Comment on Dowrick and DeLong, "Globalisation and Convergence"

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I greatly enjoyed the opportunity to read and think about this interesting paper. Its main contribution is to raise a number of important and fascinating questions related to globalization and convergence. This is a valuable contribution, and it provokes the reader to speculate about possible answers. In this, I found the paper to be a great success: it hooked me in and got me thinking.

The main puzzle described in the paper involves changes in the relationship between globalization and convergence over time. It appears to be the case that countries that have taken their place at the global table in the second half of the 20th century have grown faster than those that have not, and countries that have opened their economies have exhibited some convergence. The exact magnitude of this growth gain is uncertain, and the effects may have weakened toward the end of the century (as Dowrick and DeLong argue), but this is a point that is not greatly disputed.[1] On the other hand, as Dowrick and DeLong point out, globalization and convergence did not go hand in hand during the first era of globalization in the years before World War I. Rather, convergence was limited to a narrow "charmed circle" of countries consisting of some Western and Middle European countries and their more temperate colonies.

In many ways, this is surprising. Factors of production, including both capital and labor, as well as technologies for production were shifted around the globe because of this globalization. Yet the effects on incomes outside of the charmed circle are argued to be small. As the authors explain,

[1]Of course, Rodriguez and Rodrik (2000) represents an important exception.

The British Empire brought the rubber plant to Malaysia. British investors financed the movement of indentured workers south from China to Malaysia to work the plantations to produce the rubber to satisfy demand back in the world economy's core. The British Empire brought the tea plant from China to Ceylon. British investors financed the movement of Tamils from India across the strait to work the plantations to produce the tea to satisfy demand from the British actual and would-be middle classes. But these did *not* trigger any rapid growth in real wages. They did not trigger any acceleration in productivity growth or industrialization. They did not trigger any rapid growth in factory employment, or any convergence to the world's economic core. [page 15 of the paper]

Why the difference between the two eras? And in particular, why didn't globalization in the first era trigger rapid growth and convergence? In my discussion, I will comment on each of these eras and make an effort to suggest one possible resolution to the puzzle.

Let me begin with some remarks on globalization and convergence during the second half of the twentieth century. Until recently, I was under the impression that the absolute divergence in output per worker across countries that characterizes most of history had largely been halted, at least since 1970 or so. While it is well-known that there has not been any convergence in output per worker for the world as a whole, my impression was that the divergence had largely stopped.[2]

In fact, as Dowrick and DeLong document in Table 1 of the paper, this absolute divergence largely continued throughout the second half of the twentieth century. This is especially apparent in the per capita GDP data, as shown in Figure 1. The data here are from the Penn World Tables through 1992 and from the World Bank until 1997.

According to this figure, the standard deviation of the log of GDP per capita across 109 countries shows a steady increase. In 1960, this standard deviation was about 0.9 and by 1997 it had risen to more than 1.2. To interpret these numbers, recall that if countries were normally distributed, then four standard deviations would span about 95 percent of the countries. This suggests that the ratio of the second richest country in the sample to the second poorest country would be a factor of $e^{4*0.9} \approx 36$ in 1960 and would rise to $e^{4*1.2} \approx 122$ in 1997. These numbers turn out to be off just a

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[2]In my defense, if one looks at GDP per worker using the Summers-Heston data up until the late 1980s, this is the impression one gets.

FIGURE 1. The Dispersion of GDP per Capita, 1960 – 1997
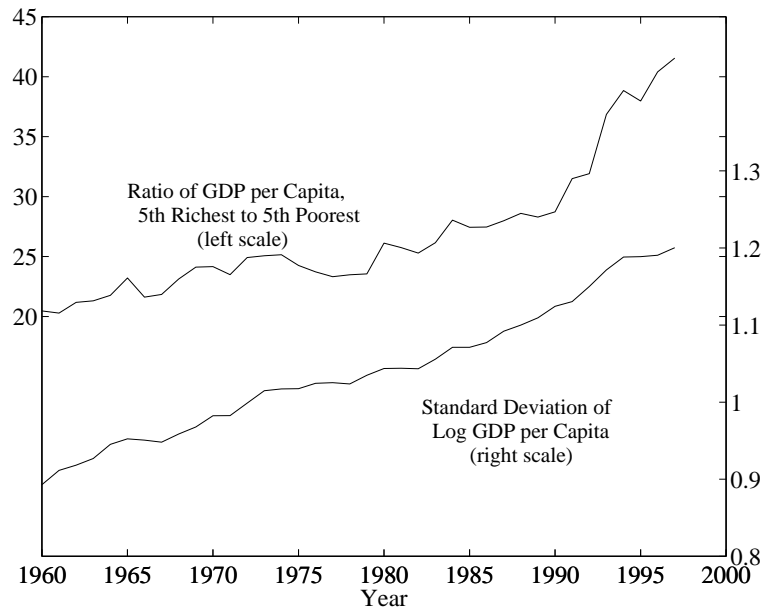
Source: Author's calculation using the extension of the Penn World Tables created by Easterly and Yu (2000). 109 countries are represented.

little: the ratio of GDP per capita in the richest to poorest country was 39 in 1960 and 112 in 1997.

