To commemorate this year's 50th anniversary of its foundation, the Japan Center for Economic Research is working on Vision 2050, a project for making policy proposals on what needs to be done to ensure that the Japanese economic society is full of dynamism and hope in 2050. This is the first report on the project.

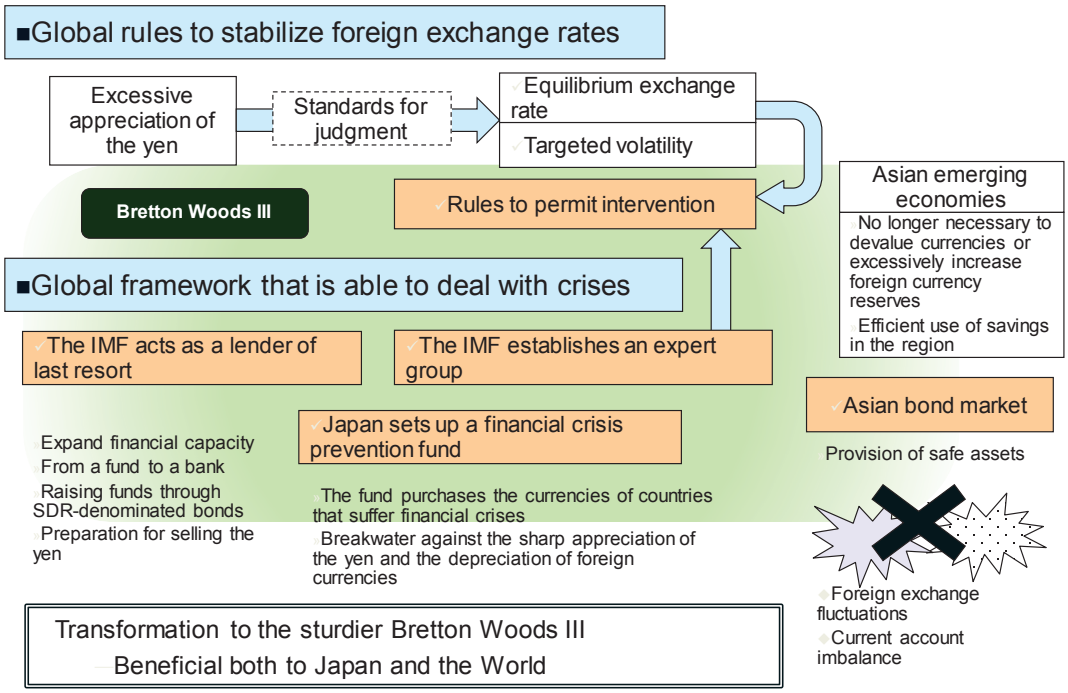
March 8, 2013

Stabilize Foreign Exchange Rates to Counter a Sovereign Debt Crisis
- Currency reform to end the deflationary economy -

Japan Center for Economic Research[1]

The Japan's growth strategies are not limited to domestic reform. The global financial framework is considered to be a substantial foundation on which the economy develops. A key reason why Japan has been suffering from a deflationary economy is the excessive appreciation of the yen. For this reason, building a framework that eliminates factors making the yen overvalued and one that can manage a future financial crisis will be an effective growth strategy. In addition to aiming to end Japan's deflationary economy and stimulate medium- to long-term growth, the Japanese government should facilitate the reform of the global currency system primarily by adopting measures to stabilize the foreign exchange market so that it will be able to handle sovereign debt and other crises, and strengthening the International Monetary Fund (IMF).

Framework of global financing to create growth



[1] This report was mainly prepared by President Kazumasa Iwata, Yuki Masujima and Tetsuya Hattori with the cooperation of research staff Sumio Saruyama, Tatsuo Kobayashi, Katsuaki Ochiai, Hideaki Matsuoka and Kengo Tahara. The report also contains analyses undertaken by JCER's short- and medium-term economic forecast team.

Summary

1. The strong yen makes it difficult to end the deflationary economy in Japan. Despite the appreciation of the yen, companies have been avoiding raising their export prices, yet they have secured market shares and profits mainly by cutting employees' wages. This exercise has resulted in ongoing stagnant domestic demand and price falls.

2. The equilibrium yen exchange rate that is consistent with the economic fundamentals is the mid-¥90s against the U.S. dollar. The recent correction to the appreciation of the yen is therefore considered to signify the return of the yen rate to an equilibrium level.

