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Institutional Quality and Growth Traps

David Dollar

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AUTHOR AFFILIATION: Brookings Institution

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PAFTAD International Secretariat
Crawford School of Public Policy
College of Asia and the Pacific
The Australian National University
Canberra ACT 0200 Australia

Institutional Quality and Growth Traps

By David Dollar, Senior Fellow

John L. Thornton China Center, Brookings[1]

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China will stay firm in its commitment to reform and opening-up. It will focus on structural reform, encourage mass entrepreneurship and innovation, increase supply of public goods and services… As long as we succeed in doing so, the Chinese economy will successfully overcome the "middle-income trap" and move ahead along the path of sustainable and sound development. – Premier Li Keqiang, Davos speech 2015

1. Introduction

The notion of a "middle-income trap" has entered the lexicon of development. Leaders of countries that have grown well, such as China's Premier, Li Keqiang, worry that as they reach middle income there will be a sharp slowdown in the growth rate. What is generally meant by the middle-income trap is the notion that, after the easy sources of growth have been exploited (rural-urban migration, capital accumulation, export expansion from a low base), a country will fail to develop new sources of growth such as technological innovation and product differentiation that are crucial for making it to high income (Gill and Kharas 2015). More generally, there is a risk for economies at every level of development that they will fall into a low-growth equilibrium. In this paper I use data on growth rates over the decades of the 1990s and 2000s to examine the phenomenon of low-growth traps, and in particular the relationship between growth and institutional quality. An appealing idea is that high-quality economic and political institutions will enable countries to adjust policies to changing circumstances and to maintain relatively high growth. One of

the strongest empirical regularities about growth is “convergence,” the tendency for economies to grow faster at low levels of development. Hence “relatively high growth” means doing well for one’s income level, slowing down gradually as per capita income rises, and avoiding large decelerations in the growth rate.

The next section takes an initial look at the data and highlights several stylized facts about growth and institutions in the 1990s and 2000s. Over these two decades the group of countries that slowed down significantly was high-income ones. Leaving aside high-income economies, developing economies saw an acceleration between the 1990s and 2000s of about 3 percentage points, both for low-income and middle-income economies. Hence there was no special tendency in this period for countries to slow down in middle income. Nevertheless, there are always countries growing well and others doing poorly. One of the best predictors of which countries grew well over the whole 20-year period and which did not, was the quality of economic institutions at the beginning of the period. I capture economic institutions by combing indices that measure property rights and the rule of law, anti-corruption efforts, and the effectiveness of government. Another stylized fact is that the resulting measure of economic institutions is highly persistent, with little change over the period. One might think then that growth rates are persistent, but paradoxically they are not: growth rates in the 2000s have a slight, insignificant correlation with growth rates in the 1990s.

Section 3 then looks in more detail at institutional quality relative to level of development. Economic institutions tend to improve with per capita GDP.

Countries that have good institutions relative to their income level grow faster, especially at low income. The fact that institutional quality measures are highly persistent, however, means that in most cases there is only slow progress, if any, in improving economic institutions. As countries grow successfully, their per capita GDP rises quickly and a country that has good institutions at one level of development soon finds that it has poor ones at a higher level. Not constantly improving institutions is a kind of trap that countries can fall into at any income level.

Section 4 considers the relationship between political institutions and economic institutions. For the poorer half of countries in the world there is little relationship between economic institutions and Freedom House's Civil Liberties index. Authoritarian countries such as China and Vietnam have been able to develop good institutions for their income level and to grow well for some decades. For the richer half of countries in the world, however, there is a fairly tight link between political openness and good economic institutions. Authoritarian countries evidence very sharply diminishing marginal returns, suggesting that these countries can start an accumulation-driven growth process that takes them from low to middle income, but that they lack the innovation capacity to continue growth from middle to high income. Thus one kind of trap is not reforming political institutions as development proceeds. The last section briefly concludes.

2. *Stylized facts (and paradoxes) about institutions and growth in the 1990s and 2000s*

In this section I use data on the growth rates of 146 countries to illustrate some stylized facts about institutions and growth over the past two decades, some of which appear paradoxical. The two decades are interesting in that the 1990s was a difficult era for emerging economies with crises in East Asia, Russia, and Latin America. The 2000s, on the other hand, witnessed the Global Financial Crisis. Despite its name, the GFC was particularly hard on developed economies, whereas China and many other developing economies grew well throughout the decade. So, one can anticipate before going to the data that developing economies in general experienced growth accelerations between the 1990s and 2000s, whereas developed countries saw the opposite. The growth rates that I use are real per capita GDP growth rates from each country's national accounts, as reported in the Penn World Tables version 8 (Feenstra et al. 2013).

Figure 1. Change in decadal growth versus GDP per capita, 2000

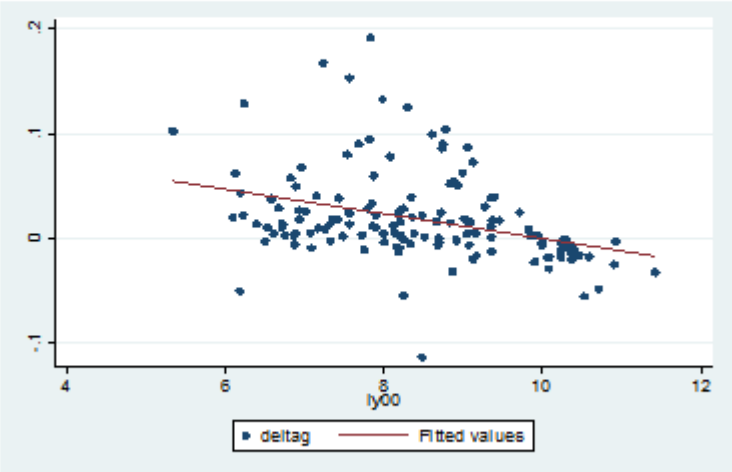
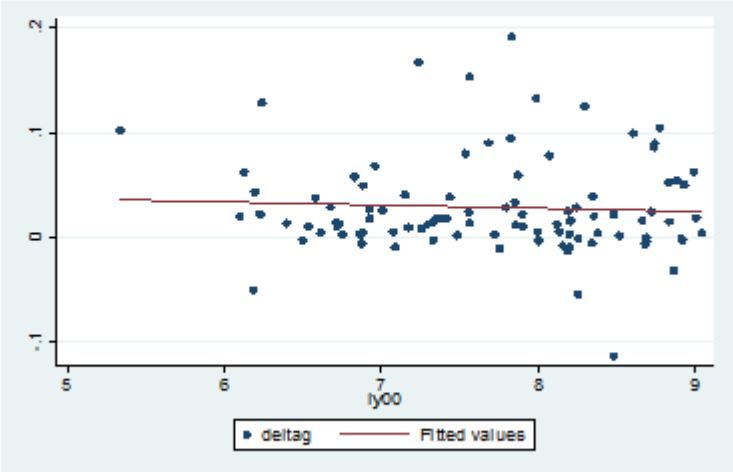