To avoid an undue influence from outliers, Figure 1 also plots the ratio of incomes between the 5th richest and 5th poorest countries over time. This ratio rises from about 20 in 1960 to nearly 30 in 1990 and then rises quite sharply to more than 40 by 1997.

To what extent are these changes influenced by globalization? Figure 2 provides another look at changes in the dispersion of per capita GDP, this time splitting countries into two groups, "Open" and "Closed." The open countries are those that were classified by Sachs and Warner (1995) as being open for at least half of the years during the period 1950–1994.[3]

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[3]The actual openness data used are those from Hall and Jones (1999) and include some imputed values.

FIGURE 2. Dispersion: Open versus Closed Countries
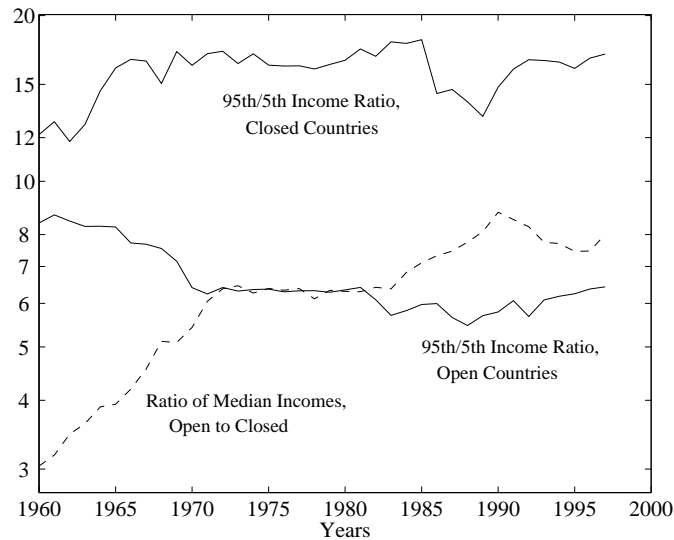
Source: Author's calculation using the extension of the Penn World Tables created by Easterly and Yu (2000). 33 countries are classified as open and 76 are classified as closed.

Among countries classified as open, income dispersion generally decreased over the 1960–1997 period, with the bulk of the decline coming by 1970. Among countries classified as closed, dispersion increased slightly, again with the bulk of the change coming before 1970. However it is the "between" rather than the "within" evidence that is perhaps most informative with respect to globalization and convergence. First, the dispersion among the open countries is substantially less than the dispersion among the closed countries. The open countries are richer and less dispersed than the closed countries. Finally, between these two groups of countries, however, income dispersion increased substantially between 1960 and 1997, with the ratio of median incomes rising from 3 in 1960 to 8 by 1997.

Dowrick and DeLong document a related point, which is that the effects of openness on growth seem to have weakened after 1980 relative to before. One might reach a similar conclusion from this figure, but it is unclear if this conclusion is warranted. As time has gone on, a larger number of countries have opened their economies, but the classification in the figure

is held constant. Some of the weakening of the effects of openness apparent in the figure, then, could be an artifact of this classification.

In this most recent era, then, globalization and convergence appear to be linked. The tentative evidence presented here is not nearly persuasive, but there is a large literature on this question and Dowrick and DeLong themselves bring new evidence to bear.

What, then, about the first era of globalization? An aspect of the quotation at the beginning of my comment that strikes me as quite provocative is the claim that globalization did not have a substantial impact on the countries outside of the charmed circle, in what we might call the "poor periphery." The lack of global convergence during this first era could occur as growth rates increased in the charmed circle but remained unchanged and lower in the poor periphery. Alternatively, globalization could have raised growth rates in all countries that took part, but it could have raised them disproportionately in the charmed circle. In fact, I'd like to suggest that something closer to this second alternative may have been going on.

Consider the following possible scenario. In the charmed circle, industrialization was well-underway, and these economies had already reached their take-off stage by 1870; globalization then increased growth even further. In the poor periphery, globalization began the take-off process and led these countries closer to industrialization. It is possible that globalization itself did promote convergence around the world, but the continued industrialization of the charmed circle kept their growth rates rising. By imagining two S-shaped take-off curves, one can easily see how something like this is possible: divergence results simply because the charmed circle took off sooner and has reached the steep part of its S curve. I will show the empirical version of these S-shaped curves in Figure 4 below.

Some evidence for the rapid growth and convergence within the charmed circle and the lack of rapid growth outside of this circle can be seen in Figure 3. This figure plots per capita GDP growth between 1870 and 1913 against the initial level of per capita GDP in 1870. The upper case letters correspond to the countries in the charmed circle, while the lower case letters represent other countries for which Maddison (1995) reports data. The charmed circle consists of richer countries that generally exhibit faster growth than the other countries of the world. In addition, one can see the suggestive negative relationship between growth rates and initial income levels for these charmed countries, while the countries in the poor periphery lie to the southwest of this growth frontier.