3. Criticisms that Japan's strengthening of its monetary easing policy is to wage a currency war are not reasonable. From the perspective of the pricing activities of Japanese companies, the weak yen potentially makes the Japanese economy weaker. It is quite possible that, before World War II, economic growth was mostly hindered after the Great Depression by protected trade, chiefly through the lowering of customs duty, rather than by the devaluation of currencies synthesized by each country.

4. The yen tends to be appreciated due to the fact that (1) emerging economies guided the exchange rates of their currencies to depreciated levels after the Asian currency crisis by increasing foreign currency reserves in preparation for another crisis, (2) because the International Monetary Fund (IMF), a last resort lender, does not have sufficient funds, the yen tends to be selected as a safe-haven currency when the currencies of vulnerable countries are likely to be sold off, and (3) investors have only limited choices of safe assets in Asia as bond markets are underdeveloped.

5. There are concerns that the shortage of safe assets will become more acute in the future. The number of investment-grade government bonds has declined due to a deterioration in the fiscal conditions of developed economies, while the funding capacity of the IMF is relatively poor in light of the swelling financial market. Because the safety net against the collapse of governments and other financial crises is inadequate, it is necessary to improve the financial framework called Bretton Woods II, in which the current account balance is not easily adjusted, to the sturdier Bretton Woods III.

6. It is important to make the IMF issue SDR-denominated bonds and develop a sound bond market in Asia to increase safe assets. When an overseas financial crisis occurs, the financial crisis prevention fund can act as a breakwater against the sharp appreciation of the yen and the depreciation of foreign currencies by purchasing the relevant foreign currencies through its funds. This will be beneficial to both Japan and foreign governments.

7. It is necessary to further clarify the rules of foreign exchange adjustments. The lack of standard for equilibrium rates that each country can share leads to creating suspicions about the development of a currency war. The IMF is required to establish an expert group and hold deliberations to determine standards for equilibrium rates, volatility rates and other rules under which interventions are permitted.

8. Major currencies, including the euro, pound sterling, Japanese yen, yuan and SDR, centered on the U.S. dollar, are likely to form a global financial structure in the future, heading toward 2050.

1. The strong yen facilitates deflation. --- Prices are suppressed through the restraint on wages.

One of factors that have driven Japan into deflation is the strength of the yen since the middle of the 1990s. There are two reasons why the strong yen has facilitated deflation. Firstly, while companies have avoided higher export prices (in U.S. dollars), they have attempted to secure profits by lowering wages and cutting costs. Secondly, the terms of trade (the volume of import items that is able to be obtained based on one unit of export items; calculated by export prices/import prices) have not improved even with the strong yen because the factor described above and the surge in the prices of resources countered the situation. (Figure 1)

While these events have been unfolding, a restraint on wages has made it particularly difficult for Japan to end the deflationary economy. An analysis of various data shows that (1) a negative impact often spreads through the course of the strong yen → production → wages → prices, (2) companies centered on those in the export industry reduced wages at a greater rate than that of the added value during the period of the strong yen between 2005 and 2012 (Figure 2), and (3) if scheduled wages, basic wages, are suppressed, prices often become stagnant at a later date.[2] It is quite possible that the Japanese economy has fallen into a negative equilibrium of sluggish domestic demand, as a result of households having missed out on the benefits of the strong yen, and declining prices.