Figure 1 plots the change in average growth rate between the 2000s and the 1990s against the (log) per capita GDP in 2000. So, this figure is addressing whether slowdowns or accelerations were concentrated at any particular level of income in the year 2000. As anticipated, growth rates of virtually all the rich countries slowed down. Growth decelerations of at least 2 percentage points were experienced by Bahrain, Denmark, Ireland, Kuwait, Norway, Portugal, Qatar, and South Korea. If we take out the richest one-third of countries (top 48, to be exact), we are left with Figure 2. For these 98 developing countries, average growth rate accelerated 2.9 percentage points in the 2000s, with no discernible difference between low-income and middle-income. The middle-income countries have more dispersion: some significant slowdowns and some impressive accelerations. The decelerations of at least 2 percentage points were experienced by Liberia, Bosnia/Herzegovina,

Equatorial Guinea, and Iraq. In this time period there was no strong tendency for middle-income countries to slow down.[2] Hence the first stylized fact about these recent decades is that the growth rate of rich countries slowed down, whereas growth rates both of low-income and middle-income developing countries accelerated.

Figure 2. Change in decadal growth without the rich countries



The second stylized fact concerns the relationship between economic institutions and growth over the whole twenty year period. A popular and intuitive idea in the literature is that economic institutions are important determinants of economic growth (Knack and Keefer 1997; Acemoglu et al. 2001). Empirically, there

[2] Eichengreen et al. 2012, 2013, focus on a longer period of time and investigate growth slowdowns of 2 percentage points or more. They find a dispersion of incomes at which there is greater frequency of slowdowns with nodes at log 9.3 and log 9.6. Between the 1990s and the 2000s, 12 countries in the dataset had slowdowns of 2 percentage points or more: one low-income, three middle-income, and eight high-income.

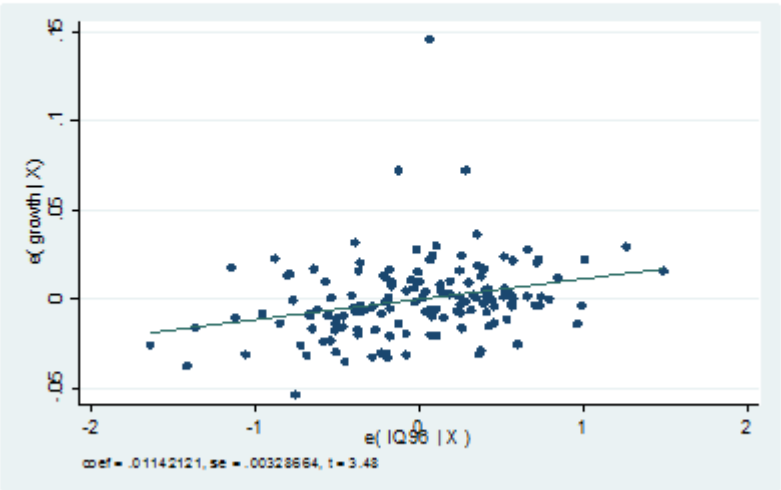
are a number of options for measuring economic institutions. I choose to rely on three different indicators from the World Governance Database:

- **The Rule of Law Index** "captures perceptions of the extent to which agents have confidence in and abide by the rules of society, and in particular the quality of contract enforcement, property rights, the police, and the courts, as well as the likelihood of crime and violence "
- **Control of Corruption** "captures perceptions of the extent to which public power is exercised for private gain, including both petty and grand forms of corruption, as well as "capture" of the state by elites and private interests";
- **Government Effectiveness** "captures perceptions of the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies." (Worldwide Governance Indicators 2015).

The three measures capture difference aspects of a good institutional environment for effective public action and for private market activity. Because the three are fairly highly correlated, there is little hope to separately identify the impact of each. Therefore I create a single index of Institutional Quality by taking a simple average of the three, each of which is an index with mean of zero and standard deviation of 1.0. Unfortunately the earliest year of availability is only 1996, but that is nevertheless fairly close to the beginning of our time period. The Institutional Quality Index in 1996 is highly correlated with growth rates over the twenty-year period 1990-2010.

Figure 3, for example, shows a partial scatter plot of growth and Institutional Quality from a regression of the growth rate on (log) initial per capita GDP, Institutional Quality 1996, and natural resource rents as a share of GDP (Appendix Table 1). There is a large literature showing that the results of growth regressions are sensitive to what variables are included and creating skepticism about the prospect for carefully identifying the effect of one specific factor such as economic institutions (Levine and Renelt 1992, Doppelhofer et al. 2000). The point here is that economic institutions are a fairly robust predictor of future economic growth, even if we cannot identify the specific quantitative effect.

