Deflation-Indexed Debts and the Reform of the 1940 System

By NOGUCHI, Yukio

IT is widely claimed that the fundamental cause of the long lasting stagnation of the Japanese economy since the 1990s is deflation. Based on this belief, ultra-loose monetary policies have been pursued for considerably long periods since the 1990s. In addition, such policies as the adoption of an "inflation target" have been proposed. Newspapers and magazines, as well as politicians, business persons and economists have unanimously been claiming that coping with deflation is the most important and urgent policy issue.

In this paper, I will argue that these beliefs and policy recommendations are unwarranted. First, to regard deflation as the fundamental cause of the difficulty is based on a misunderstanding of the basic economic proposition that changes in the absolute price are neutral to economic activities. Secondly, the inflation targeting argument is a theoretical mistake of thinking that the real interest rate will passively adapt to changes in the inflation expectation. Thirdly, I propose the creation of "deflation-indexed loans." Based on this line of thought, I will argue that the most important economic issue is to change the basic structure of the Japanese economy and Japanese companies so that they can adapt to the huge changes in the global economic environment in the recent years.

Is Deflation the Fundamental Cause?

Let us first confirm the following two important propositions in economics:

(1) Since deflation is a fall in the absolute price, it will bring no changes in the relative price, at least in principle.

(2) Economic activities are affected only by changes in the relative price. The changes in the absolute price will therefore have no effects on economic activities, at least in principle.

For example, if the price of an apple falls more than the price of an orange, people will shift from oranges to apples. If their prices fall in the same proportion leaving the relative price unchanged, on the other hand, there will be no changes in the people's choice between oranges and apples.

The obvious conclusion derived from the above propositions is that deflation cannot be the cause of the stagnation of the Japanese economy. When people say, "deflation is the problem," they are probably referring to factors other than deflation. For example, they may be confusing depression with deflation. Or, they may be referring to the fall in the price of assets, such as land and stocks. It must be recognized that, even if they are the cause of the present stag-

Figure 1 Trends in Price Indices (1980-2000)

Year	Import Price Index	Wholesale Price Index	Consumer Price Index	Exchange rate
1980	219.2	109.0	76.3	203.60
1985	208.8	109.5	87.4	200.60
1988	117.4	100.6	88.6	125.90
1989	126.2	102.5	90.7	143.40
1990	137.2	104.1	93.5	135.40
1991	125.9	105.1	96.5	125.25
1992	118.2	104.2	98.1	124.65
1993	106.0	102.6	99.4	111.89
1994	100.1	100.8	100.1	99.83
1995	100.0	100.0	100.0	102.91
1996	109.7	98.4	100.1	115.98
1997	117.9	99.0	101.9	129.92
1998	112.1	97.5	102.5	115.20
1999	101.7	96.0	102.2	102.08
2000	106.5	96.1	101.5	114.90

Figure 2 Trends in Price Indices (after 2001)

Month / Year	Import Price Index	Wholesale Price Index	Consumer Price Index	Exchange rate
Jan. 2001	113.1	95.7	99.8	116.38
Feb. 2001	111.1	95.7	99.5	116.44
Mar. 2001	115.2	95.6	99.3	125.27
April 2001	116.4	95.5	99.5	124.06
May 2001	114.9	95.5	99.6	119.06
June 2001	115.1	95.4	99.3	124.27
July 2001	116.5	95.5	99.0	124.79
Aug. 2001	112.7	95.4	99.4	118.92
Sep. 2001	109.9	95.2	99.2	119.29
Oct. 2001	110.4	94.8	99.2	121.84
Nov. 2001	108.5	94.6	98.7	123.98
Dec. 2001	111.0	94.6	98.6	131.47
Jan. 2002	113.7	94.4	98.4	132.94
Feb. 2002	114.1	94.5	97.9	133.89

Note: Import Price Index: total average in yen, Wholesale Price Index: total average, Consumer Price Index: total, Exchange rate: Yen to US$1

Sources: 1) Research and Statistics Department, Bank of Japan, "Price Indexes Annual," "Price Indexes Monthly"
2) Statistical Survey Department, Consumer Statistics Division, Price Statistics Office, Ministry of Public Management, Home Affairs, Posts and Telecommunications, "Annual Report on the Consumer Price Index"
3) Research and Statistics Department, Bank of Japan, "Economic Statistics Annual," "Financial Economic Statistics Monthly"

nation, the mechanism which makes those asset prices fall is entirely different from that of deflation, which is the fall in currently produced goods and services.

