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堀内, 行蔵 / HORIUCHI, Kozo

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# A Vision for Corporate Behavior under Zero Economic Growth and Global Environmental Constraints: Shimomura's Theory of the Japanese Economy

Kozo Horiuchi

## Abstract

Dr. Osamu Shimomura, an architect of The National Income Doubling Plan in 1960, developed two visions of the Japanese economy: rapid growth in the 1960s and "zero growth" after the oil crisis in 1973. Based on Shimomura's theory of economic growth and environmental management of Japanese firms, we will understand that his vision of "zero growth" had profound implications for stability and sustainability of the macro economy and the corporation in the 21<sup>st</sup> century.

This short paper is an attempt to explain descriptively how the existing vision of the economy was formed on macro and micro levels in Japan, and to give an outline of a new vision for the 21<sup>st</sup> century. We look at two historical developments after World War II: economic growth in Japan since 1960, and changes in environmental management of Japanese firms. We will draw a conclusion that vision is essential for stability and sustainability of the market economy.<sup>1)</sup>

The postwar history of the Japanese economy may be divided into three periods. The first 10 years are called the 'reconstruction' (rehabilitation) period during which the Japanese economy recovered from the ruin of war. During this period the priority of government policy was the control of severe inflation and an increase in production. The following 15 years, and especially the 1960s, are known as the rapid (high) growth period. In the rapid growth period the Japanese economy grew at approximately 10% per annum and it was on a balanced growth path. In 1960 the vision of rapid growth was presented by Dr. Osamu Shimomura (1910–1989). The government implemented active growth-oriented

policies and the economy began to move toward a high growth rate. As these economic policies had the effect of achieving rapid growth, a new economic vision prevailed among the Japanese people.

Around 1970 the Japanese economy caught up with those of more advanced countries in Europe and entered a new phase of economic slowdown. This process was called "transformation from rapid growth to decelerating growth", but the oil crisis in 1973 disrupted the transitional process.

After the oil crisis, the Japanese economy entered a low growth or "zero growth" period. Natural resources are not limitless. One of the key factors (an abundant supply of oil) which supported growth of the world economy was severely damaged. In Japan we lost a clear vision of the economy. The economy's progress was derailed and has been in serious disequilibrium.

On a micro level, a vision of rapid growth of individual firms was formed in the 1960s. A growth-oriented business culture became common. The so-called Japanese business practices were strengthened, which are examples of competitive strategies centering on management of stakeholders such as employees and suppliers.

In order to develop the vision of the corporation, it is useful to examine the relationship between management of firms and the natural environment. Environmental management by firms is changing. It was 'reactive' in the 1960s, changed to 'precautionary' in the 1980s, and has been 'proactive' since the 1990s. Corporate social responsibility (CSR) was first discussed in the 1970s, and this issue has been attracting attention again in recent years.

After the oil crisis Japanese firms lost vision. There are many firms which still hold on to the business culture that prevailed in the growth period of the 1960s. It is difficult to change business culture in the short-term. On the other hand, leading corporations are aware of global environmental problems, and have started to direct management strategy toward sustainability of society. CSR and stakeholder management are becoming more important, and a new vision of the corporation is emerging.

The Japanese economy as a whole is still not on the right track. The fundamental issue is a lack of a holistic vision of the economy and the corporation. To explain this, I will start by summarizing works of Shimomura to study how the old vision of rapid growth was formed and why it prevailed.

## [ I ] Vision of the Japanese Economy

### 1. 1 Shimomura's work and his vision for the Japanese economy

Shimomura worked for the Ministry of Finance and was an economic advisor to Prime Minister Ikeda. He became the first director of the Research Institute for Capital Formation of the Japan Development Bank. He subsequently continued to be active in writing and lecturing as an independent economist.

Shimomura is well-known as an architect of The National Income Doubling Plan of the

Ikeda administration in 1960. He publicized an original theory for rapid growth of the Japanese economy, and expressed his vision that the Japanese economy was on the rise historically. In any country high economic growth is an epoch-making and historic event for the nation. He was a leading economist behind the rapid growth policies that were implemented in the 1960s.<sup>2)</sup>

However, he changed his view dramatically during the oil crisis in 1973. At that time he predicted "zero economic growth". This forecast was a shock to the Japanese. Most economists were critical of this prediction, *because they thought it was too pessimistic*. We will see that "zero growth" was a correct expectation and offers a new vision for the 21<sup>st</sup> century.

#### 1.1.1 Three basic factors for the foundation of the vision of rapid growth

Shimomura recognized that world economy post-World War II was emancipated from the bonds of prewar economic systems. He expected that the IMF, GATT and an abundant supply of low-cost petroleum would let the world economy grow. These three factors were the prerequisite conditions for the steady and healthy growth of the Japanese economy.

In practice, institutions (human-made systems) and natural resources (natural systems) are two essential and basic factors for a market economy to work properly. This is especially true when we consider what is necessary for a sustainable world economy in the 21<sup>st</sup> century.

Economists usually point out several economic and social conditions which, they think, are characteristics of Japan that explain its rapid growth in the 1960s. These are, for example, diligence, a cooperative spirit, preference for savings, levels of education, the quality of bureaucrats, and so on. In fact, Shimomura didn't make much of these specific conditions. To him, changes in postwar world economic systems and

energy conditions were essential. He used to say, "The Japanese worked harder before World War II, but they couldn't achieve rapid growth."

Shimomura had confidence in the stability of a capitalist economy due to his original theory of business cycles published in 1951. In that paper (Shimomura 1951), he developed a dynamic theory of Keynesian economics following R. Harrod and P.A. Samuelson. He incorporated changes in investment which respond to changes in profit. His model showed that the Japanese economy had a stable investment cycle. Another characteristic of his paper was that he made a clear distinction between business cycles and economic growth. He wrote that economic growth was realized through autonomous and high-powered investments carried out by risk-taking and independent entrepreneurs.<sup>3)</sup>

In addition to investments, he separated prices into two categories: wholesale prices (prices of manufactured goods) and consumer prices, and gave a definition of inflation in a rapidly growing economy. This definition is very useful, because inflation in a rapidly growing economy is quite different from what was experienced in the business cycles of the slowly-growing prewar economy.

#### 1.1.2 Growth theory and long-term forecast

Shimomura focused on creativity and ingenuity of entrepreneurs that had begun to bring forth a rapid increase in autonomous investments by private firms. He studied statistics on corporate firms and found evidence of a surge in such autonomous investments in the latter half of the 1950s. He recognized that rapid increases in investment represented an entrepreneurial spirit, and that it was not a temporary phenomenon, but a historical trend. Positive economic policies were necessary to support this dynamic movement. Shimomura stated clearly that growth policies would lead to psychological uplift of the 94 million people in Japan. His model was a

growth version of Schumpeter's innovation theory.<sup>4)</sup>

Shimomura's growth theory was formulated in two stages. He first estimated that the output-capital ratio was equal to one in the first half of the 1950s, and then focused on the rapid increase in investment in the latter half of that decade.