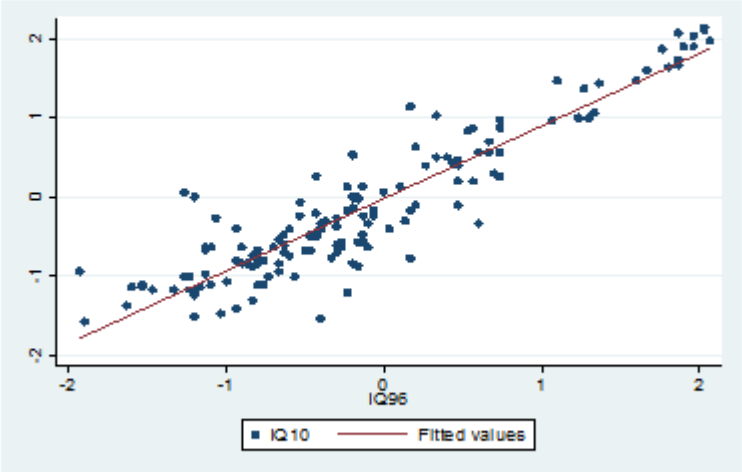
Figure 3. Countries with better Institutional Quality grow faster
(GDP per capita growth rate, 1990-2010)



The third stylized fact is that, not surprisingly, economic institutions are quite persistent. Such persistence is what one would expect given that institutions by definition are deep-seated features of constitutions, laws, and norms. The cross-

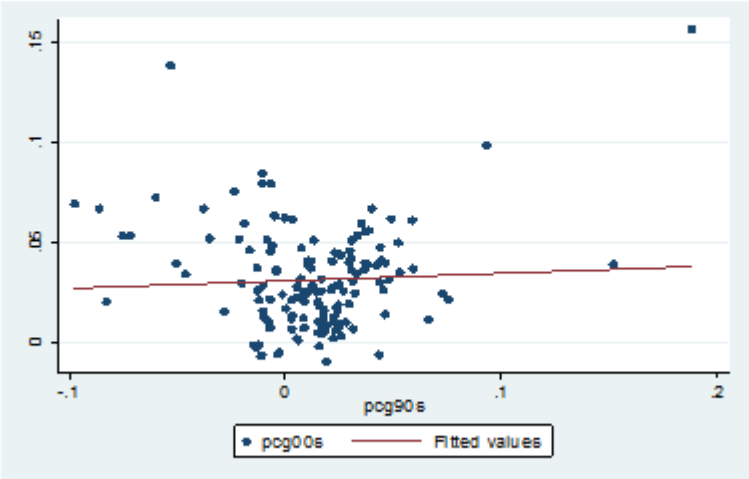
country correlation of the Institutional Quality Index 1996 and the index in 2010 is 0.92 (as illustrated in Figure 4).

Figure 4. Institutional Quality is highly persistent



Given that economic institutions are is important for growth and that institutions are highly persistent, one would expect growth rates from decade-to-decade to be persistent as well. However, the paradoxical stylized fact is that growth rates from one decade to the next are in fact uncorrelated (Figure 5). This is the point of a recent paper by Pritchett and Summers (2013), which shows that one of the most powerful tendencies in growth dynamics is regression to the mean.

Figure 5. But growth rates are not (growth rates in 2000s and 1990s)



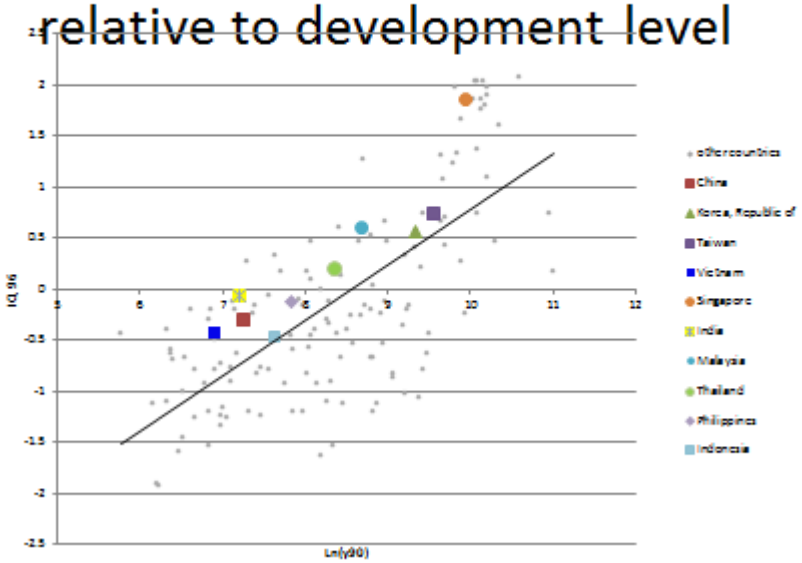
The conclusion from a first look at the data for 1990-2010 is that there is no particular tendency for middle-income countries to experience growth slowdowns. It happened that rich country growth rates slowed a lot in the 2000s, but that is not necessarily a general pattern that will always be repeated. What I take away from the data is that growth slowdowns and accelerations are possible at every level of development. How do we understand these slowdowns and accelerations? How can economic institutions play a role in the explanation, given that they tend to be persistent, whereas growth rates are not?

3. Economic institutions and level of development

One way to resolve the paradox of persistence of institutions and non-persistence of growth rates is to focus on the quality of institutions *relative to the level of development.* In general, measures such as the Institutional Quality Index rise

with per capita GDP, though in fact the fit is not that tight and there is a lot of dispersion (Figure 6). Most developing countries have below-average institutional quality, but, as noted, there is large dispersion. The figure illustrates Institutional Quality 1996 (first year available) and log per capita GDP in 1990. Ten Asian economies are identified; they fall into three groups. Of these countries, China, India, and Vietnam were the poorest in 1990. By 1996 all three were well into their economic reform programs. Compared to the planned-economy era, China and Vietnam had made initial steps to improve private property rights through decollectivization of agriculture, foreign investment law to partially open to FDI, and opening of some sectors to a domestic private sector (See Eckaus 1997 on China's early reform, and Dollar and Ljunggren 1997 on Vietnam's). China and Vietnam were each measured to be about half a standard deviation below the mean on the Institutional Quality 1996 index: they did not have especially good economic institutions; however, they were far above the regression line, indicating that they had good institutions for their level of development. India was measured to be slightly better than China.

