

ECONOMIC OUTLOOK

by Richard Katz

Orchestrating productivity revival, part 1 Still tuning up

It was the trumpet section of Prime Minister Shinzo Abe's Council on Economic and Fiscal Policy (CEFP) that blared out the goal of raising Japan's productivity growth by 50%: to 2.4% from the 1.6% average prevailing since 1991. But it was to the quieter violas that maestro Abe turned when it came time to let the audience hear how to realize this noble ambition.

Raising productivity is both vital and achievable.

It is vital because of aging. With the working age population falling, growth in GDP per work-hour is fast becoming the only source of overall GDP growth. In fact, since the working age population will drop 0.9% faster per year than the total population between now and 2025, the first 0.9% in labor productivity growth will be absorbed in just preventing per capita GDP from falling. That would leave just 0.7% productivity growth to raise per capita GDP. At that rate, it would take a century to double living standards.

Moreover, without better productivity growth and the better returns to capital that it produces, Japan would not be able to finance social security and healthcare for the growing ranks of elderly without insufferable hikes in the consumption tax and draconian cuts in benefits.

Fortunately, productivity growth of 2.4% is achievable. Japan lags so far behind global benchmarks that it could achieve tremendous leaps just by catching up. For example, while some export-oriented parts of manufacturing, such as autos and electronics are world leaders, overall Japanese manufacturing output per man-hour is 30% below US levels.

Start the revolution without me

Some analysts argue that deregulation and corporate restructuring have already produced a productivity revolution. They note that annual productivity growth has risen to 2% during 2002-07, up from 1.5% during the lost decade of 1991-2001.

Others, however, (including us) reply that productivity growth typically rises above the long-term trend during recoveries, just as it slips below the long-term trend during slumps. As we examine the statistical evidence carefully, we see no clear evidence of any acceleration in productivity growth from the rate prevailing during the lost decade. Let's look at the data.

Work-hours below 1990

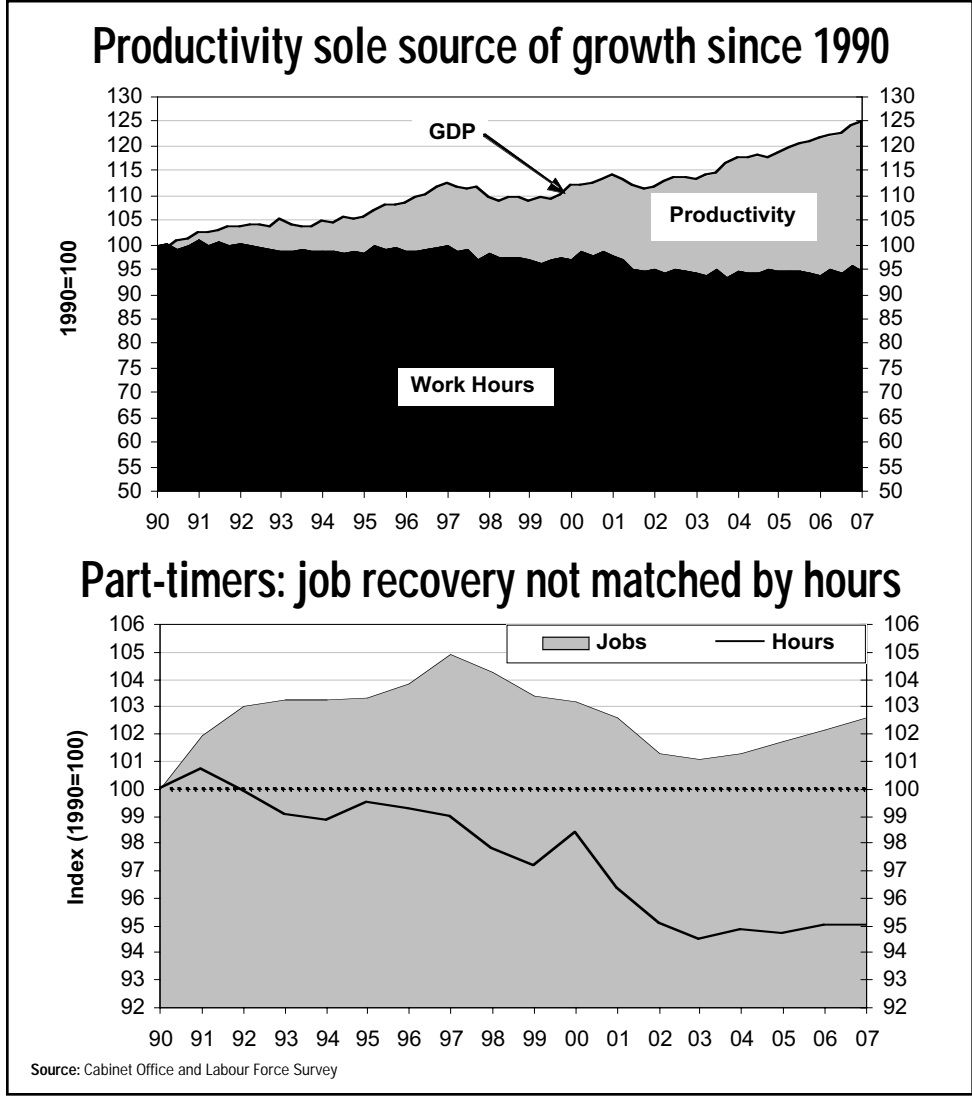
We expected to find that productivity growth would become the sole source of

