Comments on “Catching Up with the Leaders: The Irish Hare”, by Patrick Honohan and Brendan Walsh*

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This paper is wise, informative, and contains two important warnings:

- Beware of numbers—especially in a small economy with a large export-import sector, low taxation of profit, and transfer pricing.

- Beware of mono-causal explanations. No single factor, be it the low taxation of foreign firms, the subsidies from the European Union, the increase in the level of education, or the expansionary effects of fiscal consolidation—to take some of the theories floating in the literature—can account for the Irish boom.

But the paper goes too far in declaring that what is at work is a simple, run of the mill, catch-up story. In this case, proximity may have bred excessive contempt. The authors undersell the performance of their country. After reading their paper and digesting the evidence, I have three main reactions:

- From more distance, but still looking carefully at numbers, the Irish economic performance of the last 15 years looks quite miraculous—

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especially when one looks not only at productivity but also at employment.

- The proximate cause appears easy to identify—namely wage moderation, leading to lower costs, higher profits and large increases in labor and capital.

- The very strong effects of wage moderation suggest, however, unusual mechanisms at work. In an economy such as Ireland, open in trade, capital, and most importantly in labor markets, wage explosions can kill; on the other hand, wage moderation can do miracles. The later is what has happened in Ireland over the last 15 years.

Let me develop each of these themes in turn:

1 Ireland’s performance

The authors are obviously right to point out that the profits generated by foreign firms may reflect little else than creative transfer pricing in response to low profit tax rates in Ireland.

The question is how much this affects the numbers for aggregate output and productivity growth. Here, I believe the impression given by the paper is a bit misleading. The correction is far from negligible, but, even after correction, the output and implied productivity performances remain impressive.

To explore the issue, I went back to the data set for the business sector database maintained by the OECD (a database which, unfortunately, has been discontinued, so the graphs below stop in 1997, missing some of the most impressive years of the Irish boom). I considered three alternative series for output. The first is business sector GDP. The second is business sector GDP, net of all profits repatriated by foreign firms; the implicit assumption is that these profits represent only transfer pricing, not value
added. As this correction may be too strong, I constructed a third series, business sector GDP minus half of the profits repatriated by foreign firms.

Figure 1a plots the logarithms of these three series from 1971 to 1997. Each series is normalized to zero in 1971, so the scale gives the proportional increase in each series since 1971. The differences between the three series (13% in 1997) are clearly visible, but they hardly change the general conclusion: Output growth has been very high, especially since the mid 1980s.

Figure 1b plots the logarithms of the three productivity series implied by each of the three measures of output. Again, the visual impression is clear: The treatment of repatriated profits makes a difference, but in all three cases, the productivity performance remains strong, especially since the mid 1980s—an average 4.2% annually from 1985 to 1997, for example, when unadjusted output is used, a still high 3.4% when output net of repatriated profits is used instead. (The difference between these numbers and the numbers in Figure 14 in the paper must come in large part from the fact that I look only at the business sector here).

Looking at productivity growth misses, however, the other part of the Irish miracle, namely employment growth. Since 1985, overall employment has increased at an average annual rate of 2.7%, obviously a very high number. This has been achieved not only through a large decrease in unemployment, but through an increase in participation, and through immigration back to Ireland.

In short, even after correction, both the Irish productivity and employment performances since the mid 1980s are very impressive. I do not know the rules by which miracles are officially defined, but this seems to come close.
2 The trigger: Wage moderation

When, two years ago, I discussed a paper by Fitoussi et al on unemployment in Europe, I focused on two “miracle” countries, the Netherlands, and Ireland. In the case of Ireland, I argued that wage moderation, i.e. wage growth below the rate consistent with technological progress, appeared to be the proximate source of the reduction in unemployment, both through higher profits and sustained capital accumulation, and through an increase in the ratio of employment to capital.

In the light of the output measurement problems emphasized in this paper, I returned to my computations and looked at the implications of using the three measures of output described above. The results are shown in Figure 2a and Figure 2b.

To achieve a balanced growth path with stable unemployment in an economy where technological progress is labor augmenting (the only form consistent with the existence of a balanced growth path), the real wage should grow at the rate of (Harrod neutral) technological progress. With this motivation, Figure 2a shows the evolution of the adjusted real wage, i.e. the real wage divided by the constructed index of Harrod neutral technological progress. The three lines correspond to the use of the three different measures of technological progress implied by the three different measures of output discussed earlier. Once again, the message of the figure is clear. Beginning in the early 1980s, the adjusted real wage starts declining. Which output series is used to construct the index of technological progress affects the extent of the decline, but not the general evolution: By 1997, the adjusted real wage is between 52% (using the unadjusted output measure) and 30% (using the fully adjusted output measure) below its 1980 level—a large decline in all three cases.

Standard production theory implies that a decrease in the adjusted real wage should have two effects. It should lead to an increase in the ratio of
adjusted employment (employment multiplied by the index of technological progress) to capital, as well as (through higher profits) sustained high investment.

Figure 2b shows the evolution of the ratio of adjusted employment to capital, again for the three series corresponding to the different definitions of output. The figure shows that firms have steadily increased the ratio of adjusted employment to capital since the mid 1980s: The increase ranges from 25% to 30% depending on the series. And, as to the second effect on investment, it is also in evidence in the data: Since 1987, the average annual rate of growth of fixed investment has been a high 8.7%.

Identifying wage moderation as the proximate cause of the Irish boom is however only the start of a full story. It raises two questions. What led to such wage moderation? Why have the effects been so large?