Figure 6. Key is institutional quality relative to development level



Think of these economies competing with other low-income countries in the early 1990s to attract FDI, generate exports, and begin the growth process. They were very low-wage economies, befitting their low-income status. Among the countries with which they were competing, they proved to be attractive production locations and they have grown well in the past two decades.

A second group of Asian countries consists of Indonesia, the Philippines, Thailand, and Malaysia. Of all the Asian countries identified, Indonesia had the weakest institutions in 1996. The Philippines and Thailand were well above the regression line in figure 6, but as noted below the quality of their institutions then deteriorated over the subsequent period. Malaysia, frankly, is something of a mystery. Of these countries, Indonesia, Thailand, and Malaysia had growth over 1990-2010 that was above the world average of 2.2% but disappointing for East Asia. The Philippines, with growth of 1.7%, did not reach the world average.

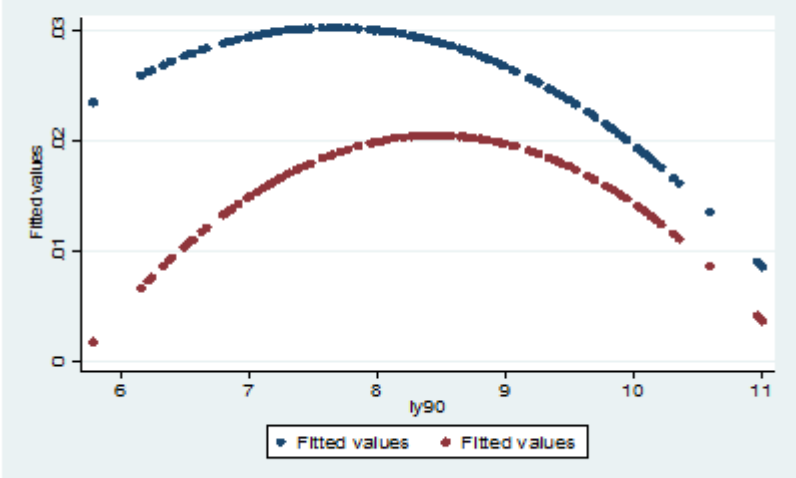
Figure 6 also identifies three higher income Asian economies: South Korea, Taiwan, and Singapore. Unfortunately we do not have comparable data from an earlier period, but other information suggests that these Asian tiger economies were steadily improving their economic institutions starting with initial reforms in the 1960s (Tsiang 1984; Sakong and Koh 2010). By 1996 South Korea and Taiwan were measured to have pretty good economic institutions, not quite at developed country levels, but again, above the regression line: good for their level of development. Singapore stands out as having among the best institutions in the whole data set, about two standard deviations above the mean. The three all grew well during the past 20 years, given that they were already at or near high income: South Korea at 4.8%, Taiwan at 4.4%, and Singapore at 3.7%. All of them grew faster than Indonesia, Thailand, the Philippines, and Malaysia even though, given their higher income, they would have been expected to grow more slowly because of convergence.

Economies that have good economic institutions for their level of development tend to grow faster in subsequent periods. A simple way to illustrate this is to separate the observations above the regression line in Figure 6, and those below; for each group separately trace the quadratic relationship between growth (1990-2010) and initial per capita GDP (Figure 7).[3] Countries with relatively good economic institutions tend to grow faster, and the difference is particularly acute at low levels of development. A poor country that can manage to put reasonably good institutions in place, has all of the convergence advantages: it can attract foreign

[3] The regressions underpinning Figure 7 are in Appendix Table 1.

investment, borrow technology from abroad, and start the catch-up process. These economies on average grew at about 3.0 percent both at low- and middle-income, whereas wealthy economies grew at about 1.0. Note that the evidence for convergence among economies with poor institutions is weaker. At low-income these economies do not grow any faster than developed ones; in middle-income they tend to grow somewhat faster, peaking at about a 2.0 percent growth rate.

Figure 7. Growth trajectories for good (blue) and poor (red) institutional quality



Thinking about institutions relative to level of development naturally leads to the question, are institutions keeping up? Is there regular institutional improvement as the economy develops? We know the general answer: institutions are persistent so, no, in most cases there is not steady institutional improvement. Figure 8 shows the Institutional Quality Index and per capita GDP at the end of the twenty-year period, 2010. For China, India, and Vietnam, the Institutional Quality measure has barely changed from 1996; all three countries experienced stalls in their economic

reform programs starting in the early 2000s (Dollar 2004, Naughton 2014). But these countries per capita GDPs have increased substantially because of their successful growth. This is especially true for China, growing at about 10 percent per capita in both the 1990s and the 2000s. By 2010, China's Institutional Quality measure is well below the regression line; China now has poor economic institutions for its level of development. Vietnam is right on the regression line: it has given up its previous advantage. India remains somewhat above the line and continues to grow well but its institutions have not improved so it will run into the same problem unless it can accelerate reform. Indonesia, Philippines, and Thailand have all fallen below the line, indicating a general problem of East Asian economies not keeping up with institutional reform.

Referring back to Figure 7, imagine a developing economy shifting from the blue line to the red line; it would experience a significant slowdown as its institutional quality lagged. As per capita GDP and wages rise, such an economy is competing with a new, higher quality group of peers. Without continual institutional improvements, there will be a tendency for the growth rate to slow down sharply. It is too early to be sure, but it appears that China and Vietnam are both experiencing growth slowdowns in recent years that are consistent with this story.