Following the publication of his paper in 1951, Shimomura gradually developed his own theory of rapid growth, and expressed the view that the Japanese economy was on the historical rise. In 1955 he published another paper in which he examined empirically the conditions for internal and external equilibrium of the Japanese economy by formulating an open-economy macro I-S model. In that paper (Shimomura 1955), he suggested a possibility that the Japanese economy would face an excess of aggregate supply relative to aggregate demand.<sup>5)</sup>

In 1958 he wrote that the Japanese economy was at an important turning point from an economy characterized by an excess of demand to that of an excess of supply. During the reconstruction period after World War II, the Japanese economy suffered from inflation due to excess demand over supply. He recognized that this situation was coming to an end. Furthermore, he expressed clearly the need for positive fiscal and monetary policy to stimulate economic growth. In his 1958 paper he suggested that 10% growth would be possible. This paper (Shimomura 1958) offered a theoretical foundation for The National Income Doubling Plan launched in 1960.

In 1959 Shimomura published a paper in which he expressed clearly that the Japanese economy would be capable of attaining a 10% per annum rate of growth and the economy was on the historical rise. He wrote that the expected rate of growth of 6.5% per annum in the New Long-Term Economic Plan of the government (1958-62) would be too low. At that time, professors and economists were critical that 6.5% would be

too high. Therefore, the 10% growth theory of Shimomura (1959) surprised them and created something of a sensation as a new theory and the 1959 paper triggered the famous 'growth controversy'.<sup>6)</sup>

The most important parameter of his theory was an aggregate output-capital ratio, which he estimated at 1. This means that the increase in aggregate supply in terms of GNP this year will equal the net investment in capital of previous year. In his theory, the capital stock consisted of investments of private firms and did not include public investment. These two conditions together with his assumptions about other parameters caused intense debate. This debate took place in 1959, and was called the 'growth controversy'.<sup>7)</sup>

Leading professors and economists in the government and banks participated in the controversy. They discussed the definition of economic variables, and published their own estimates of the parameters. Some expressed pessimistic views about the Japanese economy as a capitalist country. The discussion was focused on technical details such as the output-capital and import ratios, and didn't touch on Shimomura's vision that the Japanese economy was on the historical rise.

This controversy was the most serious and intense economic debate in the postwar period. At that time the Japanese economy had finished the reconstruction phase after the war, and stood at a crossroads between a high growth path and a low growth path. Unlike the prevailing view at the time, Shimomura expressed a clear opinion that the Japanese economy would accelerate its growth in the 1960s.

Shimomura took account of the issues raised in the 'growth controversy'. In 1960 he made public his own long-term economic forecast to 1970. He showed that 10.6% growth per annum would be possible under the conditions of price stability, a balanced government budget, and a balanced current account of international trade

(Shimomura 1961).

In 1960 there were only a few people who supported this long-term forecast. However, it turned out that his forecast was very close to actual rate growth of the economy and helped Japanese people to regain their confidence that high rates of growth were possible.

Shimomura proposed macroeconomic policies which were some of the most proactive policies in the world at the time. He clearly stated that large tax cuts and massive increases in government expenditure were necessary to fill the shortage of aggregate demand relative to rapidly increasing aggregate supply. According to his view, the output-capital ratio was equal to one and private investments would continue to increase very rapidly. These factors generated a rapid increase in aggregate supply. He insisted that the government's role was to assist the private sector in realizing its potential ability by using positive fiscal and monetary policy. He often said that the government was only a supporting actor and diligent people played the major role.<sup>8)</sup>

## 1.2 Performance of the 1960s (1960-'70, 11years)

During this period the Japanese economy attained rapid growth. The important question is whether the realized growth was stable. Economists at the time emphasised two equilibrium conditions to achieve stable growth: internal equilibrium and external equilibrium. These conditions were discussed continuously in policy debates during the 1960s.

### 1.2.1 Rate of growth of the Japanese economy

Economic growth in terms of real GDP was 10.4% per annum, which was almost equal to what Shimomura expected in 1960. The main engine for this rapid growth was private investment by firms which rose 18.4% per annum in

Table 1 Long Term Trends of the Japanese Economy (%)

	1955-59	'60-70	'71-82	'83-85	'86-90	'91-95
(growth rate)						
GDP (real-term)	8.0	10.4	4.2	3.5	4.6	1.4
Private						
Consumption.	7.9	9.2	4.4	3.1	4.4	1.9
Housing Investment	10.1	17.6	2.0	-1.9	9.3	-2.3
Firm's Investment	16.6	18.4	2.6	8.4	10.0	-2.4
Public						
Consumption	3.0	4.8	4.6	1.7	2.5	2.4
Investment	8.1	14.2	4.6	-4.1	3.7	7.5
External						
Exports	12.2	15.6	8.9	8.2	3.0	4.3
Imports	10.7	15.2	4.3	1.8	11.6	3.6
Price Increase						
Wholesale Price	-0.1	1.3	6.5	-1.2	-2.0	-1.6
Consumer Price	0.6	5.6	8.1	2.0	1.4	1.4
Balance of Payment/GDP						
Trade Account	0.0	1.0	1.6	3.4	3.3	3.1
Current Account	0.1	0.1	0.6	2.7	2.8	2.6

Data: Economic Planning Agency, Bank of Japan

real terms (see Table 1).

### 1.2.2 Internal equilibrium

Internal equilibrium means two things: stable prices and a balanced government budget. There are two kinds of prices, wholesale prices (prices of manufactured goods) and consumer prices. This distinction is important to understand inflation in a rapidly-growing economy.

#### (Stable wholesale prices)

In a rapidly growing economy in which labor productivity in the manufacturing sector is increasing very rapidly, price stability means stable prices of manufactured goods (wholesale prices). In Japan manufactured goods are the main tradable commodities. Stability of wholesale prices lead to a stable exchange rate in IMF system during the 1960s. As long as wholesale prices remain stable, the economy does not experience high inflation. Stable wholesale prices are the basis for constant purchasing power parity.

Wholesale prices remained stable and increased only 1.3% per annum during the period of 10% growth. This was realized mainly by the fact that in manufacturing industries the average annual rate of increase in labor productivity (11.4%) was almost equal to that of wages (11.9%).

Shimomura made a clear definition of price stability in this way. However, this point was not fully recognized among policymakers, which caused the 'price controversy'. The government became too cautious about a rise in consumer prices. This resulted in a serious mistake of economic policy and the Japanese economy fell into recession in 1965.

#### (Increase in consumer prices)

Consumer prices in Japan increased by 5.6% per annum from 1960 to 1970. Many economists thought that this rate was very high. An economist at the Bank of Japan insisted that the Japanese economy was inflationary and ex-

pressed an opinion that the government should use restrictive policy.