Figure 1: The effective rate of the yen and terms of trade

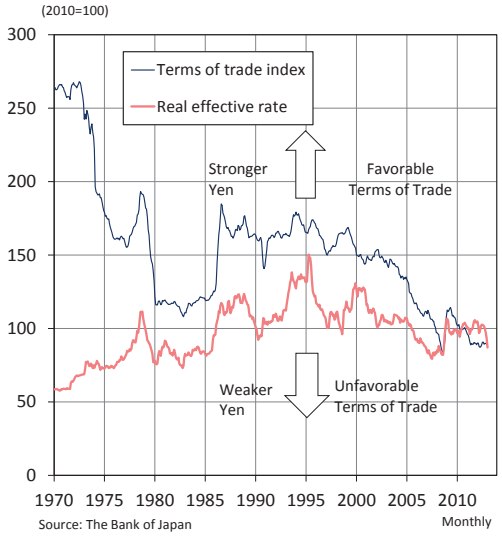
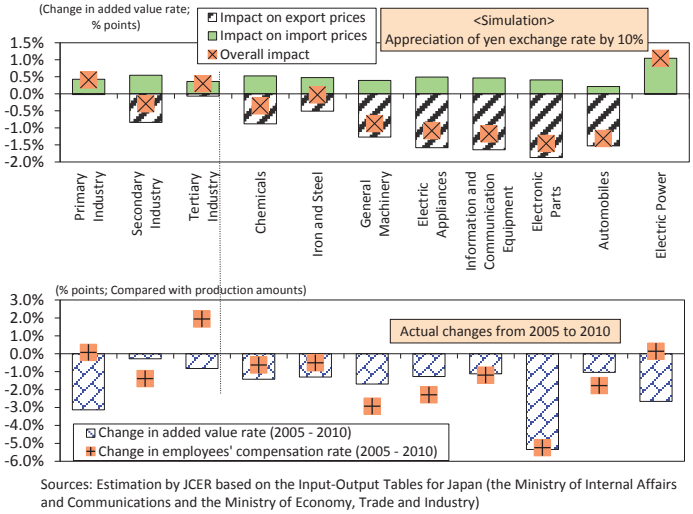


Figure 2: Industries suffering greater losses from the strong yen adopt stricter wage controls



[2] The analysis in (1) is based on the results of measurements of Granger causality. The impact on wages from production is marginal in the United States and South Korea. The analysis in (3) is based on the results of measurements of the consumer price index (CPI) and the time difference correlation factor. Based on this relationship, in order to raise the price inflation rate it is necessary to raise scheduled wages, not raise bonuses and other temporary income.

2. The equilibrium rate is the mid ¥90s to one U.S. dollar. --- It varies from industry to industry.

By how much has the yen appreciated excessively? To find a pointer for estimating an equilibrium (appropriate) rate, we measured the behavioral equilibrium exchange rate (BEER).

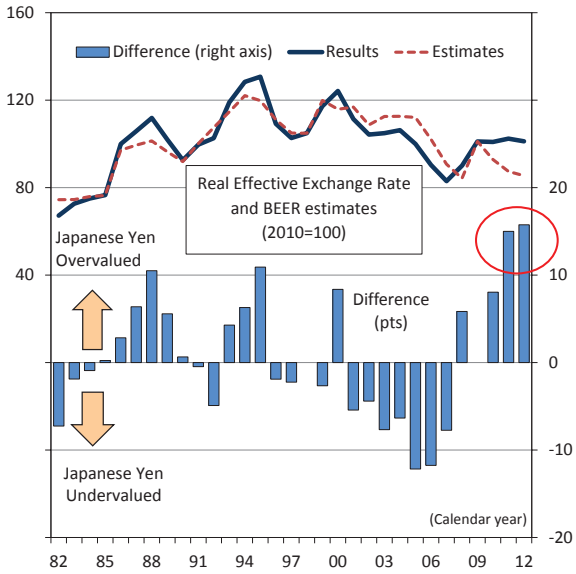
The terms of trade offer the first clue. The terms of trade are the exchange rate of exported products (domestic products) and imported products. As far as tradable goods are concerned, it is equal to the real (effective) exchange rate[3]. If the rate is 1, exports and imports equally have no advantage or disadvantage over each other. When a market rate reaches such a point, it becomes an equilibrium rate. In practice, because there are non-tradable goods, such as services, the prices of domestic products tend to become higher in developed economies (high-wage nations) where commodities prices are high (the so-called Balassa-Samuelson Effect). Moreover, differences between domestic and overseas real interest rates, the ratio of net external assets against nominal gross domestic product (GDP) and risk premiums (differences between the domestic and overseas public debt outstanding against nominal GDP) among other factors are taken into account as variables that impact on capital flows. Based on regression analysis, under the assumption that actual real exchange rates tend to settle back to an equilibrium rate that is defined by economic fundamentals as described above, the current equilibrium rate is the mid ¥90s to one U.S. dollar. Based on the results of this analysis, the yen exchange rates in 2011 and 2012 (calendar years) (around ¥80 per U.S. dollar in both years) were apparently excessively appreciated by 15% or so from the equilibrium rate (Figure 3). Moreover, compared with the equilibrium rate that is assessed based on the differences from the average rate for the period between 1980 and 2012 by focusing solely on the terms of trade, the real effective rate was overvalued by 30%. It was overvalued by 15% compared with the equilibrium rate based on the terms of trade excluding oil, coal and natural gas.

