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Institutions and growth: the times-series and cross-section evidence

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Abstract: In his comprehensive analysis of the relationship between institutions and economic growth, Ha-Joon Chang, in his article 'Institutions and Economic Development: Theory, Policy and History', reviews the empirical evidence on this relationship emphasizing the contrast between the conclusions that one can derive from the time-series evidence and the claims often made in favor of 'liberalized institutions' based on the results of cross-section studies. Does the time-series evidence contradict the results of cross-section studies regarding the relationship between institutions and growth? In this comment, I argue that in stressing the contrast between these two kinds of evidence, Chang falls short of a full criticism, consistent with his theoretical analysis, of cross-section studies while at the same time failing to infer what the time-series evidence really shows.

Are more 'liberalized' institutions favorable to economic growth? In his review of the empirical evidence on this question, Ha-Joon Chang (2011) distinguishes the results of cross-section studies, which claim to find wide support for that notion, from the time-series evidence which, according to Chang, contradicts those claims. He provides three pieces of time-series evidence. First, the growth slowdown in Latin America and Sub-Saharan Africa during the period of market-oriented reforms compared with the growth performance of these regions in the 1960s and 1970s before the rise of neo-liberalism. Second, the fall in the trend rate of growth of Korea after the 1997 Asian financial crisis during which the country adopted sweeping institutional reforms under external pressure. Third, the fact that the rich capitalist countries grew faster between the end of the Second World War and the rise of neo-liberalism than under the period of classic liberalism before 1950 or the neo-liberal period since 1980.

I will focus my comments on Latin America's disappointing growth performance under the Washington consensus when compared with the post-war experience of the region up to 1980. My reading of the time-series evidence is slightly different from Chang's. It is true that Latin America as a whole has been growing more slowly in recent decades, even if we leave aside the 'lost decade' that followed the international debt crisis of 1982 and consider only

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Table 1. Growth performance in Latin America, 1990–2006

	Relative to 1950–1980	Above	Below
Relative to world	Above	Chile (4.3) Dominican Republic (4.1) Argentina (2.6) Peru (2.6)	Costa Rica (2.8) Panama (2.6)
Average 1990–2006 (2.1%)	Below	El Salvador (1.8) Uruguay (1.8) Bolivia (1.4)	Guatemala (1.5) Mexico (1.5) Colombia (1.2) Brazil (1.1) Venezuela (0.9) Nicaragua (0.8) Honduras (0.7) Ecuador (−0.2) Paraguay (−0.5) Haiti (−2.4)

Notes: GDP per capita growth rates (1990–2006) in parentheses. Source: Ocampo and Ros (forthcoming) based on Maddison (2009).

its performance since 1990. But what is most striking is the variety of Latin American experiences (just as that of Sub-Saharan Africa also mentioned by Chang) which appears to support the view that similar institutional and policy reforms can have very different growth outcomes. The whole region has moved in the direction of liberalized policies and institutions while the growth outcomes vary enormously, with per capita GDP growth rates since 1990 ranging from 4.3 and 4.1 in Chile and the Dominican Republic to –0.5 and −2.4 in Paraguay and Haiti (Table 1). Moreover, while most countries are growing more slowly than in the three decades up to 1980, it is also true that seven among them are growing faster than in those three decades (four of which are also growing faster than the world average). Francisco Rodríguez (2010) makes the same point in a simple way with regard to the relationship between freedom of trade and growth performance: the countries in the region that liberalized more their trade experienced very different growth performances, ranging from Paraguay's −0.5% average annual growth rate, well below the region's average, to Trinidad and Tobago's 2.9% annual rate, more than twice the region's average.

When looking across Latin American countries there is no apparent relationship between the degree and timing of market liberalization and growth performance. The countries in the northwest box are Chile, an early reformer, the Dominican Republic, a late reformer, turbulent Argentina, with a heterodox exchange rate policy since 2002, and the relatively more orthodox Peru. Interestingly, all of the fast-growing economies under state-led industrialization (Brazil and Mexico, in particular), most of which have thoroughly liberalized their economies, have now been underperforming in relation to the past with the sole exception of the Dominican Republic.