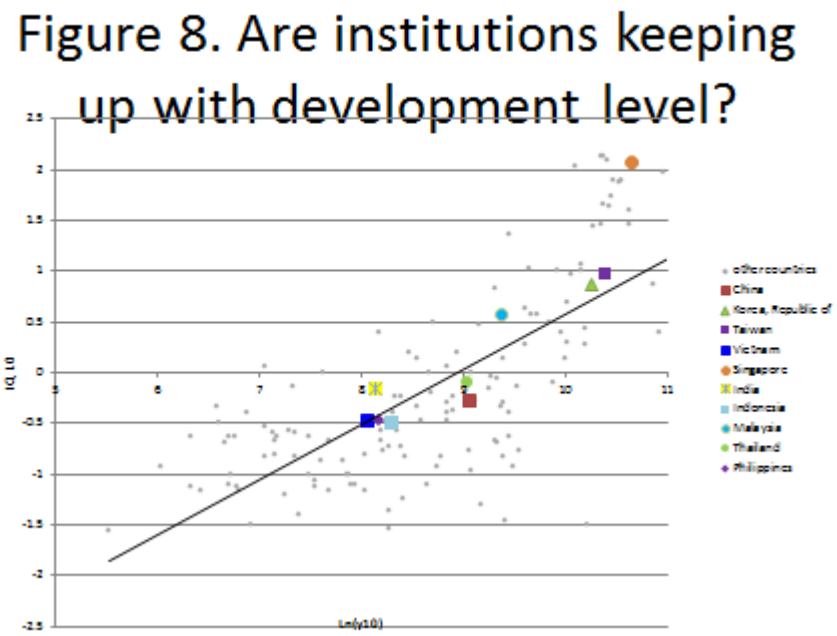


Figure 8 also again identifies South Korea, Taiwan, and Singapore. Their per capita incomes have risen, but the measure of Institutional Quality has also improved, from around 0.5 in 1996 to 1.0 in 2010 for South Korea and Taiwan, and from below 2.0 to above 2.0 for Singapore. Of the economies highlighted, these three had the best economic institutions in 1996 and yet they also had the biggest absolute increases in the IQ index between 1996 and 2010, though presumably increases are harder as one gets closer to the frontier.

To summarize among the Asian economies: the three poorest at the beginning of the period grew well through 2010 but their institutional quality has stagnated, raising questions about their future growth. Already China and Vietnam appear to be slowing down quite sharply. The group in the middle either did not have relatively good institutions to begin with (Indonesia) or witnessed the largest declines in quality over the period (the Philippines, Thailand). Malaysia admittedly is

a puzzle. The group as a whole grew OK but not great. The biggest sustained improvement in economic institutions was achieved by South Korea, Taiwan, and Singapore, and all have grown well among their cohort and reached high income.

4. Political institutions and economic institutions

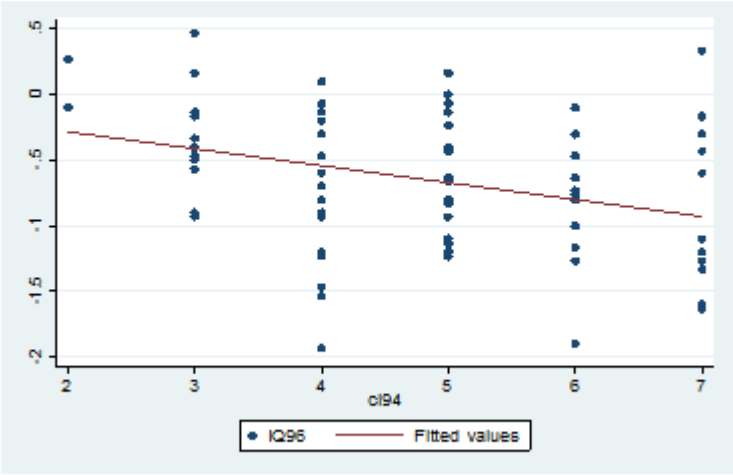
What about the relationship between political institutions and economic institutions? Acemoglu and Robinson's book, *Why Nations Fail,* emphasizes the link from political institutions to economic institutions to outcomes. In their model, countries with democratic political institutions tend to develop inclusive economic institutions, which in turn lead to innovation and productivity growth and hence sustained improvements in living standards. An alternative view these days is the "Beijing consensus" model: democratic countries seem incapable of making the difficult decisions and investments needed to sustain prosperity, whereas an authoritarian "developmental" state is capable of operating more efficiently.[4] Huntington (1968) offers something of an intermediate argument, that premature increases in political participation — including early elections — could destabilize fragile political systems. This laid the groundwork for a development strategy that came to be called the "authoritarian transition," whereby a modernizing dictatorship provides political order, rule of law, and the conditions for successful economic and social development. Once these building blocks were in place, other aspects of

[4] Ramo (2004) argues that China has created a superior development model with an authoritarian system and state capitalism. Williamson (2012) and Zhao (2010) acknowledge that the model has produced rapid growth for China up to a point, but argue that the model is unsustainable.

modernity like democracy and civic participation could be added. What does the evidence from the past 20 years suggest about this debate?

To measure political institutions I use Freedom House's Civil Liberties Index. Freedom House also has a Political Rights index which focuses on democratic political institutions. I prefer the Civil Liberties index which measures aspects such as freedom of speech, the media, assembly, and association. In practice the two series are highly correlated and will not produce different empirical results. I prefer the Civil Liberties measure because I think of it as more closely connected to the environment for innovation and competition, that is, the economic institutions.

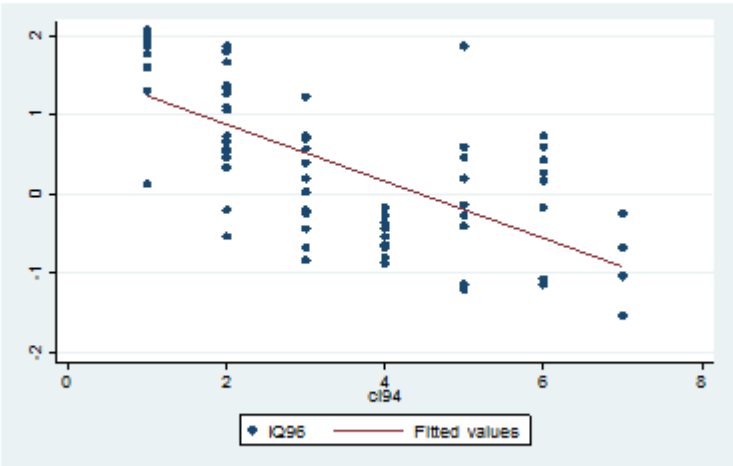
Figure 9. Among the poorer half of countries there is little correlation between economic institutions and Civil Liberties