Shimomura dismissed this argument as being obsessed with a theory from the prewar days. In the prewar period, the economy grew very slowly and business cycles were dominant. Prices went up in the booms and went down in the recessions. Shimomura thought that in a growing economy wholesale prices would remain stable and consumer prices would increase at a constant rate, thus an increase in consumer prices in a growing economy is normal and healthy. According to him, inflation meant a hike in wholesale prices.

Consumer prices consist of two prices, the prices of manufactured goods (which relate to wholesale prices) and the charges/rates of service industries. The productivity of service industries tends to increase very slowly as compared with that of manufacturing industries. However, there was a rapid rise of wages overall when the Japanese economy reached the stage of full employment. These facts resulted in an increase in charges of service industries, and consumer prices started to go up at a faster pace in the 1960s. An increase in consumer prices reflects a natural consequence of economic growth, i.e., an increase in the value of labor relative to the value of commodities (human value).<sup>9)</sup>

#### (Principle of balanced government budget)

The government cut taxes in the 1960s, but tax revenue was increasing very rapidly. Tax revenue was enough to meet current expenditure including interest payments on government bonds. If the government had not cut taxes, the fiscal balance would have recorded a large surplus.

Tax cuts will stimulate the economy and this was the case in Japan. However, tax cuts do not usually lead to a balanced budget, unless the response of the private sector is strong. In a rapidly growing economy, there is a relatively

large response to a tax cut. This was true for the Japanese economy in the 1960s. Otherwise this policy would have resulted in a large government budget deficit as was experienced in the Reagan administration in the United States.

Expenditure for public investment was financed by issuing government bonds. This was called the 'principle of construction bonds'. This principle prohibited the government from issuing bonds to finance current expenditure. Issue of government bonds from the mid-60s did not cause crowding-out in the capital market.

#### 1.2.3 External equilibrium

External equilibrium means that the international balance of payments should be in equilibrium in the long-term. The ratio of current account surplus to nominal GDP in Japan was 0.1% on average during 1960-70. External equilibrium was achieved.

During this period the rate of increase in exports (in real terms) was 15.6% per annum and the rate of increase in imports (in real terms) was 15.2% per annum. Exports and imports rose at nearly the same pace, and there was no surplus or deficit in the international balance of payments.

Therefore, the rapid growth in Japan in the 1960s can be said to be domestic demand-induced growth and was not export-oriented growth.<sup>10)</sup>

This result was consistent with the industrial policy of the government to foster infant industries that were expected to grow and become competitive in the world market. Japan is a country with a large population and, in order to keep full employment, it should have a variety of industries from materials and parts industries to process and assembly industries. This was called the 'one set principle'.

In summary, the rapid growth in Japan met the internal and external equilibrium conditions, and can be said to be stable in the 1960s.



The vision of a high growth economy contributed to a change in the consciousness and thinking of Japanese people. As they experienced rapid growth, they became confident about the future. Long-term forecasts based on a correct vision were extremely important and inspired Japanese people to believe in a new paradigm for the future of their country.

This vision and experience brought forth a new postwar business culture in Japan. The formation of organizational culture of corporations followed the same process. Top managers expressed clear visions of the corporation and business success stories followed, leading to the birth of a new corporate culture.

However, Japan lost clear vision after the oil crisis in 1973. A new vision was presented by Shimomura, known as “zero growth”.

Generally it is very difficult to change culture, once it is formed on macro and micro levels. People, businessmen, bureaucrats and politicians declined to accept the vision of “zero growth”. This was a serious problem, resulting in an economic disorder and confusion in the 1980s and 1990s.

### 1.3 Vision of zero growth and performance after the oil crisis

Around 1970 the Japanese economy caught up with those of European countries, and its high rate of growth started to decelerate. The oil crisis broke out in 1973 and caused serious confusion in the world economy. Japan was forced to adjust its economy to this great shock, and Shimomura expressed his new vision of “zero growth”.

#### 1.3.1 Vision of zero growth

The critical factor was the oil crisis in 1973. The oil crisis was a serious disturbance for Japan, because it depends heavily on imports of oil. Shimomura thought that a limited supply of oil would destroy one of the fundamental conditions for favorable economic growth of the world,

and the Japanese economy could no longer grow in a way that maintained internal and external equilibrium conditions simultaneously. His growth theory consistently focused on equilibrium conditions.

Shimomura's basic logic didn't change. What changed were the conditions which had been the basis for the economic growth of the world. But the fact that he suddenly changed his vision from rapid growth to “zero growth” was a big surprise to the Japanese.

There were several reasons why people didn't feel inclined to agree with Shimomura. Zero growth looks gloomy — it means no corporate growth and no increase in income. It was difficult for people who were used to the high growth economy to accept this new vision.<sup>11)</sup> In addition to these general feelings, people thought that there are always pessimists and optimists in the world, and that Shimomura had simply changed his view from optimism to pessimism. However, people didn't realize that he had not changed his logic.

Generally most economists were not so serious, for several reasons. They pointed out that the ratio of oil consumption to GDP was low, so that the Japanese economy wouldn't receive serious damage from the oil shock.<sup>12)</sup> Another argument was that the oil crisis was a big problem, but it would be temporary. Thus Japan would recover from the illness and the economy would resume its growth path after a few years. The growth rate might be less than 10%, but it would be higher than that of Europe and the U.S. This view was supported by people who were optimistic; “The Japanese economy has an excellent ability to change. Therefore economic growth won't slow down drastically.”

On the other hand, Shimomura warned that high capacity wouldn't bring about domestic demand-led growth as in the 1960s. He thought as follows. Japanese firms would increase their productivity, but this change wouldn't lead to



an increase in domestic demand, because it was restricted by the constrained oil supply. Labor-saving innovation would destabilize this adjustment process. He was concerned with the unemployment problem.

Instead of labor-saving innovation, Shimomura emphasized the promotion of innovation in the development of new products, new sources of energy, pollution prevention, environmental conservation and human health. He thought that investments of firms should be directed to realize innovation toward the goal of a sustainable society.

The government expressed an optimistic view. According to the mid-term economic outlook of the government, the rate of economic growth was expected to be 6% per annum in the Plan of 1976–80, and 5.7% per annum in the Plan of 1979–85. In order to raise the growth rate, the government continued to increase public expenditure, which resulted in a deterioration of the fiscal balance. Public investments were increased and the natural environment was destroyed.

Soon after the oil crisis, Shimomura published a paper in January 1974, in which he clearly explained his vision of zero growth for the Japanese economy (Shimomura 1974). Zero growth meant a sudden and discontinuous change in the growth path from 10% to 1–2% per annum at most. He regarded 1–2% growth as “zero”.

1.3.2 Performance after the oil crisis

After the oil crisis the Japanese economy

experienced stagflation. People were very concerned about the future of the economy. Prices went up and speculative movements occurred among consumers and businesses. Japanese firms began to increase exports, and the economy began to recover, expanding by around 3–5% annually. But this growth pattern was different from what was experienced in the 1960s (see Table 2).

The main factors which caused an increase in GDP were as follows:

'71–82 : The main factor was a rapid increase in exports to the U.S. and Europe. This was criticized as an 'intense deluge'. The world economy was stagnant after the oil crisis and a rapid increase of Japanese exports caused political problems abroad.