The above arguments, however, are admittedly simplistic. If we look in detail, it may be possible to argue as follows.

In the first place, even pure deflation can have significant economic consequences because it increases the real burden of debts. This problem will be discussed below.

In the second place, changes in the absolute price can disturb economic activities. In fact, there are many historical examples of economies which have been destroyed by hyper-inflation. In this regard, however, we must notice that actual deflation in Japan is very mild; the annual rate of decrease in the consumer price index was approximately one percent. It is hard to believe that such mild deflation can have such a significant effect on the economy.

In my observation, the argument that regards deflation as an important cause of the stagnation is made to justify the easy monetary policy, which assists heavily indebted firms. I believe that the true causes of the difficulty are real factors. I will discuss this issue in the latter part of this paper.

A Theoretical Mistake of the Inflation Target Policy

According to a considerable number of economists, the government and the Bank of Japan (BOJ) should try to raise peoples' expectations about inflation by publicly declaring a target inflation rate. They argue that by doing so the present problems of the Japanese economy will be solved.

There are of course objections to this proposal. But the objections are concerned with its practical operations and controls. For instance, it is pointed out that it would be difficult to influence such expectations, especially in a situation where people do not have strong respect for the government. Also, once these expectations are raised, it would be difficult to prevent them from rising further. These problems do exist and they could indeed be serious. I believe, however, that the fundamental problem of the inflation targeting policy is a theoretical one.

Let us begin with the celebrated Fisher equation, which states that if a financial market works perfectly, the nominal interest rate is equal to the real interest rate plus the inflation expectation. Thus, letting i, r and π^* stand for the nominal interest rate, the real interest rate and the inflation expectation, respectively, we have:

$i = r + \pi^*$.

The advocates of the inflation target policy argue that since inflation expectation (π^*) has declined (i.e., has increased its negative value), the real interest rate (r) has risen, producing a negative effect on investment spending. And conversely if π^* can be raised by some measure, then r will decline, giving stimulus to investment spending.

This argument, however, is based on a serious misunderstanding of the equation in that it assumes the real interest rate will adjust passively to changes in the inflation/deflation expectation. It must be understood that the real interest rate is determined by real economic factors and that the nominal interest rate adjusts passively to changes in the inflation/deflation expectation.

Therefore, even if inflation expectation can be raised by some measures, the result would be nothing but an increase in the nominal interest rate with no changes in the real interest rate. This is a direct corollary of the fundamental economic proposition that economic activity is influenced only by real factors of the economy and hence nominal variables are nothing but veils.

If the Fisher equation works perfectly then the problem that deflation increases the real burden of debtors would not exist, since the market takes care of the problem by making the nominal rate of interest fall. This is what actually happened in Japan in the 1990s; the nominal interest rate has fallen to a level which no country has ever experienced.

It is true that the actual workings of the financial market are far from perfect, so that the adjustment of the nominal interest rate may fall short of what the equation predicts. In particular, since it is difficult, if not impossible, to make a nominal interest rate take negative values, the adjustment is imperfect. Also, since contracts are not necessarily

Figure 3 Trends in the Money Supply

Average/YOY change (%)

Month / Year	M_2 + CD	Monetary base
Mar. 2000	1.9	10.9
April 2000	2.9	11.7
May 2000	2.2	7.5
June 2000	1.9	6.4
July 2000	2.0	5.8
Aug. 2000	1.8	4.6
Sep. 2000	2.0	4.0
Oct. 2000	2.1	5.3
Nov. 2000	1.9	5.7
Dec. 2000	2.0	-1.1
Jan. 2001	2.2	-5.6
Feb. 2001	2.6	3.4
Mar. 2001	2.5	1.2
April 2001	2.4	1.4
May 2001	2.7	5.1
June 2001	2.9	7.6
July 2001	3.0	8.0
Aug. 2001	3.0	9.0
Sep. 2001	3.3	14.2
Oct. 2001	3.0	14.3
Nov. 2001	3.2	15.5
Dec. 2001	3.4	16.9
Jan. 2002	3.5	23.4
Feb. 2002	3.6	27.5
Mar. 2002	3.7	32.6
April 2002	3.6	36.3