Japan's GDP growth in the future. GDP growth equals the sum of growth in the number of hours of work plus growth in output per worker-hour (i.e. productivity). What surprised us is that, going all the way back to 1990, productivity growth has been the sole source of GDP growth.

Since 1990, real GDP has grown 25%. Yet, working hours have steadily declined and are now 5% below the level of 1990. The only reason that GDP has grown is that GDP per hour has risen 32% (see top figure).

The reason for this surprising result is that each worker is working fewer hours. Increasingly, firms are hiring lower paid part-timers. Thus, even as jobs rose 5% during 1990-97, hours worked fell 1%. Today, the number of jobs is 2.5% above the 1990 level, but hours worked is 5% below the 1990 level (see bottom figure).

This makes accelerating productivity even more urgent than we had assumed.



Has Productivity Accelerated?

As noted earlier, some people argue that productivity has already accelerated. In reality, productivity growth is a highly cyclical measure. Especially in Japan where wages are lowered but workers are not laid off, output usually falls more than working hours during slumps. In effect, some workers who remain on the payroll have little to do. So, productivity growth appears to plunge. Then, as demand recovers, these staffers suddenly have work and can increase their output without increasing their official working hours. So, productivity growth appears to surge.

Consequently, the ups and downs of annual productivity growth mirror the ups and downs of the business cycle in a way that does not reflect real changes in the long-term trend of productivity growth (see top figure). In fact, during 1991-2007, there was a high 68% correlation between the ups and downs of GDP growth and the ups and downs of productivity growth.

Hence, it is possible that much, perhaps all, of the apparent rebound of productivity growth in the past few years is simply a temporary statistical artifact of the recovery. How can we tell? There are a couple ways

One way is to create a scatter diagram showing the link between GDP growth and growth in productivity, i.e. GDP per hour (see bottom figure). Then we can draw two trend lines: one for the 1991-2001 data and one for the 1991-2007 data. As we move along the line, we see that, when GDP is growing 1.5%, productivity growth tends to average about 1.7%. When GDP is growing 2%, productivity growth tends to average about 2%. At 2.5% GDP growth, productivity growth shows up at around 2.2%.

If trend productivity had risen during 2002-07, then we would have seen an upward shift in the whole line. The 1991-2007 trend line would be markedly higher than the 1991-2001 trend line. As we can see in the figure, this is not the case. In the range of 1.5-2.5% GDP growth, the two lines are quite close.

There is another test we can use. We can show the data points for GDP and productivity growth for the last nine quarters—from the first quarter of 2005 through the first quarter of 2007—as the recovery matured. If trend productivity had accelerated, then most of the data points for 2005-07 would be above the trend lines. In fact, as we can see in grey boxes in the figure, only

two of the nine data points are significantly above the trend lines. Three of the points are very close to the trend lines and four points are significantly below the trend lines.