'83–85 : The main factor was a rapid increase in exports to the U.S. The U.S. economy was expanding very fast due to an audacious policy known as Reaganomics. The world economy responded to the expansion of the U.S. economy. The U.S. increased imports from all over the world and the current account of Japan showed a sudden and large surplus for three years, as compared with the 1970s.

'86–90 : The main factor was a rapid increase in domestic demand such as consumption, housing investment, and investment of firms, due to the 'bubble' economy in Japan. Banks lost monetary discipline and speculation

Table 2 Summary of the Economy after the Oil Crisis

	( '71–82)	( '83–85)	( '86–90)	( '91–95)
Annual rate of growth (%)				
GDP (in real term)	4.2	3.5	4.6	1.4
Exports (in real term)	8.9	8.2	3.0	4.3
Current balance/ GDP (%)	0.6	2.7	2.8	2.6

Source: Table 1

on stocks and real estate was rampant. In 1990 the bubble began to burst and the Japanese economy experienced a recession.

The increase in GDP in the '70s and '80s was caused by these unsustainable factors: an increase in exports, and the bubble economy. In this sense it was clear that 3–5% growth was not sustainable.

The rate of economic growth after the oil crisis was not zero in statistical terms. This caused economists to be critical of the zero growth vision. However, if we exclude these special reasons, the rate of growth was essentially “zero” in Shimomura’s sense. In the 1990s there was no special factor to boost the Japanese economy, and the growth rate was around 1% per annum. In fact in the first half of the 1990s, the government expanded public expenditure considerably to cope with the recession due to the bursting of the bubble economy.

The zero growth vision was incomprehensible to Japanese people. Firms and the government continued to invest, which caused overcapacity in many industries and a massive accumulation of bad loans by banks and debt in the government budget.

### 1.3.3 Discipline

In the 1960s Shimomura supported the principle of free and unrestricted activities of businesses. This principle promoted rapid changes and improvements of the standard of living. However, after the oil crisis the Japanese economy was restricted by the condition of oil supplies. Adaptation to the oil crisis and adjustment to a zero growth economy were very difficult. The principles which were effective in the rapid growth period were no longer useful in a slowly-moving economy, and would disturb the adjustment process.<sup>13)</sup>

In order to stabilize zero growth, Shimomura

emphasized “discipline” to labor unions, businesses, banks and the government. He thought that a moral element, as expressed below, had become important for long-term equilibrium. Prudent activities on the part of economic agents were required.

Labor unions should exercise self-control and not demand wage increases.<sup>14)</sup>

Businesses should exercise self-control not to invest in labor-saving and capacity-expansion projects. Investments for energy-saving make sense.

Banks should keep monetary discipline and exercise self-control regarding speculation.

The Government should maintain fiscal discipline or the principle of a balanced budget.

The Japanese economy had to change suddenly from rapid growth to zero growth. The adjustment process was very severe, and it had to be realized with minimal disturbance. Japanese people had to change their thinking and behavior. In order for a zero growth economy to be stabilized, the moral obligation of what Shimomura called discipline would be required.

What happened after the oil crisis? Labor unions demanded higher wages, and wages jumped up in 1974. An increase in wages combined with the hike of the oil price pushed up production costs, and firms began to invest in labor-saving technologies.<sup>15)</sup> These movements caused employment problems.<sup>16)</sup> In addition, export-oriented growth became a political issue with other countries.

In order to maintain employment and to reduce the trade surplus, domestic demand growth policies were pursued. The government used expansionary policy, leading to massive issues of national bonds. The long-term equilibrium conditions were not met. The principle of a balanced budget was abandoned in 1975, and the

external balance showed a large trade surplus.

It is true that the adaptive capacity of firms to the oil crisis was considerably high, but this didn't lead to an increase in domestic demand by the private sector. The government kept stimulating domestic demand, and the economy followed a different path which is above the track of "zero growth". This is one of the reasons why the zero growth vision didn't prevail in most people's thinking.

Another issue was that Japanese people began to think that the oil crisis was over. The oil price fell considerably in the first half of 1980s. It subsequently began to rise gradually, however the Yen appreciated in the latter half of the 1980s. Thus the price of imported oil in terms of Yen didn't rise from the mid-80s to the mid-90s.<sup>17)</sup>

In contrast, the world oil price in terms of U.S. dollars tended to rise in the long-term. The rate of increase for 1970–96 was 9.7% per annum, which is almost equal to the average yield of triple A-rated bonds of US companies.<sup>18)</sup> The market gave a signal that oil is an exhaustible resource. However, it may seem as if the oil problem is over because sometimes supply exceeds demand in the world oil market. This is because we made the utmost effort to save energy and adjusted to the constraint of oil supply. The constraint of oil supply in the world economy will remain from now on.

#### 1.4 Vision of zero growth and sustainable development

##### 1.4.1 New problem

Shimomura died in 1989. Since then, worsening global environmental problems began to attract public attention, and have become serious social, economic and political issues.

It seems that environmental problems such as global warming and reductions in biodiversity have strengthened the foundations for Shimomura's vision of zero growth. Activity of the world economy will be severely restricted by

the natural environment as well as the oil supply. In this sense Shimomura had the same view and understanding as an environmentalist. We have to consider seriously the meaning of zero growth, and apply this vision to public policy and corporate management. The vision of zero growth presented by Shimomura had profound implications for sustainable development, which we will examine in the following.

Visions of zero growth were published in *Limit to Growth* by the Club of Rome and *Small is Beautiful* by E.F. Schumacher around the first oil crisis in 1973. As environmental problems emerged, new ideas and analysis were presented such as "Four System Conditions" proposed by The Natural Step, "Factor Ten", "Gaia Hypothesis", "Ecological Footprint", "Zero Emissions", and the idea of a closed-loop society.<sup>19)</sup> Based on a systems approach, Robèrt *et al.* (2002) defined the conditions of sustainability, made clear The Natural Step Framework, and discussed its relationships with other ideas and analysis.

It seems we have reached a stage of zero growth for developed countries as a whole. Sustainability instead of growth is the biggest issue on the agenda. Economic systems of developed countries such as mass production, mass consumption and mass waste must be changed. In his vision of zero growth, Shimomura showed the direction of innovation that is necessary to achieve sustainability of our market economy, and The Natural Step clarified the concept of sustainability. With these theories in mind, we should develop breakthrough technologies which will realize the goals of "Factor Ten".

Developing countries may proceed along a new path which is different from what developed countries experienced in the past. The international division of labor will be reorganized in such a way that the economic activities of each country will be based more on the principles of closed-loop and sustainability. People in developing countries can benefit from breakthrough

technologies in advanced countries such as decentralized and renewable energy, and IT-related technologies. In this respect, Hart (2005) presented an interesting strategy of large multinational corporations (MNCs). According to Hart, MNCs will find new business opportunities for corporate growth by meeting the needs of the 4 billion poor people in developing countries. According to his new business model, MNCs will contribute to raising the income of the poor and conserving the natural environment of developing countries.