Source: Bank of Japan

rearranged every time when the inflation/deflation expectation changes, an unexpected increase in the deflation expectation will bring about an increase in the debtors' burden. However, these problems would not justify an inflation target policy, since they can be dealt with by the following measures.

Introduction of Deflation-Indexed Debts

One of the most remarkable innovations in the financial markets of the United States and European countries in the 1990s was the introduction of the inflation-indexed bond. This is a financial asset whose nominal rate of return rises as the actual inflation rate increases. The real value of this asset is therefore kept unchanged regardless of the actual inflation rate.

In a deflationary environment, a similar financial tool may be introduced in order to keep the real value of assets/debts constant. The only necessary adjustment from the inflation-indexed bond is to change the sign.

In an inflationary environment, there is a need to prevent the real value of nominal assets from falling. The government therefore issues inflation-indexed nominal debts. In a deflationary environment, on the other hand, there is a need to prevent the real value of nominal debts from increasing. Thus the government should provide deflation-indexed loans.

Allowing firms and individuals to replace their present debts with deflation-indexed debts and providing necessary adjustments in the nominal rate of return as the actual deflation rate changes, it is possible to solve all the problems arising from an unexpected increase in the deflation rate.

The government and the BOJ should rely on this measure and "live together with deflation" instead of fighting it, and should terminate the excessively loose monetary policy, which would have no consequences other than to relieve excessively indebted firms. They should also terminate such excessive involvements as the operation of the Industrial Revitalization Corp. of Japan in order to relieve debt-ridden companies. What they should concentrate on is the structural reform of the economic system. I will analyze this issue in the following paragraphs.

Figure 4 Companies that adapted and companies that could not adapt to change

	Company name	Number of employees	Sales (US$million)	Market capitalization (US$million)
Group 1: Traditional major companies				
1a	General Motors	365,000	177,260	34,471
1a	Ford Motor	345,991	180,598	27,713
1a	Hitachi	337,911	76,126	23,365
1a	Matsushita Electric Industrial Co.	292,790	69,475	26,007
1b	NEC	149,931	48,928	12,789
1b	Fujitsu	187,399	49,604	14,829
Group 2: Changing major companies				
2a	General Electric	310,000	125,913	333,340
2a	Toyota Motor	215,648	121,416	101,190
2a	IBM	319,876	85,866	146,970
2b	Canon	86,673	25,806	32,118
2b	Sony	181,800	66,158	46,080
Group 3: New type of companies				
	Intel	83,400	26,539	190,298
	Microsoft	47,600	25,296	302,917
	Cisco Systems	38,000	22,293	112,019

Sources: Number of employees, sales and profit from FORTUNE.COM, GLOBAL 500 (2001, 2002), market capitalization from CNNMoney (May 2002)

The True Cause is an Inability to Change

What should be done to revitalize the Japanese economy? To discuss this issue, it is essential to find the true cause of the difficulty.

I believe that the fundamental cause of the slump of the Japanese economy is the inability of Japanese firms to adapt to the huge changes in the world economy which took place during the 1990s. The most important change is the emergence of a new type of globalization, which has been brought about by the end of the Cold War and the development of the new information and communication technologies.

The rapid growth of the export-oriented manufacturing industries in Asian countries is having a profound impact on the Japanese economy. Asian industries are catching up, and in some aspects surpassing their Japanese counterparts. In fact, the productivity of the iron and steel industry and the ship building industry in South Korea is now higher than the levels in Japan. Similar changes will occur in such key industries as automobiles and electrical machinery in the near future. The improvements in the quality of goods produced in China have brought about competition with Japanese manufacturing industry. Faced with these changes, the need to alter the Japanese industrial structure has become urgent. In reality, however, Japanese industry is still dominated by traditional big companies and the impact of new start-ups is almost nil.