This suggests to us that, as the economy reaches full-capacity levels of operation (full use of labor and capital) then both productivity growth and overall GDP growth will decelerate toward their longer term trend levels. Since productivity growth has averaged 1.6% since 1991, we figure that sustainable productivity growth is probably closer to 1.5% than to 2.0%.

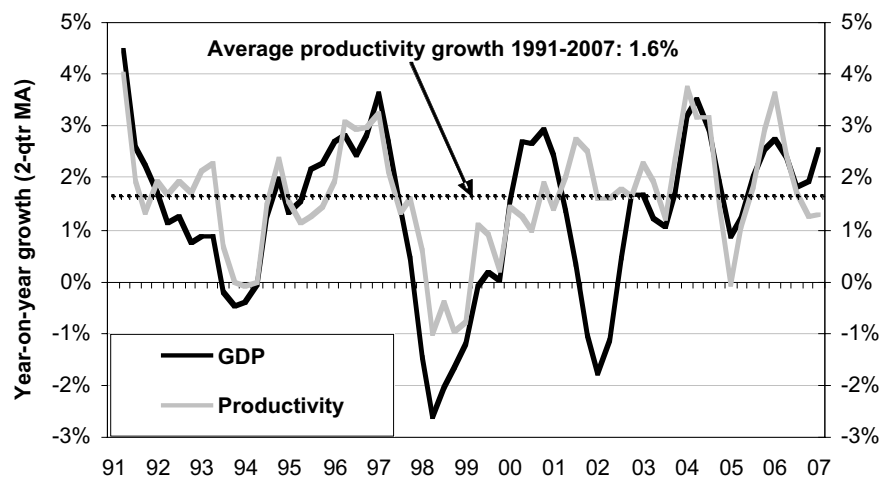
Caveats

We should note that we cannot be fully confident of our conclusions. For one thing, hindsight makes it clear that, in the American case, there was a significant lag

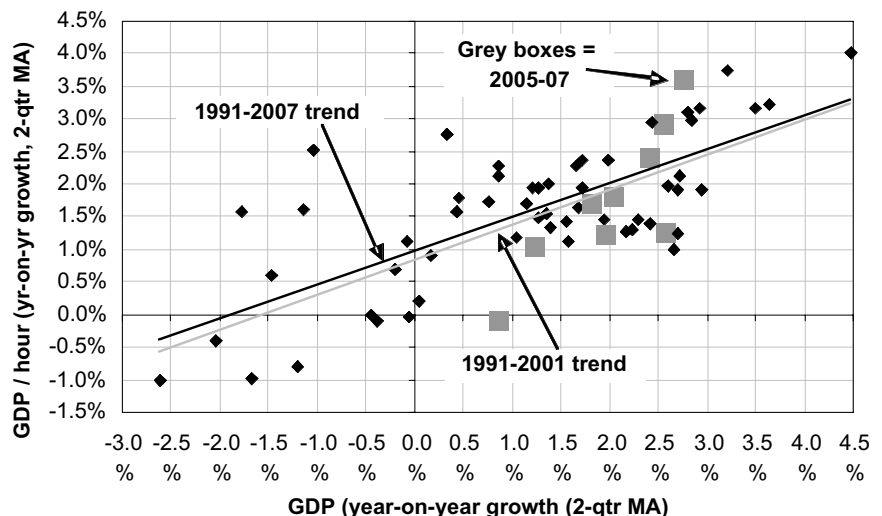
between the onset of the productivity revolution and its manifestation in the statistics. The same thing could be happening in Japan. Secondly, Japan has already undergone a lot of reform and we remain fully confident that, eventually, the reform process will result in a productivity takeoff. The issue is whether—or to what degree—this has happened yet. Thirdly, in every country, measuring medium-term productivity growth is fraught with uncertainty and there is a significant difference of estimates even among experts using the most sophisticated techniques.

Hence, we have to remain open to the possibility that there is more improvement than we see. Nonetheless, our best judgment is that Japan's productivity revolution is yet to come.

Statistical artifact: productivity mirrors GDP



No trend productivity hike in recent years



Source: Cabinet Office and Labour Force Survey

Note: Both charts show year-on-year growth in two-quarter moving averages. In the bottom chart, the black dots are all the data points between 1991 and 2007; the grey boxes show the data points for 2005-07. See text for further explanation.