#### 1.4.2 Sustainability

According to Brundtland's report of the World Commission on Environment and Development, *Our Common Future* (1987), sustainable development is defined as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs."

In order to maintain a sound world economy, the Japanese economy as well as other developed economies should be stable and sustainable. Taking account of Shimomura's theory, the definition of sustainable development of the Brundtland Commission, and the theories and knowledge of natural scientists and economists, the economies of developed countries should meet the following conditions in a zero growth state:

- a ) The economy should be in equilibrium on macro level, which means that internal and external equilibrium is important.
- b ) Lifestyles and economic activities should be compatible with the natural cycle of the Earth.
- c ) The utility level of an individual should not decrease across generations.

#### 1.4.3 Zero growth and stationary state

If zero growth economy becomes sustainable, it will be a 'stationary state' that J. S. Mill envis-

aged, and his vision will be realized. The notion of social common capital of Uzawa (1994, 2005) is essential in achieving Mill's vision. The social common capital consists of natural capital, social capital and institutional capital. These are defined as follows:

Natural capital: the atmosphere, oceans, rivers, lakes, woods, animals, plants, ...

Social capital: social infrastructure such as mass transport, and 'lifelines' such as water, sewerage, electricity and other networks.

Institutional capital: systems such as justice, administration, finance, education, medicine, and others.

Proper management of social common capital as defined by Uzawa is the basis for a zero growth economy to be sustainable and stationary in Mill's view. Institutional capital will be increasingly important for the sustainability of a market economy.

Social common capital is owned both publicly and privately and people with special knowledge and competence are in typically charge of its management. Uzawa points out that it is necessary for these people to work according to their professional ethics. This will also apply to professional managers of large corporations. Economic policies to maintain macro equilibrium will remain important, however, public policy to manage social common capital properly will become increasingly essential.

Shimomura made clear his vision of zero growth and emphasized the need for discipline on the part of economic agents. Morality will be required and proper management of social common capital is essential for sustainability to be achieved.

Vision, morality and institutions that we haven't paid much attention to so far will be key factors for sustainability of the economy. The

same will be true of managing corporations in a sustainable society.

We are now at a great turning point. We need a new vision. This new vision will change life-styles of individuals and business-styles of firms. It is difficult to change the present culture in the short-term, because it is rooted firmly in our economic activities, but we see a gradual change taking place in advanced corporations.

## [ II ] Vision of the Corporation

One of the reasons why Shimomura's vision of zero growth didn't prevail among Japanese businessmen was that it was not related with the vision of a firm. Shimomura was a macro economist, and he didn't touch on micro issue. As in the case of rapid growth, the vision of the corporation should be in line with that of the macro economy. The new vision will be formed on the basis of sustainability. In case of Japan, the vision of the corporation can be understood through looking at the history of environmental management by firms.

### 2. 1 Environmental management in Japan

#### 2. 1. 1 Three stages of development

The first industrial pollution problem in the postwar period occurred soon after World War II, in which cadmium (Cd) from industrial processes caused adverse effects on human health. In the mid '50s drainage water of petrochemical plants which contained mercury (Hg) caused Minamata disease. At the beginning of the '60s polluted air caused asthma in industrial areas. In the mid '60s more problems with mercury occurred. People filed lawsuits relating to these four pollution problems against corporations and the government, and won. However, the government was passive and didn't take effective environmental measures immediately. In 1967 the government introduced a pollution prevention law which was deemed insufficient,

and it was revised in 1970.

In the latter half of the 1980s new kinds of chemical materials began to attract attention. These were PCBs, dioxins, environmental hormones (endocrine disrupters) and so forth, which will affect human health even in very small concentrations. In the 1990s global environmental problems, especially global warming and losses of biodiversity, became matters of concern.

As mentioned above, in the 1960s pollution began to be serious, but corporations generally ignored it. In the 1970s this problem was one of the most serious social concerns. An anti-growth sentiment became conspicuous in the media and people argued about the need for corporate social responsibility.

The government, especially local governments in industrial zones and large cities, began to adopt very stringent policies to control industrial pollution. Regulation in the form of direct control was enforced. Monitoring systems of local governments were very powerful.

Large corporations, especially those in energy and material-intensive industries, were forced to make agreements with municipalities and to observe regulations to get 'a license to operate' as a going-concern.<sup>20)</sup> Environmental management was 'reactive' and aimed at achieving compliance. In order to meet severe restrictions, corporations developed technology to control emissions of SOx and other hazardous wastes.<sup>21)</sup> Direct regulations and technological development were a characteristic of such environmental measures. Corporations used 'end of pipe' technologies, which increased production costs. Trade-offs between environmental measures and profitability were experienced, and managers were reluctant to take measures to control pollution.<sup>22)</sup>

Until the 1970s, corporations were generally reactive, but among top managers there were some proactive figures. According to Miyakawa (1992), in the late 1960s Kazutaka Kikawada,

CEO of Tokyo Electric Power Company and a representative of the association of managers (Keizai Doyu Kai), expressed his view that a corporation in which control is separated from ownership becomes a public institution, and that a manager in such an organization has an independent role to fulfill a social responsibility that harmonizes the complex interests of stakeholders.

In the 1980s environmental management reached a second stage of evolution. Corporations put more emphasis on prevention of pollution. Environmental management became 'precautionary' and measures were taken to reduce the amount of toxic waste produced in manufacturing processes. Corporations improved their manufacturing processes to increase resource productivity. The objective of such changes is to reduce anticipatory environmental risks and contingent liabilities. The idea of 'Pollution Prevention Pays' began to prevail among industries.

In the 1990s environmental management by leading firms became 'proactive' and strategic. Top managers began to realize that global environmental problems are not a threat, but an opportunity for business. Environmental problems became one of the most important issues in competitive strategy. Corporations began to aim towards being a first mover who can enjoy learning effects and develop a good reputation for environmental management. R&D in environmental technologies increased.

### 2.1.2 Environmental policy of the government and NGOs

The environmental policies of the government have changed since the 1990s. Direct controls remain for toxic materials. In addition, indicative and indirect policies such as standards, goals and economic instruments are being introduced, and will become more important. These policies have helped to clarify the direction and stimulate cooperative actions among corporations, for example the recycling of household appliances and cars.

Cooperative action is very important to avoid free rider problems. Members of industrial associations, NGOs, government officials and researchers have begun to communicate and discuss policies. Meetings with multiple stakeholders have become increasingly necessary in the policy making process.

To achieve a sustainable and closed-loop society, new environmental laws were stipulated. These reflected policies to encourage companies to reduce consumption of energy and materials, and promote recycling of waste products such as household appliances, pet-bottles and containers, cars, PCs, scraps from restaurants and materials of demolished buildings. A concept of Expanded Producer Responsibility (EPR) was incorporated into government measures. The introduction of an environmental tax (a combination of a carbon tax and subsidies for R&D and investment in environmental protection) is being discussed among the relevant ministries. These measures may be insufficient and need revisions, but they will help to improve environmental efficiency in the long term.