This can be verified by looking at the list of the market values of companies. In the United States, such new companies as Microsoft Corp., Intel Corp. and Cisco Systems Inc. occupy the top position on the recent list. (Fig. 4) These companies were only negligibly small or did not even exist until the early 1980s. Those relatively young companies, which are energetic and innovative, have led the recent U.S. economy.

In Japan, on the other hand, no new companies comparable to Microsoft or Intel have emerged. The top position on the list is still occupied by traditional companies in the telecom and automobile sectors.

Why are so few start-ups emerging in Japan? The first reason can be found in the labor market structure and the corporate structure. The Japanese employment system can be characterized by the lifetime employment practice and the seniority-based wage system. Although changes have been taking place in recent years, especially in small and medium-sized companies, the traditional practices are still dominant in large corporations.

Under this employment system, it is very risky for a person to leave a corporation, especially if it is a large one, and to start a new business, because if the new business fails, he or she can find no places to return. Thus, most workers are reluctant to leave a company even when they have a chance to start a new business. The lack of mobility in the labor market is the basic reason why talented workers do not undertake new businesses and why healthy venture businesses do not flourish in Japan.

The second reason can be found in the Japanese financial structure, which is dominantly the indirect financial system. This is a system in which banks play the major role, and fund raising from the capital market plays only a marginal role. The problem with this structure is the difficulty in supplying the risk money for venture businesses.

The Reform of the 1940 System

In order to revitalize the Japanese economy, it is essential to reconstruct the economic system, in particular to dismantle the old economic regime. It is widely believed that such factors as lifetime employment, seniority-based wages, the lack of mobility in the labor market and the indirect financial system are reflections of the basic characteristics of the Japanese economy, and cannot be changed. I believe, however, that these factors are not necessarily "intrinsically Japanese" in the sense that they have their roots in Japanese history. Rather, they were artificially introduced by the government for the purpose of fighting World War II. Because the major reforms were undertaken during the period around the year 1940, I call this regime the "1940 System."

Before the reforms, the market mechanism was an essential element of the Japanese economy. This can be best seen in the financial sector. Until the 1930s, most Japanese corporations raised funds directly from the capital market by issuing stocks or bonds; namely, the Japanese financial system was the "direct financial system." Because of this financial structure, large stockholders had a strong influence on corporate decisions.

In order to control the flow of funds and to concentrate economic resources for the war, the government strengthened the banking sector and discouraged fund raising from the stock market. Lifetime employment and the seniority-based wage system were introduced for the purpose of raising labor productivity.

This system continued to function in the post war period, and was a basic framework for the rapid economic growth during the 1960s. The indirect financing system was the basic financial structure, which supported the growth of heavy industry. The system also worked very well in fighting the oil crisis during the 1970s.

It is true that some changes are taking place due to changes in the economic environment. Lifetime employment and the seniority-based wage system are disappearing. Mobility in the labor market is increasing. The financial system is also changing. But all these changes are more or less marginal.

This is why the overall reform of the economic system is called for. We must bear in mind that the 1940 system is by no means a reflection of the long historical developments of Japanese society. Nor is it related to cultural elements. This means that reform of the system is in principle possible, and this will be the basic condition for revitalizing the Japanese economy. JS

References

• NOGUCHI, Yukio, "Leaving the '1940' System and Moving into a New System," *Journal of Japanese Studies*, vol.24, no.3, May-June 1996

• NOGUCHI, Y "The 1940 System: Japan under the Wartime Economy," *The American Economic Review*, May 1998, pp.404-7

• NOGUCHI, Y "Falling Prices Are Part of the Reform Process," *Japan Echo*, Vol.28, No.4, Aug.2001

• NOGUCHI, Y "Is the IT Revolution Possible in Japan?" in Claude Barfield, Guenter Heiduk and Paul Welfens (eds.), *Internet, Economic Growth and Globalization*, Springer, 2003

NOGUCHI, Yukio is a professor at the Graduate School of International Management, Aoyama Gakuin University. He specializes in public economics and the Japanese economy.