Structural Changes in Japanese Economy
As Measured by Phillips Curve & Okun's Law

By Naoyuki HARAOKA

The most tragic result of an economic deterioration is an increase in unemployment. What is most worried about in the ongoing global economic crisis is how high the unemployment rate will eventually become. There is an inverse relationship between unemployment and inflation, known as the Phillips curve, while there is an empirically observed relationship between unemployment and economic growth, called Okun's law.

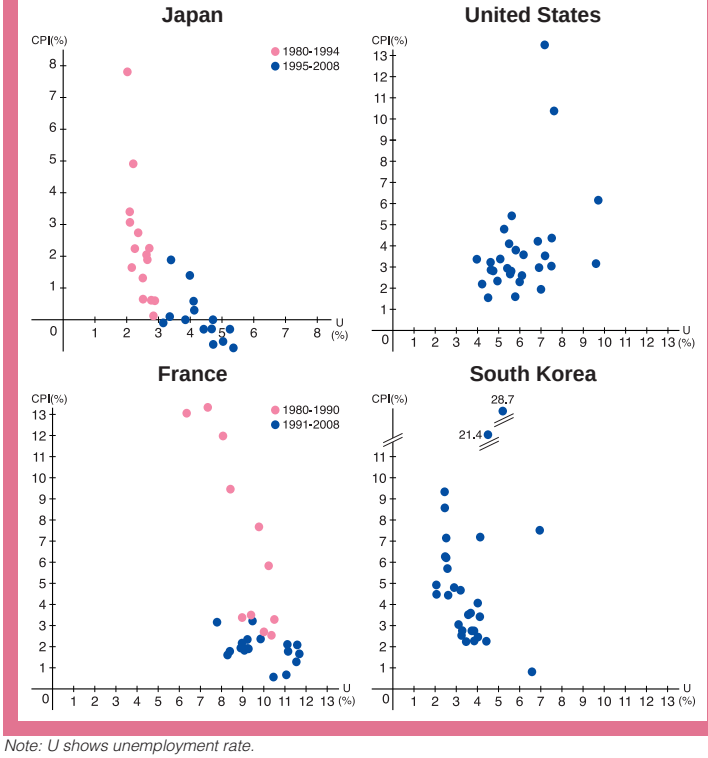
Originally, the Phillips curve refers to the relationship between the rate of increase in wages and the rate of unemployment. Given that the rate of increase in wages is assumed to reflect the rate of growth in the consumer price index (CPI), the rate of wage hikes may be replaced with CPI growth in the Phillips curve. A decline in the unemployment rate means that demand for labor outreaches the supply of labor thanks to an improvement in the economy, thereby boosting both wages and the CPI – an inverse relationship between unemployment and inflation. This is the theoretical idea behind the Phillips curve.

However, the reality is that the Phillips curve differs from country to country as indicated in *Chart 1*. The Phillips curve is drawn for Japan and France in line with the theory. In contrast, no significant correlation can be found in the cases of the United States and South Korea. Rather, it is safe to say that a slight proportionate relationship exists between inflation and unemployment in the latter two countries.

Case Study (1): Japan & France

Take a look at Japan and France. The Phillips curve for Japan turned considerably moderate in the 1995-2008 period compared with that for 1980-1994. In other words, slower inflation did not lead to much increase in the unemployment rate in and before 1994. In contrast, a slight decline in the CPI resulted in a rise in the unemployment rate in 1995 and thereafter. This suggests that Japanese businesses were slow in employment adjustment before 1994 even though the economy fell into a deflationary phase. They apparently avoided dismissing workers in favor of relocating them and launching work-sharing schemes in an effort to cope with deflation. However, in and after 1995, Japanese firms sped up employment adjustment efforts and no longer avoided discharging workers. Japan was in a long economic slump during that period, which is often called the "lost decade." One of the reasons for the shift is that a rise in the number of nonregular workers (to be discussed later) made it easier for Japanese companies to dismiss workers.

CHART 1
Philips curve



Note: U shows unemployment rate.
Source : OECD

That is also the case for France. The Phillips curve for the country turned moderate in the 1991-2008 period compared with that for 1980-1990. But, Japan sets the non-accelerating inflation rate of unemployment (NAIRU) at 3-4%, sharply lower than France's more than 12%. NAIRU refers to the rate of unemployment at the time of a zero inflation rate and is a target figure to achieve economic expansion without inflation. The difference in the NAIRU figure between Japan and France therefore indicates that Japan is in a far advantageous position than France in pursuing inflation-free economic growth.

Case Study (2): United States & South Korea

Let's take a look at the Phillips curve for the United States and South Korea. What is remarkable is that high inflation and unemployment rates coexist in the two countries. This means that their economic structures are under the control of the supply side rather than the demand side. A strengthening on the supply side (stronger international competitiveness) caused by an improvement in labor productivity leads to a decline in the inflation rate, resulting in better economic activity and a decline in the unemployment rate.