Global companies are becoming sensitive to new regulations in the EU such as WEEE and RoHS. Regulations on environmental protection will be harmonized in the future.

In addition to the government, NGOs are beginning to have a new influence on corporate management. When environmental pollution was serious in the 1960s and 1970s, NGOs and local residents protested strongly against the corporations responsible. Now, a new type of NGO is emerging. They talk with people in business and the government, and make proposals to improve corporate environmental management and government policies. Stakeholder dialog is becoming important for both corporations and the government.<sup>23)</sup>



### 2.1.3 Environmental strategy and Environmental Management System (EMS)

In the 1990s corporate environmental management became proactive. Environmental problems became one of the important issues in corporate strategy.

Strategic environmental management requires every section of an organization to take account of environmental considerations when it carries out its business. For this purpose, environmental management systems such as ISO14001 have been introduced by many corporations in Japan. Environmental management tools such as LCA (Life Cycle Assessment), DfE (Design for Environment), environmental accounting and eco-labels are widely used by large corporations. To facilitate communication with stakeholders, many corporations publish environmental reports. This evidence suggests that large corporations are aiming for a win-win situation, leading to higher eco-efficiency.

In the 2000s corporations started to publish sustainability reports instead of issuing environmental reports. Based on the notion of a 'triple bottom line', a sustainability report includes three things: economic (profitability), environmental, and social elements.<sup>24)</sup> Social elements are labor conditions, product safety, philanthropy, contribution to the local community, human rights, sex discrimination and so on. Corporations refer to the guidelines of the Ministry of Environment and the Global Reporting Initiative (GRI).

In recent times, top managers have begun to talk again about corporate social responsibility (CSR) and role of the corporation as public institution. The number of these proactive managers is small, but managers didn't take up this subject at all during the 1980s. A business function in charge of CSR, which includes environmental management, is being introduced, and business people have started to discuss stakeholder management.

To cope with global environmental problems, corporate management is being reformed. Discussions about CSR and stakeholder engagement have induced managers to think about the vision of the corporation.

At present there are many corporations that lag behind this trend. Even now most managers tend to think that environmental measures are the use of end-of-pipe technologies. As these technologies increase costs and reduce competitiveness, managers are reluctant to act positively. Generally, small and medium-sized firms lack the financial and human resources to take proactive environmental measures.

However, environmental problems are certainly changing the management of large corporations.<sup>25)</sup> Leading corporations are using proactive policies to survive as a going-concern. In order to be successful in environmental management, vision, strategy, organization and culture become very important.

## 2.2 Corporate management in Japan

Organizational structure is important to carry out strategy. In Japan the so-called Japanese business practices were formed in the 1960s. These practices related to the organization of firms and contributed to realize corporate growth. These business practices will be useful to achieve a new vision of the corporation in the 2000s.

Under the Japanese business practices, corporations took long-term relationships into account. In relation to employees, labor practices such as long-term employment, seniority wages and internal promotion were established. In relation to suppliers, long-term transaction practices such as Keiretu relationships, were formed. Keiretu are long-term relationships between corporations such as between an assembly company and a parts manufacturer, and is an intermediate type of transaction between a completely internal transaction and a market transaction.



These business practices were strengthened during the period of rapid growth of the Japanese economy. They contributed to accumulation of firm-specific skills and know-how, and enhanced the sharing of risks as a group. They were sources of competitiveness of Japanese industries. In the competitive strategies of corporations, employees and suppliers were important stakeholders. At present, stakeholder theory has begun to attract the attention of business circles in relation to a new vision in Japan. To focus on stakeholders has become an important competitive strategy.<sup>26)</sup>

With these practices, QC (Quality Control) and TQM (Total Quality Management) were promoted to improve product quality and the total factor productivity of corporations. The objective of corporations was to catch up with the advanced technologies of Europe and the US. In this way corporate objectives and strategies were clear.

The vision of the Japanese economy was rapid growth. The vision of the corporation was growth of sales and profits in the long term. The vision of the macro economy became the vision of the micro economy during the rapid growth period. The corporate vision was realized through Japanese business practices.

Japan is now at a historical turning point. A new vision is necessary to form the basis of strategy, organization and culture of corporations. Japanese business practices will remain effective to realize this new vision, as we will see in the next section.<sup>27)</sup>

## 2. 3 Corporate social responsibility and stakeholders

### 2. 3. 1 Three basic trends

As mentioned above, in Japan corporate social responsibility (CSR) was an important issue in environmental management, and stakeholder management was essential for competitive strategy. These two streams were independent,

but they became closer and began to converge together. In recent years environmental management has become linked with competitive strategy. CSR and stakeholder management will overlap and managers will integrate these issues to establish a new vision of sustainability. There are three basic trends which drive this overlap: environmental problems, globalization of corporate activities and the IT revolution.

Environmental problems have changed from 'local' to 'global'. Local communities focused on CSR to reduce pollution in the 1970s and corporations developed technology. A specific section of a typical corporation was in charge of negotiation with the local government and regional people. Global environmental problems require a quite different approach by corporations. They are directly related to the corporation's main business, and involve every section of it through the value and supply chains. As global environmental problems have become serious, top managers began to recognize this fact and consider it strategically. They became proactive in the 1990s. Unlike the 1970s, managers have to have a holistic view, and we need more measures other than technological solutions. The meaning of CSR has deepened, and corporate stakeholders are expanding from local communities to the world.

Globalization requires corporations to consider the differences between their home country and host country. Direct investments of Japanese firms in developing countries are posing new social issues due to differences in culture and business practices. Social elements such as working conditions and human rights which are important in the 'triple bottom line' approach are new issues to be taken care of. These problems are related to corporate ethics. The content of CSR is becoming extensive, and local communities and the government in foreign countries are becoming new stakeholders.

In addition, the IT revolution is promoting the

connection of CSR with stakeholder management. Activities of corporations have become global, and information technology is advancing very rapidly. Antisocial corporate behavior in a developing country will be criticized by NGOs and this information will spread quickly around the world through the Internet. In Japan, due to recent business scandals, corporate ethics have become a focal point of discussion in the media. Corporations were forced to reorganize their structure and begin to take into account the influence on their business of stakeholders such as whistle blowers, regulatory agencies and the media. The IT revolution requires corporate accountability to stakeholders including the media and NGOs.

The environment, globalization and the IT revolution are the three main factors that promote consideration of CSR and stakeholder management by corporations. The content and definitions of CSR and stakeholder management are becoming important issues.

According to Post *et al.* (2002), the corporation needs to be redefined both conceptually and practically. They emphasize the position of the corporation as “the center of a network of stakeholders”. They write that this stakeholder view is an extension of strategic management theory of a resources-based view and an industry-structure view.