The Civil Liberties index is available for a large group of countries starting in 1994. It ranges from 1=completely free to 7=completely unfree. Figure 9, which is based on the poorer half of countries in 1990, plots Institutional Quality 1996 against Civil Liberties 1994. Among the poorer half of countries in the world, there is little

correlation between rule of law and political institutions (correlation coefficient = -0.33). I have already highlighted that authoritarian countries such as China and Vietnam had relatively good economic institutions among poor countries in 1996 (they are among the observations in the upper-right quadrant). Among the richer half of countries, on the other hand, there is fairly high correlation (=-0.67) between political freedom and Institutional Quality (Figure 10). It is striking that there is only one country rated 5, 6, or 7 on the Civil Liberties scale (that is, lacking freedoms) that was above 1.0 on the Institutional Quality index: Singapore. In 1994 Freedom House rated Singapore a "5" on Civil Liberties; as previously noted, it had among the best economic institutions in the world.

Figure 10. Among richer countries there is a tight connection

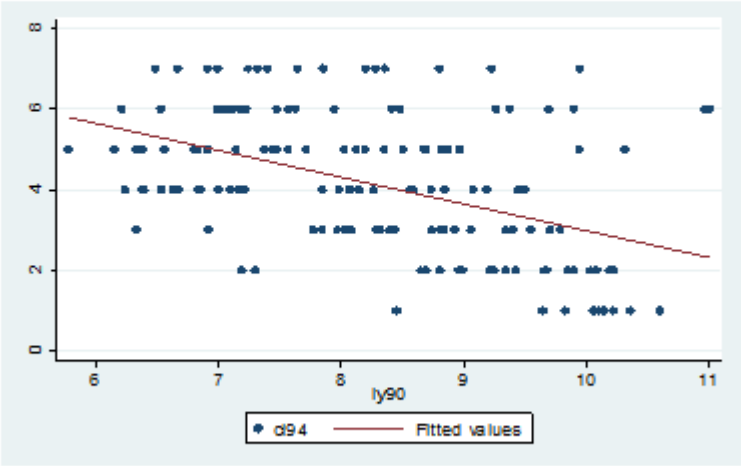


Do authoritarian or democratic countries tend to grow faster? I answer this question by focusing on political institutions relative to the level of development. Figure 11 shows the Civil Liberties measure in 1994 plotted against (log) per capita

GDP in 1990. Observations below (above) the regression line are countries with relatively democratic (authoritarian) political institutions for their level of development. Then I look at the growth performance over the next 20 years for the two groups separately. It turns out that, in the 1990-2010 period, at low levels of per capita income authoritarian countries tended to grow faster than democratic ones, but the relationship switches at a per capita GDP of about $8,000 (Figure 12)[5]. In 1990, $8,000 in PPP terms was about 25% of U.S. per capita GDP; given the important role of catch-up in growth at low income levels it may make more sense to understand the result as authoritarian economies grow well up to about the point where they reach 25% of U.S. productivity.

[5] The regressions underpinning Figure 12 are in Appendix Table 1. While authoritarian countries grew faster than democratic ones at low levels of development, they also had more dispersion. In the 1990-2010 period, the authoritarian countries among the poorer half of the dataset grew at an average rate of 3.1 percent with a standard deviation of 3.7. The democratic countries grew at an average rate of 1.9 with a standard deviation of 1.6. One can think of authoritarianism in a poor country as a "high risk, high reward" strategy. You might get Park Chung-hee or you might get Sese Seko Mobutu.

Figure 11. Civil liberties 1994 and per capita GDP 1990

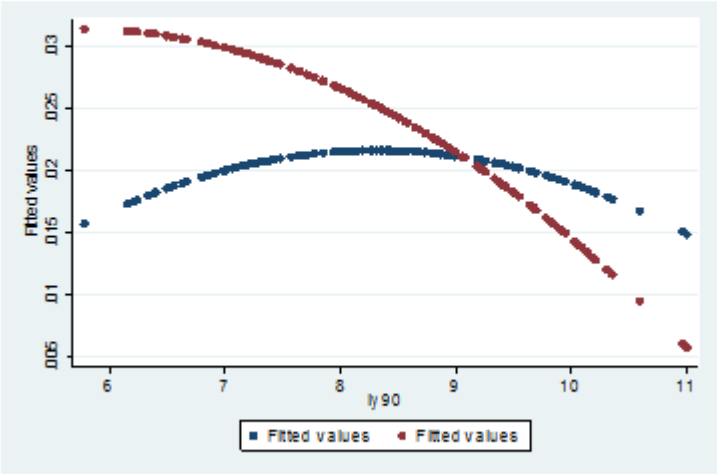


This is an interesting and plausible story. At low levels of per capita GDP authoritarian governments can be effective. The economic priority at this stage is to establish basic law and order and an environment in which private investment, including foreign investment, can begin to operate. This is a catch-up stage in which innovation is not yet that relevant. The growth path for authoritarian countries (the red line in Figure 12), however, suggests that there are sharply diminishing marginal returns. Authoritarian countries tend to rely on capital accumulation rather than innovation and productivity growth, so as diminishing returns set in, the growth rate drops sharply.[6] Past a per capita GDP level corresponding to about 25% of U.S. productivity, countries with good civil liberties tend to grow faster. This is consistent

[6] China has relied very heavily on capital accumulation to drive its growth, with an investment rate reaching nearly 50 percent of GDP in recent years. But the marginal product of capital has dropped sharply in recent years leading to a slowdown in growth (Dollar 2013).

with the argument that such freedoms are necessary for an advanced, competitive economy in which innovation and productivity growth are able to offset diminishing returns to some extent so that countries can maintain a solid growth rate.