This correlation is considered to be more powerful in the two countries than the effects of change in demand have on unemployment. It apparently indicates that the two countries are both keen to improve the international competitiveness of

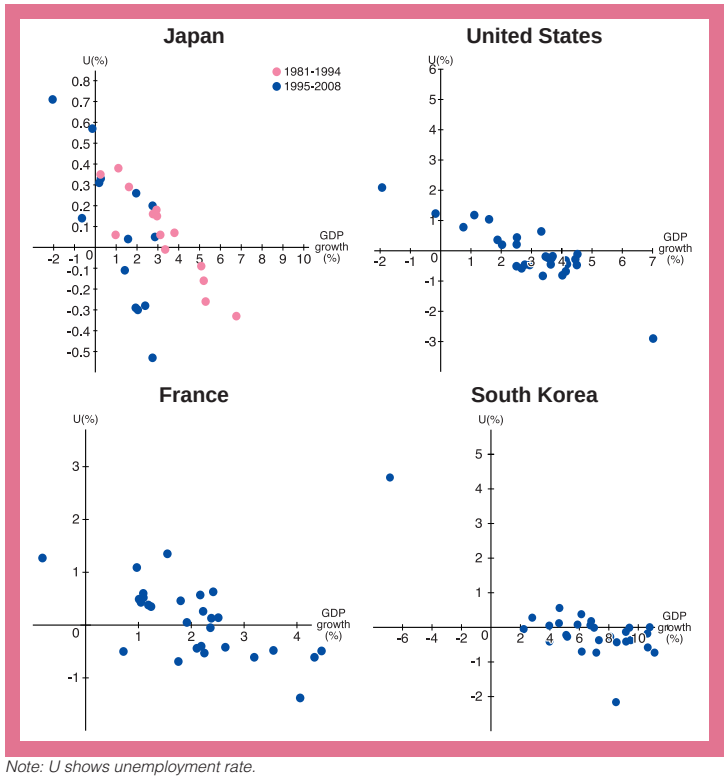
their industries. In fact, the United States is eager to promote information technology (IT) innovation while South Korea is aggressive toward conclusion of free trade agreements (FTAs).

Okun's Law Fits All Countries Sampled

An inverse relationship called Okun's law is observed between real economic growth and changes in unemployment. As *Chart 2* shows, Okun's law is true for all of the four countries sampled – Japan, the United States, France and South Korea. In Japan, the curve based on the law was moderate in the 1981-1994 period while it turned steep in 1995-2008. It was the same as was seen in the changes of the Phillips curve.

Changes in the unemployment rate were more sensitive to economic conditions in 1995 and later. This is clearly shown in the trend of the unemployment rate rising faster than before in times of economic deterioration and slower economic growth. Japanese businesses achieved structural reforms during the lost decade and raised the speed of employment adjustment by dismissing employees, mainly nonregular workers, more easily in swift response to changes in economic conditions.

CHART 2
Okun's law



Note: U shows unemployment rate.
Source : OECD

Japan's Supply Side Still Healthy

Assume a country's growth potential is the rate of economic growth that brings about no percentage change to the unemployment rate (in other words, change in the unemployment rate turns to the minus side if the economy grows faster than the potential rate). In the case of Japan, the potential growth rate fell to around 2% in and after 1995 from around 4% in the 1981-1994 period. In comparison, the rate was about 3% for the United States, 2% for France and 7% for South Korea in 1995-2008. Such a decline in potential economic growth shows structural changes in the Japanese economy. It is important to make efforts to shift Okun's curve toward the right through an improvement in productivity under the lead of technological innovation and eventually raise the country's growth potential.

But what is also important is to take Keynesian policies and create fresh demand if Japan's unemployment rate has come to structurally reflect changes in demand more sensitively under the latest Japanese economic conditions. It must be reconfirmed that Japan's economic structure is in such a situation that unemployment jumps upon a dive in aggregate demand. As mentioned earlier, Japan's NAIRU is low and there is enough room for the country to pursue inflation-free economic expansion. In this sense, the country's supply side is still healthy from an international point of view. A hike in unemployment causes the gap of income to expand among people and to slow the pace of increase in domestic consumption. An active demand stimulus package is necessary to prevent such secondary adverse effects caused by unemployment.

Growing Jobless Youth, High Poverty Rate

The unemployment rate for the so-called young generation of people aged 20-24 averaged 8.9% between 2000 and 2006 in Japan, slightly exceeding the 8.8% in the United States, according to employment data released by the Organization for Economic Cooperation and Development (OECD). A rise in unemployment among young people is a major source of concern. It may reflect a rise in the ratio of nonregular workers in the total workforce.

Unemployment among young people would lead not only to a mere loss of employment opportunities for them but to a loss of various chances for youths to acquire skills and build up experience through work. It would result in a decline in the quality of labor in the future and also in a loss of income. This may lead to a slowdown in technological innovation in the future. Therefore, a rise in the unemployment rate among youth could cause double and triple losses.

The same OECD data also show Japan's poverty rate is relatively high. The poverty rate, as measured by the share of people with income at less than 50% of the median of per-household disposable income in a country's total workforce, was 15.3% in Japan as of 2004. It was the fifth highest among OECD member states following 20.3% in Mexico, 17.1% in the United States, 15.9% in Turkey and 15.4% in Ireland. An increase in unemployment could further deepen such an income gap.

Good Barometers to Track Structural Changes

Structural changes take a long time to be achieved, in their true meaning. The Phillips curve and Okun's law are distinguished barometers to track such structural changes.

Needless to say, unemployment cannot be solved only through market mechanisms. These classic achievements of economics happen to tell the simple fact that conventional economics is not necessarily based only on a full commitment to market fundamentalism. JS

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