Freeman (1984) defines a stakeholder in an organization as “... any group or individual who can affect or is affected by the achievement of the organization’s objectives.” The corporation and stakeholders have a common goal which is beneficial for both. This goal is achieved through the market mechanism and stakeholder dialog. If corporate management is successful and the firm continues to operate in the long term, this will benefit all stakeholders of the corporation. CSR is essential for maintaining the corporation as a going concern.

CSR and stakeholder theory are two sides of

the same coin and have important implications for the vision of the corporation. In the multi-stakeholders’ meetings of the EU and the ISO, the people involved are discussing CSR.

### 2.3.2 Fiduciary obligations and professional ethics

CSR and stakeholder theory apply to the management of large corporations. A large corporation is very influential in our economic, social and cultural life. It plays an important role in the workings of a market economy. Its governance is characterized by separation of control from ownership. Top managers, i.e., the board of directors and executive officers, have fiduciary obligations to the corporation. They exercise leadership to fulfill these obligations to succeed in business. The corporation as a going concern benefits stakeholders who share goals with it. In this sense top managers of a large corporation have responsibility to stakeholders. This is what we call CSR.

When pollution problems were serious, Kikawada of Tokyo Electric Power expressed the need for CSR and showed a typical example as a top manager. When the Japanese economy was in serious confusion after the oil crisis, Shimomura emphasized discipline on the part of corporate managers. Kaku (1997), the honorary chairman of Canon, emphasized the moral duty of global corporations. He wrote about a business credo of ‘kyosei’ which means a spirit of cooperation with stakeholders. A manager in a large corporation should behave according to professional ethics.<sup>28)</sup>

In relation to this argument, global environmental problems have reinforced the role of managers. At present, global warming is damaging our life, and sustainability of the Earth’s ecological system has become a concern of the general public. Dasgupta and Mäler (2004) showed that it is important to take account of irreversibility and non-convexity of ecological systems. These

new studies imply that, in addition to public policy, professional ethics of managers will become more important for sustainability of the market economy. Global environmental problems are posing new challenges to managers. They should be aware of the results of academic research on the relationships between economics and ecosystems.<sup>29)</sup>

CSR and stakeholder theory were normative originally, but now they are positive as well. When we consider sustainability of our economy and society, we should focus on them as essential items on our agenda. They are having a substantial influence on the strategies of large corporations in Japan, Europe and the US. A new vision is emerging based on CSR and stakeholder theory.

#### 2. 4 Visionary companies and sustainability

According to Collins and Porras (1994, 2002), a corporation which is successful as a going-concern has a well-conceived vision. Vision means "What we stand for", and it must be something that will last for a long time. A vision consists of a "core ideology and envisioned future." In relation to our argument, core ideology is very important. Collins and Porras write in their book that core ideology defines "the enduring character of the corporation — its self-identity that remains consistent through time and transcends product/market life cycles, technological breakthroughs, management fads, and individual leaders." They insist that "the most lasting and significant contribution of the architects of visionary companies is the core ideology."

Collins and Porras explain that core ideology consists of core values and a core purpose. Core values are "the corporation's essential and enduring tenets — a small set of general guiding principles", and purpose is "the corporation's fundamental reasons for existence beyond just making money." Following their argument, core values and core purpose (long-term objectives)

are two essential factors for the vision of long-lasting companies.<sup>31)</sup> Referring to Collins and Porras, we will consider the ideas of core values and core purpose from the point of view of sustainability.

Österberg (2003), who had been chairman of the Swedish Newspapers Association and a member of the top management of the Dagens Nyheter Group, expressed a very interesting view about companies. Looking at natural systems, he realized that "everything is part of a whole and everything is interconnected". He concluded that "the primary purpose of a company is to serve as an arena or vehicle for the personal and human development of those who are working in the company".

The view of Österberg is very similar to that of the founders of Sony and Honda, and fits well with small-sized firms and new firms at the start-up stage.<sup>32)</sup> His view gives a good example of the core values of a company. Core values are very important in large companies too. Collins and Porras summarize the core values of visionary companies, and we must understand that core values are often expressed in moral terms which include humanistic values such as personal respect, the dignity of an individual, personal fulfillment, accomplishment, integrity, honesty, fairness, openness, creativity, contributions and responsibilities to the community, and so forth. These core values are related with the ideas of "sympathy" of Adam Smith, "morality" of E. Shibusawa and "discipline" of Shimomura. They are the foundations for CSR and stakeholder engagement, and will be the most basic and long-lasting values for companies,

The core purpose (long-term objective) of a corporation reflects fundamental trends in the environment outside of the corporation itself. Major movements of the market economy and society influence the purpose. Following the argument of this paper, the core purpose should relate to sustainability of the market economy

and society in which the corporation operates. The core purpose of a typical firm was growth in the old vision, and it will be sustainability in the new vision.

The transformation of corporate purpose from growth to sustainability will change the paradigm of the constituency of firms. People working in firms will reconsider the 20th century paradigm and look to a new paradigm. Change in the paradigm will lead to a new corporate culture. This argument is important for large corporations that are very influential in the present society.<sup>33)</sup>

Core values and core purpose are very important for a large company. The new vision defined above will stimulate new activities and innovation, and offer corporations 'a license to operate'.<sup>34)</sup> At the beginning of the rapid growth period, Shimomura recognized that entrepreneurship was the basic locomotive of economic growth. Now once again it will promote the economy toward sustainability. Corporations in Japan are now publishing an annual 'Sustainability Report' in which top managers express their commitment to contribute towards sustainability of society.<sup>35)</sup>

Strategy is determined based on vision. Management processes are carried out following the so-called PDCA cycle which means 'Plan, Do, Check, Action'. This is an adaptive learning process, and will improve performance continuously. As a result, corporate culture will change gradually towards sustainability. The vision of sustainability and process-oriented management will change corporate culture and improve corporate performance.<sup>36)</sup>

## Conclusion

We have studied the history of the macro economy and business management in Japan. From this, we found that vision is very important for stability and sustainability of the market economy and society. On a macro level we should consider the meaning of "zero growth." Shimomura

always focused on three basic factors: innovation, equilibrium, and discipline. The vision of zero growth will lead to 'stationary state' of J. S. Mill. We have pointed out social common capital should be managed properly.

The three basic factors that Shimomura emphasized are also important for management of the corporation. Using these factors, the vision of zero growth was linked to the vision of the corporation, and we could gain a deeper understanding of what Shimomura implied. At a firm level we expect that a large corporation should exercise entrepreneurship to direct the market economy toward sustainability. Corporate management is becoming proactive. These tendencies are emerging in leading corporations.

We must keep in mind that proactive corporate management is not sufficient for the market economy to be sustainable. We also need to manage social common capital properly. Public policy to manage social common capital and proactive management of visionary companies will move the market economy towards sustainability. The behavior of large corporations and the management of social common capital are two essential issues. These issues are not separate, because the corporation or system of legal persons is an institution which is one of legitimate constituencies of social common capital. Top corporate managers have a responsibility to keep this institutional capital in a proper state. Large corporations have become public institutions, and corporate management based on a new vision is required.