Figure 12. Growth paths for authoritarian (red) and democratic (blue) countries



It is interesting that the ten Asian economies highlighted in the previous section fit this pattern surprisingly well. Based on the Civil Liberties measure in 1994, China, Indonesia, Malaysia, Thailand, Singapore, and Vietnam fall into the authoritarian group. Of these, China, Indonesia, and Vietnam are in the poorer half of the data-set and their average growth over the 20-year period was 6.4% per year. Of the democratic countries, India and the Philippines were among the poorer half of countries: their average growth rate was 3.3%, about half the rate of the authoritarians. Among the richer half of countries, however, the authoritarians (Malaysia, Singapore, and Thailand) grew at 3.6% while democratic South Korea and Taiwan averaged 4.6% growth. These groups thus evidence the sharply diminishing

returns among authoritarian countries compared to smaller (or in this case, non-existent) diminishing returns among the democracies.[7]

These growth patterns suggest an optimal political evolution in which a country has relatively authoritarian institutions up to middle income, and then makes a democratic transition when the country reaches about 25% of U.S. productivity. Curiously, this is roughly the pattern followed by South Korea and Taiwan, two of the most economically successful developing economies. Figure 13 shows in red the average Civil Liberties measure for South Korea and Taiwan as their per capita incomes increased. They were measured to be authoritarian (index=6) through the 1970s. Both countries had improved to "4" by 1987, at which point Taiwan was at 40% of U.S. per capita GDP and South Korea, at 31%. After that their ratings continued to improve until they reached completely free status.

Figure 13 also includes Vietnam, a country that was rated to be authoritarian (index=7) at the beginning of its economic reform. So far, Vietnam seems to be following in the footsteps of South Korea and Taiwan as it has liberalized somewhat in terms of political freedom and is now rated at 5, slightly better than South Korea or Taiwan at the same stage of development. But Vietnam is now entering the development phase where this line of thinking implies that it needs further political

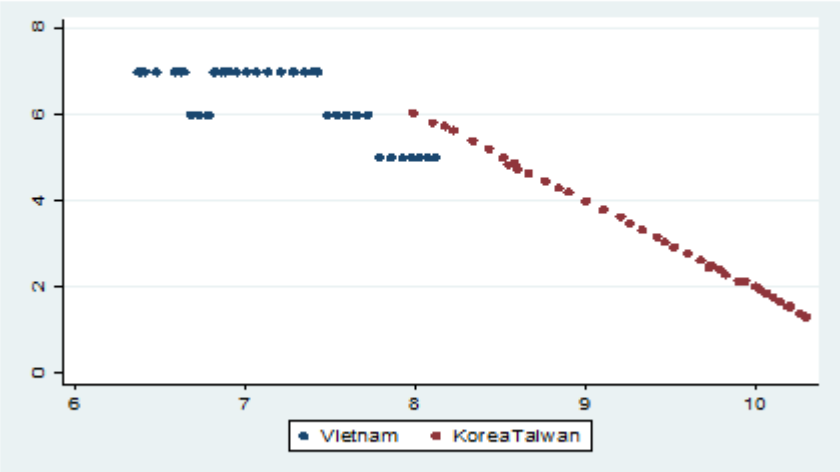
[7] I use the beginning of period Freedom House ranking to determine authoritarian or democratic. For almost all the countries the rating would be the same if one used the end-of-period rating. The obvious exception is Indonesia, which after 1997 had a rapid political transformation that brought it to 3 on the Civil Liberties scale by 2011. If one categorizes Indonesia as a low-income democracy, that just strengthens the basic story because in that case the low-income authoritarians, China and Vietnam, grew at nearly 8%, whereas the low-income democracies grew at 3.3%. Indonesia is the only one of the highlighted countries that underwent a major political transformation over the period and its growth rate accelerated from 2.9% in the 1990s to 4.0% in the 2000s. The other Asian economies averaged a minor slowdown of 0.2 percentage points between the decades.

liberalization over the next one to two decades if it is to continue to grow well. Greater freedom will be necessary to strengthen property rights and the rule of law and to improve government effectiveness so as to create an environment for innovation and productivity growth.

China, it should be noted, is not following the path of political liberalization as it transits through middle income. The civil liberties measure for China has remained at 6 for a long time, while its per capita GDP in PPP terms rose to 22% of the U.S. level by 2011 (most recent year in the Penn Tables) and continued to rise further in subsequent years. The new leadership of Xi Jinping has made it clear that it wants to pursue economic reform without political reform. [8] Not only has there not been political reform, but most observers feel that there has been recent backsliding in terms of freedom of ideas and debate. The recent historical evidence is that this path is likely to lead to sharply diminishing marginal returns to capital and a slowdown in growth. That appears to be happening as China's growth rate has slowed in a short time from above 11% to around 7%.

[8] The resolutions that came out of the important Third Plenum meeting in the fall of 2013 make clear that political reform is not on the agenda. See *Decision of the CCCPC on Some Major Issues Concerning Comprehensively Deepening the Reform*, **http://www.china.org.cn/chinese/2014-01/17/content_31226494_3.htm**

Figure 13. Freedom House Civil Liberties Index and PPP GDP per capita (log scale)



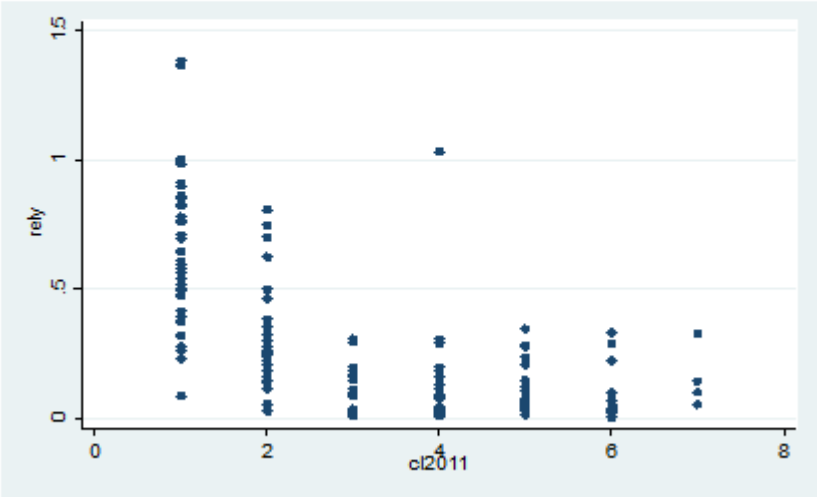
Acemoglu and Robinson discussed how their findings applied to China in a blog on the Huffington post (http://www.huffingtonpost.com/daron-acemoglu/china-superpower_b_1369424.html):