I suspect the answers to both questions come largely from the openness of the Irish economy, with openness in goods markets, openness in capital markets, and openness in labor markets each playing a separate role. In such an economy, shocks—favorable or unfavorable—can have large effects not only on the level but on the growth rate of the economy. Put another way, an open economy may behave very much in the way of the AK models developed by growth theorists a decade or so ago. De facto constant returns may lead shocks to have long lasting effects. In the context of Ireland: Bad policies may not only decrease output, but also kill growth—the story up to the mid 1980s. Wage moderation may not only increase output, but sustain higher growth. Let me develop this theme a bit further.

3 Openness, wage moderation, and growth

Openness in capital markets

Start with openness in capital markets. In a closed economy, a decrease in the wage leads to an increase in the profit rate. How much capital in-
creases in response depends on the slope of the supply of capital. The less elastic the supply, the smaller the effect on capital accumulation, and on output.

In a small open economy like Ireland, the world interest rate is given, and so the response of capital and output to wage moderation is larger. This part, and its empirical relevance for Ireland, is well understood, and is documented in the paper: Much of the growth has been associated with foreign direct investment, attracted to Ireland by the lure of high profits and low taxation.

Openness in capital markets, however, cannot sustain higher growth forever. As capital comes in, pressure on employment drives up the wage. The profit rate eventually returns to normal, and so does the growth rate.

This is where the other dimensions of openness become relevant.

**Openness in labor markets**

One characteristic of Ireland, again clearly shown by the authors, is the importance of migration—emigration for much of history, immigration back to Ireland in the more recent past.

The evidence is clear that Ireland is in effect part of a larger labor market, the U.K. labor market. Whether Irish workers work in Ireland or in the U.K. clearly depends on relative unemployment rates in the two countries (see Figure 8 in the paper) and, theory suggests, relative wages in the two countries (a more controversial point empirically in the case of Ireland, but one which I have to believe is relevant.)

This fact offers a potential key to explaining both wage moderation and its sustained effects on output in the last 15 years. The authors attribute wage moderation to the successful use of collective bargaining. They may be right. But one of the factors behind the responsible behavior of unions must be the constraints imposed by labor mobility. One mechanical explanation for the decrease in adjusted real wages we saw earlier goes as follows:
Arbitrage by workers between staying in the U.K. and coming back to Ireland has forced wages in Ireland to grow roughly at the same rate as in the U.K. But, because the rate of technological progress has been higher in Ireland than in the U.K., this has led to a steady decrease in real wages relative to technological progress in Ireland, and thus to a decrease in the adjusted real wage. This explanation may be too mechanical, but I suspect it captures an important cause of wage moderation in Ireland.

And the same mechanism can explain why wage moderation has led to sustained high growth in Ireland. Think of a country as having access to a fully elastic supply of workers—in the case of Ireland, the pool of Irish working abroad but willing to come back home. Under those conditions, wage moderation will lead to sustained higher growth. Profit will lead to higher capital. Higher capital will lead to immigration, and thus higher employment. The economy will in effect operate under constant returns. As in AK models, the lower the (adjusted) wage, the higher the profit rate, and the higher the rate of growth of output. This seems to capture much of what has happened in Ireland over the last 15 years. At some point, immigration will presumably slow down. Until then, Ireland can sustain higher output, capital and employment growth. (This mechanism was at the center of the explanation for employment and wage dynamics across U.S. states offered by Larry Katz and I in a Brookings paper in 1992).

**Openness in goods markets**

A third mechanism may also have been at work. A few years back, Jaume Ventura wrote a paper pointing out that trade models had a startling implication for growth: Factor price equalization implied that, as a country accumulated capital, it could avoid decreasing returns to capital by shifting steadily to the production and exports of more and more capital intensive goods. So, while the world economy might be well described by a standard growth model, individual countries, especially small ones, might look like
AK economies, able to sustain high growth through a steady shift in the composition of their production towards capital intensive goods.

The paper was seen as conceptually important, but its empirical relevance remained to be established. The Asian tigers appeared to be the most plausible examples of such a mechanism at play. I believe that Ireland may provide another example. This belief is based on work by John Romalis in his Ph.D. thesis at MIT. In his thesis, Romalis looked at the evolution of the capital and the skill content of trade for a number of countries over time. (The argument for skills is the same as for capital: As workers in a country become more educated, the country shifts to more skill intensive goods, and in doing so avoids decreasing returns to skill.) One of the countries he looked at was Ireland. One of his figures, reproduced here as Figure 3, gives the flavor of his results. It shows the Irish share of U.S. imports by skill intensity, for three different dates. Note how, in the 1960s, the share is highest for low skill intensity goods, and how, over time, the distribution has shifted in favor of higher skill intensity goods. This documents that changes in the trade structure have taken place in the direction suggested by the theory. It does not prove but is at least suggestive that trade in goods may have indeed helped Ireland fight decreasing returns to the accumulation of skills and capital.

If so, then, even if the absence of capital and labor mobility, we can think of Ireland as having operated something close to an AK economy, with close to constant returns to capital. And, in such an economy, once again, shocks can have sustained effects not only on the level but also on the growth rate.

I have been looking at the effects of each of these three channels in isolation. In combination, they come close to implying indeterminacy. Only adjustment costs explain where the economy is today, and small shocks can lead to very large changes in output. In combination with exogenous technological progress, these channels can even lead to ever-increasing or
ever-decreasing growth rates... I am far from understanding, either conceptually, or empirically, what role each of them has played in the case of Ireland. But they appear to have the potential to explain why Ireland did so badly from the early 1970s to the mid 1980s, and has done so well since—in other words, to explain the delayed catch-up emphasized by this paper.
References


Figure 1a. Three measures of output (log business output)

GDP, GDP - .5 repatriated profit, GDP - repatriated profit

Figure 1b. Three measures of labor productivity (log business sector)