## Note

- 1) I am most grateful to Tadao Miyakawa, Karl-Göran Mäler and Hirofumi Uzawa for valuable suggestions. I am thankful to Beijer Institute of The Royal Swedish Academy of Sciences and New Zealand Asia Institute of The University of Auckland.
- 2) In the 1960s business people paid much atten-

tion to economic forecasts and movement of the macro economy had a strong influence on business activities. There were always two views in economic forecasts. One view was rapid or high growth. The other was 'stable growth' or lower growth. Shimomura was a leading proponent of rapid growth and consequently became a charismatic figure.

- 3) This paper ("Analysis by Multipliers of Economic Fluctuations") was published in the Research Journal of the Ministry of Finance in 1951 and became his doctoral dissertation. His work attracted attention from the academic community as it was cutting-edge research at the time.
- 4) Innovation causes both business cycles and growth. In the 1960s Shimomura was not interested in business cycles, and applied innovation theory to economic growth.
- 5) In that paper, using data of corporate firms for 1950-53, he estimated the output-capital ratio was equal to 1. His research received a high evaluation as a pioneering study of the Japanese economy.
- 6) See Shimomura (1971) for the original papers.
- 7) In many cases, capital includes public investment as well as private investment. This was one of the most important points in the controversy. Shimomura insisted it is investment of firms that is the basis for the productive capacity of a country. He thought rapid growth would make it possible for the government to allocate resources to invest in public infrastructure. According to capital stock data, the output-capital ratio for Japan was 1.1 in the 1960s and 0.5 in the 1970s. It became lower due to an increase in investments for pollution control and energy-saving (see Horiuchi (1998)).
- 8) Shimomura put a high value on the ability and vitality of the private sector. Generally his view on this matter was different from that of bureaucrats.
- 9) The general tendency in Japan at the time was as follows. In calculating consumer prices, the weight of manufactured goods was 0.5 and that of services was 0.5. The economy grew 10% annually. In manufacturing industries the increase in productivity and wages were 10% annually. In service industries the increase in

productivity was zero and wages increased 10% annually. Then wholesale prices remained stable and consumer prices increased 5% annually.

- 10) An increase in exports stimulated domestic demand, especially investment by firms. But domestic demand was independently increasing very rapidly, which brought about an increase in imports. An increase in exports was necessary to finance the growth in imports. In addition, the world economy was expanding rapidly which enabled Japanese exports to grow rapidly. Exports were just enough to equal imports. After the oil crisis, however, exports increased and domestic demand remained weak, and as a result the Japanese economy became export-oriented.
- 11) A zero growth economy is a slowly-moving economy. However, Shimomura emphasized "If we change thinking and adjust our life, zero growth won't be gloomy. The Japanese economy will be like a European economy."
- 12) Oil is a basic material which is used directly and indirectly for the production of goods and services. The above argument overlooked this important point. Shimomura said, "We can't grow rice without oil".
- 13) Shimomura (1978) writes, "After the oil crisis, we have to adapt ourselves to the economic problems at a slow tempo. Fortunate or not, this change occurred as a historical condition. We have no other choice but to adapt ourselves to this new condition, and to find clever ways to fulfill our life privately and socially to the maximum extent."
- 14) During the second oil crisis, in 1980 labor unions refrained from demanding higher wages in order to protect employment.
- 15) If there had not been large hikes in wages in 1974, an increase of labor productivity might have resulted in a reduction of working hours.
- 16) Appreciation of the Yen in the latter half of the '80s and '90s forced firms to increase labor productivity, and to move production plants to foreign countries.
- 17) At present, in Japan R&D and investments in energy saving may not be sufficient due to a short recovery (pay-back) period and neglect of the long-term effect on climate change.

- 18) See Horiuchi (1998).
- 19) During the Edo era (1603–1867), Japan pursued a national isolation policy. It is said the Japanese people achieved a perfect closed-loop society during that period. That is, their lifestyle was compatible with the natural cycle. Everything was recycled. People cherished things and used them for a long time with care.
- 20) This was related to whether a company could carry out investment continuously. Local government represented the local community. Generally firms were reactive, and talks with local government were not regarded as stakeholder dialogue in the sense of being proactive and strategic management issues.
- 21) Serious pollution at that time was improved through technological development. As a result, economic growth was possible. This is the main reason why we observed an inverse U-shape relationship between GDP per capita and the pollution level. This tendency will not readily apply in the case of global environmental problems.
- 22) These trade-offs meant that environmental measures didn't solve the root causes of pollution problems. Innovation to realize a win-win solution is necessary. In the 1970s firms invested actively in innovation for energy-saving, which improved profitability and air pollution, and helped to mitigate global warming problems. Energy-saving will be a lasting challenge for industries. Innovation to reduce energy and material usage contributes to profitability and the natural environment.
- 23) NGOs in Japan are not as influential as in Europe. This is one of the reasons why Japan lags behind in some areas.
- 24) See Elkington (1998).
- 25) Large companies are also influencing the environmental management of small and medium-sized companies through supply chain management.
- 26) Due to the rapid appreciation of the Yen and globalization of the economy since the 1980s, some of these Japanese practices were reviewed. But they are still important sources of competitiveness in successful Japanese companies.
- 27) It is true that there are not many companies that have a clear vision towards the new era.
- 28) The following cases show that morality and professional ethics are important for business. Adam Smith is well known for 'sympathy' in *The Theory of Moral Sentiments*. The Merchants of Ohmi were wealthy peddlers in the Middle Ages in Japan. Their family motto was, "Be good to suppliers, customers and society". E. Shibusawa (1840–1931) was a very active and influential businessman at the beginning of the industrial era. He contributed to the establishment of about 500 companies. He emphasized two things: A businessman should have a soroban (a Japanese manual calculator which represents profit) in one hand, and a book on the Discourses of Confucius (which represents morality) in the other hand. His motto was that business should be conducted in accordance with morality.
- 29) See Mäler *et al.* (1996), Berkes & Folke (1998), and Sundberg & Söderqvist (2004).
- 30) Based on a principle of stakeholder fairness, Phillips (2003) clarifies that stakeholders are separated into legitimate and derivative stakeholders. The natural environment is not itself a stakeholder, but it influences a company through its stakeholders.
- 31) The product and services that a firm supplies are the means to achieve its vision.
- 32) These new start-ups will play an important role to bring forth innovations. However, changes in large corporations are equally essential.
- 33) A change in objective to sustainability doesn't mean that a firm will not grow. A firm which contributes to sustainability of the market and society will increase sales and profit in the long-term.
- 34) We need innovation to change technology and management, and to attain the objective of sustainability. Sustainability requires managers to consider equity problems, which will influence the direction of innovation. The core purpose is closely related to core values that emphasize morality.
- 35) In the rapid growth days the vision was clear and management focused on 'how to do'. From now on, 'why and what to do' will be essential. This is a challenging task for Japanese man-



agers.

36) See Horiuchi & Mukai (2006)

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