The evaluation of exchange rates varies depending on the various industries. Based on data from the Bank of Japan's *Tankan*, the Short-term Economic Survey of Enterprises in Japan, we estimated USD/yen exchange rates that ensure the average income rate by industry. As a result, each industry was found to have different appropriate exchange rate levels (Figure 4). They leaned to the weaker yen side in the materials industry, such as iron and steel and chemicals, and to the stronger yen side in the automobile and electric industries. In any case, the main export industries in Japan are not in a position where they are able to generate steady income in the face of a strong yen that exceeds a level of ¥80 to one U.S. dollar.

Taking these estimates into account, the trends of the exchange rates of the yen since Prime Minister Shinzo Abe began implementing bold economic measures (Abenomics) are able to be regarded as a return to the equilibrium rate.

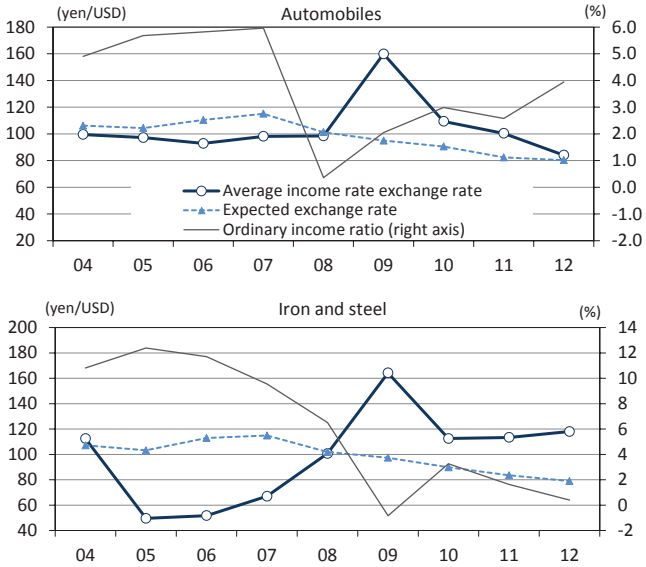
[3] The real exchange rate in this context is considered to be an index that shows the effect whereby the higher the real rates are as presented in Figure 1, the stronger a home currency is. If the real rate is high, imported products become relatively cheap compared with exported products (domestic products) (in other words, the terms of trade become more favorable).

Figure 3: Rates consistent with the fundamentals



Note: JCER estimated an equilibrium rate (Behavioral Effective Exchange Rate), based on economic fundamentals.

Figure 4: Rates that ensure the average income rate



Note: JCER estimated yen/USD rates that ensured the average sales ordinary income ratio of the years between 2004 and 2012 (excluding 2008 and 2009) based on the data from the Bank of Japan's *Tankan*.

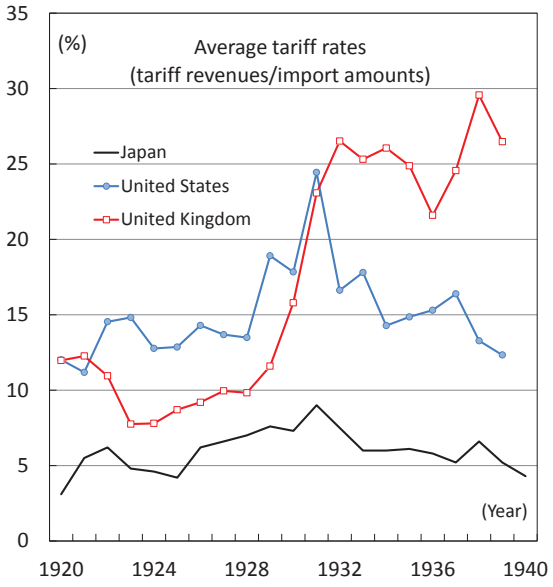
3. Monetary easing has an aspect of potentially weakening the Japanese economy. --- Criticisms that a currency war is occurring are not reasonable.