> Our research on national economies throughout world history shows that long-term economic growth, while indeed based on technological innovation, only sustains itself in the presence of democratic political institutions that provide people with incentives to innovate. China may continue to grow in the near term, but the limited rights it affords its citizens places major restrictions on the country's longer-term possibilities for prosperity.
>
> The country still lacks an independent judiciary and an independent media. Entrepreneurs have been jailed for dubious reasons -- not coincidentally when they went against businesses with stronger political backing. Many key

> economic decisions are still made by party elites who can change the CEOs of its largest companies on a whim.
>
> There will be limits on how much innovation such a system can generate, even if China keeps growing this decade. For all its changes, China still has what we term "extractive" political institutions, those that direct resources away from the people and toward the state and a small number of its elites… By their nature, extractive states are against the kind of innovation that leads to widespread prosperity: this kind of change threatens the hold on political and economic power that elites in such states fight to maintain.

Perhaps China can avoid this pattern of authoritarian countries slowing down sharply in middle income. However, up until now no authoritarian country has reached 35% of U.S. PPP per capita GDP (Figure 14). I have omitted the oil states from this figure as they are not really high-productivity economies, they just happen to sit on vast amounts of oil per capita. None of the countries rated 5, 6, or 7 on the Civil Liberties index in 2011 had reached 35% of U.S. productivity. Singapore is a bit of an exception; by 2011 it was rated 4 and had reached U.S. per capita income; it stands out in the figure as a bit of an exception. One should be careful not to turn historical patterns into immutable economic laws. It is possible that China will be able to create an innovative society despite restrictions on the internet and media, and what is taught in schools. But the historical evidence, and China's recent economic performance, is not encouraging.

Figure 14. Per capita GDP relative to USA and Civil Liberties, 2011



A final important question is how countries improve their institutions. For economic institutions, there is a technocratic answer to this question. The things measured by the Institutional Quality index used in this paper would be improved by policies such as judicial reform and independence; systemic anti-corruption measures including asset and income disclosure for officials and their families; and civil service reform to professionalize the government. However, a deeper question is how societies can generate political coalitions in support of these technocratic reforms. Looking at the relatively small number of successful examples in modern times suggests two ideas. First, as emphasized by Pierson (2000), large consequences may result from relatively small or contingent events; particular courses of action, once introduced, can be almost impossible to reverse; and consequently, political development is punctuated by critical moments or junctures that shape the basic contours of social life. In the cases of South Korea and Taiwan,

for example, the deaths of Chiang Kaishek and Park Chung-hee set in motion political changes that had broad effects. The critical moments are often exogenously created, but the important thing is to take advantage of them to promote political and economic reform (don't waste a good crisis). A second regularity is that successful cases often involve deep integration with more advanced polities and economies. In an earlier era, many of the success stories were Southern European countries that integrated with politically and economically more open Northern European economies. For South Korea and Taiwan, integration with the U.S. put pressure on them to carry out both economic and political reform. For poorer societies to integrate with richer ones, will generally pay off with stronger institutions and convergence to the richer level of income. The Trans-Pacific Partnership is likely to provide opportunities to Malaysia, Vietnam, and others willing to sign up to strengthen their economic and political institutions and lay a solid foundation for growth through to high income.

5. Conclusions

The recent evidence is that sharp slowdowns in growth can occur at every income level. Between the 1990s and the 2000s growth slowdowns were most common for high-income countries, no doubt a result of the fact that the locus of the global financial crisis was in those countries. There were also examples of growth slowdowns at low-income and at middle-income. So, a first conclusion is that growth traps can occur at every level of development. One of the robust predictors of future economic growth is *institutional quality, relative to the development level.* This implies that countries, at every level of development, need to constantly improve the quality of institutions. In reality, there is often a tendency for institutions to stagnate. As per capita income increases, however, a set of institutions that were competitive at one stage become a drag on growth at a more

developed stage. Countries that are successful over the long term react to temporary growth slowdowns with new reform plans.

Concerning political institutions such as freedom of the press, association, and assembly, at low income there is little correlation between them, on the one hand, and economic institutions such as rule of law, on the other. But past an income level of about $8,000 PPP, there is a strong correlation between political institutions and economic ones. This suggests a particular type of growth trap for authoritarian developing countries: they can grow well based on capital accumulation up to a point, but then their lack of innovation becomes a serious impediment. Taiwan and South Korea managed the transition to political openness at the right moment and continued to grow well, but there are few historical examples of such smooth transitions.

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Appendix Table 1

Dependent variables: Growth rate of per capita GDP, 1990-2010

Specification #	(1)	(2)	(3)	(4)	(5)
Number of countries	146	76	70	83	63
		Good Institutions	Poor Institutions	Demo.	Auth.
<u>Included variables</u>					
Log per capita GDP 1990	.050 (2.35)	.03 (1.21)	.044 (1.29)	.015 (.95)	.011 (.23)
(Log per capita GDP 1990)^2	-.003 (2.64)	-.002 (1.33)	-.003 (1.28)	-.0009 (.94)	-.001 (.34)
Institutional Quality 1996	.011 (3.48)	--	--	--	--
Natural resource rents/GDP	.0003 (2.43)	--	--	--	--
R^2	.10	.06	0.024	.011	.035

Note: t-statistics in parentheses