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Why may similar policy and institutional changes result in so different growth outcomes? To answer this question let us look at the cross-section evidence. Chang's criticism of cross-section studies concentrates on two problems. First, he rightly stresses the biases in the measurement of the quality of institutions, usually based on the opinions of foreign experts with a preference for Anglo-American institutions, and the aggregation of institutional variables into single indexes in a rather arbitrary way. Second, Chang also raises the problem of parameter heterogeneity which makes the parameters in the growth regressions unstable and the results sensitive to the sample.

Chang's criticisms are correct. Yet, there is no mention of perhaps the more fundamental problems raised by the existence of non-linearities and non-separability. As argued by Rodríguez (2010), in cross-country growth regressions the empirical estimates of growth effects of policies and institutions are severely biased if non-linearities are ignored and there is strong evidence that these non-linearities are important in the data. More precisely, the main point of Rodríguez's article is that growth econometrics has not taken seriously the possibility that the effects of policies and institutional variables on growth can be non-linear and therefore that the magnitude and even the sign of the effect of a particular variable can change depending on the level of that variable. He also argues against the hypothesis of separability, i.e. that the effect of a particular variable is independent of the level of the other variables.

Rodríguez (2010) provides two main arguments in support to his claims. First, the theorem of the second best leads us to expect that the reduction of a particular distortion can have very different effects on welfare and growth depending on the initial levels of other distortions. It leads us to believe *a priori* in non-linearity and non-separability. Interestingly, Chang himself in the *theoretical part of the article* makes the same point when arguing that the Lipsey-Lancaster Second Best Theorem shows that 'we cannot judge *a priori* whether a higher degree of market liberalization will bring result in (allocative) efficiency, unless all markets are completely liberalized' (Chang, 2011: 7). Second, Rodríguez shows that a battery of tests with non-parametric and semi-parametric methods overwhelmingly rejects the hypothesis of linearity and a preponderance of them also rejects the hypothesis of separability. In other words, we are presented with results that open to question the significance of the standard results associated with the conventional specification of a growth equation.

All this may explain why similar policy and institutional changes can yield different growth outcomes (the case of Latin America). It may also explain why very different policies and institutions may be consistent with similar growth performances, a point that the World Bank itself has recognized for quite a while now: 'Countries with remarkably different policy and institutional frameworks – Bangladesh, Botswana, Chile, China, Egypt, India, Lao PDR, Mauritius, Sri Lanka, Tunisia and Vietnam – have all sustained growth in GDP per capita

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incomes above the U.S. long-term growth rate of close to 2 percent a year.' (World Bank, 2005: 12).

In summary, I view the time-series and cross-country evidence as complementing each other by pointing in the same direction: similar policies and institutions can produce very different growth outcomes while similar growth performances can be consistent with different policies and institutions. As already mentioned, the reasons for this are in fact in the theoretical section of Chang's article and have to do with the non-linear effects of policies and institutions on growth, a feature of which Chang is fully conscious: 'In addition to being simplistic about the way in which institutions can affect economic development, today's dominant discourse on institutions and development fails to recognize that the relationship is not linear, differs across societies, and changes over time even in the same society' (Chang, 2011: 9). In particular, 'even if an institution in some dose promotes growth, it may actually hamper economic growth in a larger dose' (ibid.). For example, 'while some protection of IPRs [intellectual property rights] may be necessary to motivate firms to invest in knowledge generation . . . too much protection of IPRs may be bad for the society' (ibid.). My comments are thus quite consistent with the theoretical (as opposed to the empirical) discussion presented in Chang's article. They are motivated by the fact that these two discussions are not fully connected with each other in the article.

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