FIGURE 3. Growth Rates in the First Globalization Era
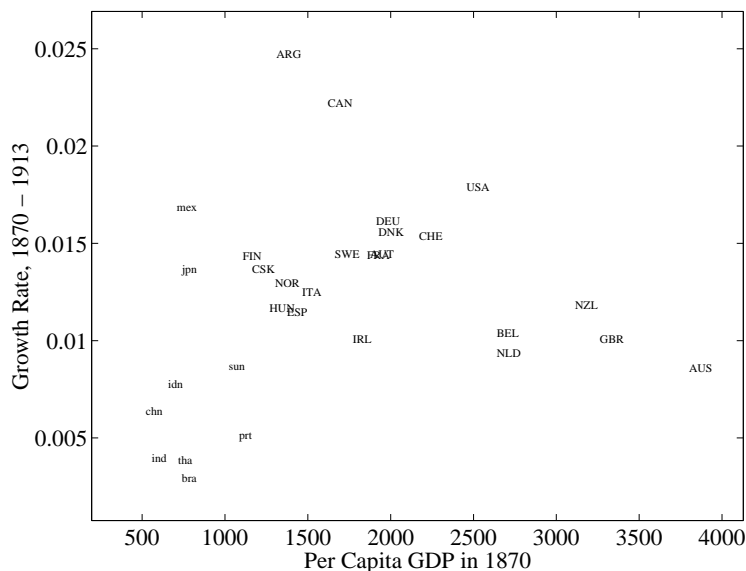
Note: Upper case letters indicate countries in the "charmed circle," while lower
case letters indicate countries in the "poor periphery". Source: Author's calcula-
tion using Maddison (1995).

However, it would not be correct to think that the countries outside of
the charmed circle experienced no growth. Mexico exhibited the fastest
growth of the poor periphery, with growth faster than that in most of the
charmed countries, as it more than doubled its per capita GDP between
1870 and 1913. Even China and India exhibited substantial growth, with
incomes rising by more than 30 percent in the former country and nearly
20 percent in the latter.

Was this growth in the poor periphery a continuation of a previous trend
or did it represent a change, perhaps associated with globalization? Figure 4
sheds light on this question by plotting the level of GDP per capita for a
"typical" charmed country and a "typical" country in the periphery.[4]

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[4]By typical, we mean the following. The level in 1870 is equal to the unweighted average
of the per capita GDPs in the two sets of countries. Values in previous and subsequent years

FIGURE 4. Per Capita GDP: Charmed Circle vs. Poor Periphery
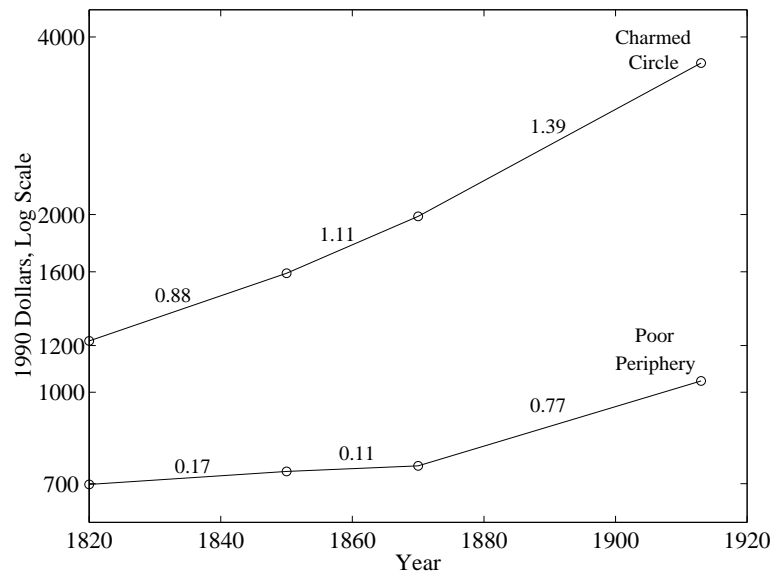
Note: The two series plotted represent the typical experience for countries in the
charmed circle and the poor periphery. See Figure 1 for the countries in these two
groups. The numbers above each line segment represent average annual growth
rates. Source: Author's calculation using Maddison (1995).

   An important fact apparent in this figure is that growth rates in the poor
periphery were substantially higher in the first era of globalization (1870–
1913) than they were over the preceding half century. Taking Maddison's
data at face value, average GDP per capita increased from about 750 dollars
in 1870 to more than 1000 dollars by 1913. While it is true that this era of
globalization witnessed a divergence of incomes between the countries in
the charmed circle and those outside, this does not mean that globalization
brought no benefits to the periphery, nor even that it was not a force working
to promote convergence. A relevant question is the counterfactual: what
would have happened to the poor periphery in the absence of globaliza-
tion? It would be quite surprising if the substantial flows of capital, labor,

are computed using the unweighted average growth rate of the countries for which data is
available in each sample relative to 1870.

and technology across countries did not have a significant impact on the periphery. Figure 4 suggests that the impact may have been large. Perhaps globalization raised growth rates throughout the world, and perhaps the divergence between the charmed circle and the poor periphery would have been even greater in the absence of globalization.

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