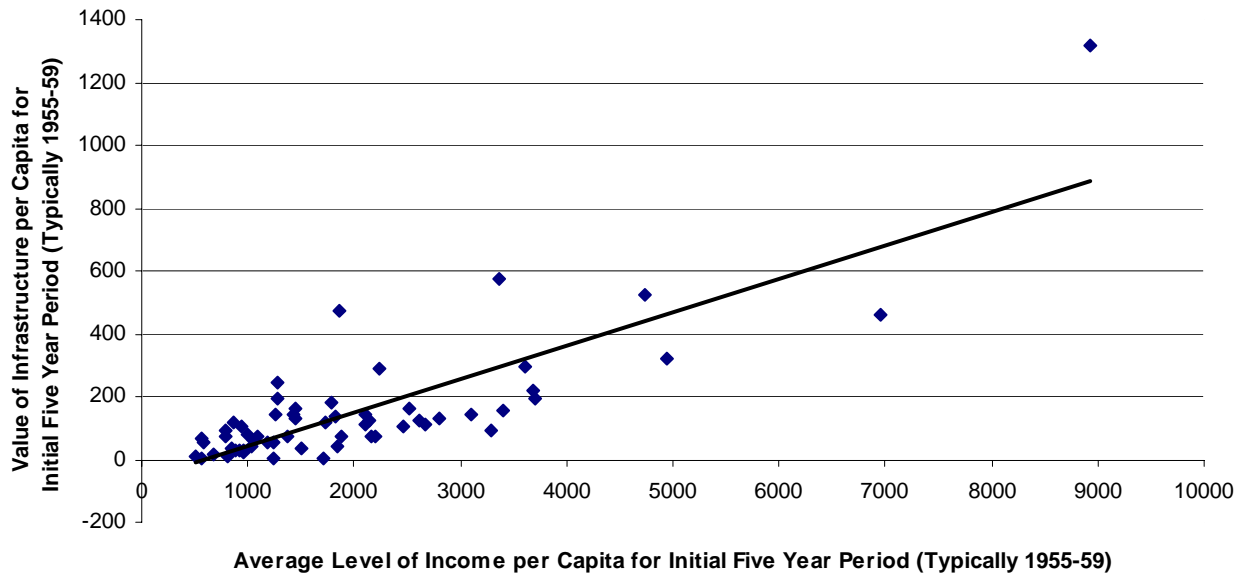


Figure 2: Average Level of Income Per Capita and Infrastructure Per Capita, Five Year Averages for Final Period (Typically for 1991-95)

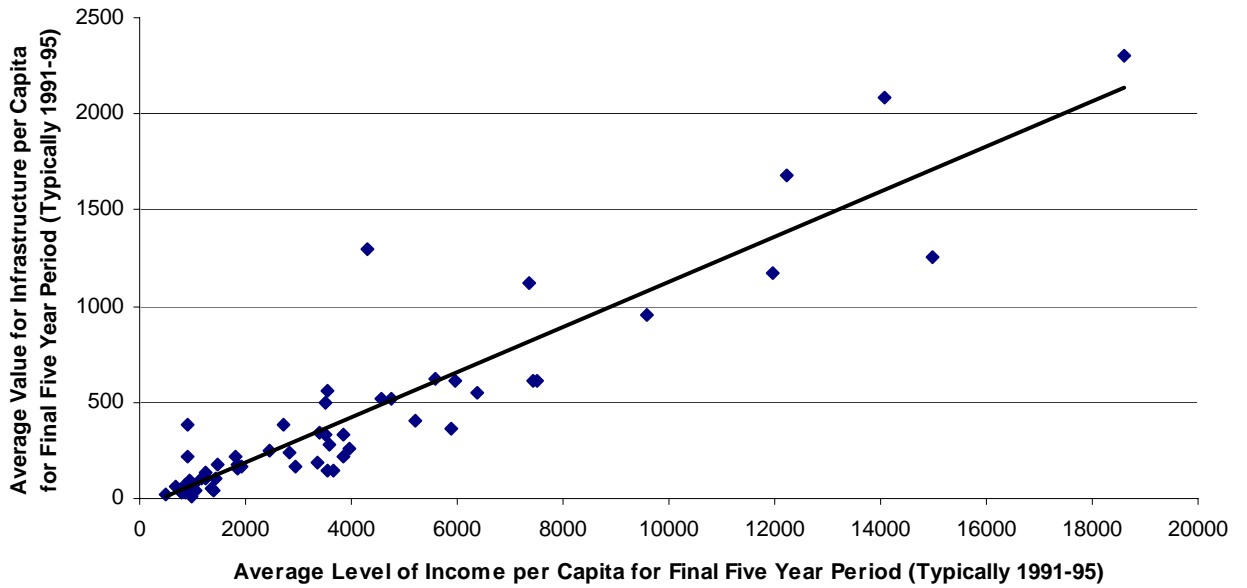


Figure 3: Growth Rate of Income per Capita and Growth Rate for Physical Infrastructure per Capita, Average for Initial Year to Terminal Year (Typically 1955 to 1995), 59 Countries in Failed State Data Set