Recently, there were criticisms that the recent correction of the strong yen was causing a currency war that was adopting a beggar-thy-neighbor policy. Monetary easing shows its impact though various channels. The facilitation of the devaluation of nations' currencies is just one of the effects that can be brought about by monetary easing. In fact, monetary easing has a positive spillover effect on the global economy. The effects include the stimulation of lower global interest rates and growing exports to nations that adopt a monetary easing policy due to their improved economic situation.

It appears that the argument that a currency war is occurring is based on the understanding that the race to devalue currencies that took place during the Great Depression before World War II caused a further deterioration in the economic situation. However, close examinations of pre-war data of trade activities after the Great Depression show that there were trends of activities that reflected the development of blocks in the global economy as a result of the lowering of customs duty (Figure 5). Figure 6 shows that, in Japan's exports, those for North America were the significant variation factor until around 1930. Thereafter, however, the presence of exports to the United States and Europe declined while the relationship with regions that Japan was controlling increased. Professor Eichengreen of the University of California in the United States and other academics have pointed out that countries that maintained the gold standard (fixed exchange rates) tended to rely on protected or managed trade, such as the application of customs duty, import quotas and exchange rate control, to a higher degree[4].

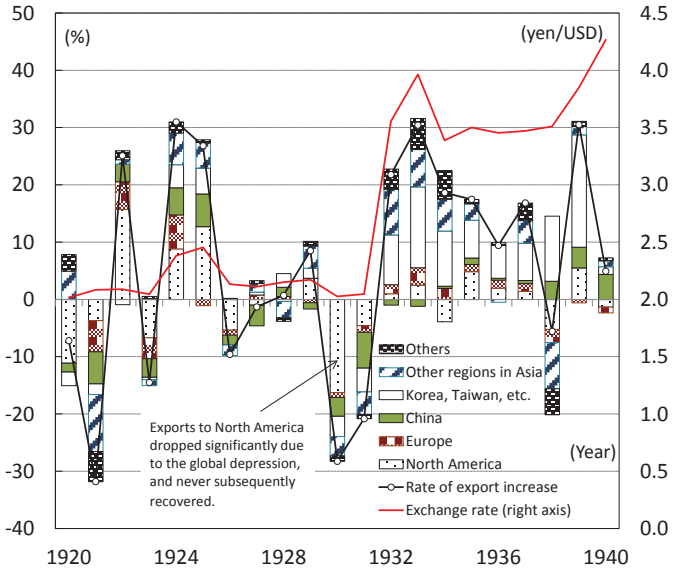
[4] Barry Eichengreen and Douglas A. Irwin, "The Slide to Protectionism in the Great Depression: Who Succumbed and Why?" The Journal of Economic History, Vol. 70, No. 4 (DECEMBER 2010), pp. 871-897

Figure 5: Tariff rates of Japan, the United States and the United Kingdom before the war



Sources: Ippei Yamazawa and Yuzo Yamamoto Long-term Economic Statistics – Trade and International Balance of Payments (Toyo Keizai Inc. 1989);
B.R. Mitchell, International Historical Statistics : The Americas 1750-1988, Europe 1750-1988 (STOCKTON PRESS 1993)

Figure 6: Japan's exporting nations and regions and the contribution ratios



Source: Ippei Yamazawa and Yuzo Yamamoto "Long-term Economic Statistics – Trade and International Balance of Payments" (Toyo Keizai Inc. 1989)

When trading with Asian countries where the weight is rising, many Japanese companies settle exports in yen and imports in U.S. dollars. Under these settlement arrangements, if the yen appreciates, the yen-denominated export prices do not change, but import prices rise. In this case, the weaker yen will potentially make the Japanese economy weaker by giving up trade benefits to its trade partners. This is why the argument of a currency war is not necessarily considered to be reasonable.

When Haruhiko Kuroda, the President of the Asian Development Bank, takes up the position of Governor of the Bank of Japan on March 19, the Bank of Japan is expected to initiate further monetary easing. This will be the first step towards ending Japan's deflationary economy, but it will be difficult to achieve the target of a 2% increase in consumer prices through monetary easing alone. It will require an expansion in demand that will lead to the narrowing of the supply-demand gap. It is important to create an environment in which, thorough the creation of new markets by introducing innovation and deregulation, companies begin to have stronger expectations for growth and decide to increase the compensation of employees, such as scheduled wages. If companies can raise the compensation of employees by 2%, the situation will become similar to the way it was in the early 1990s, when prices were rising at a rate of 2%.

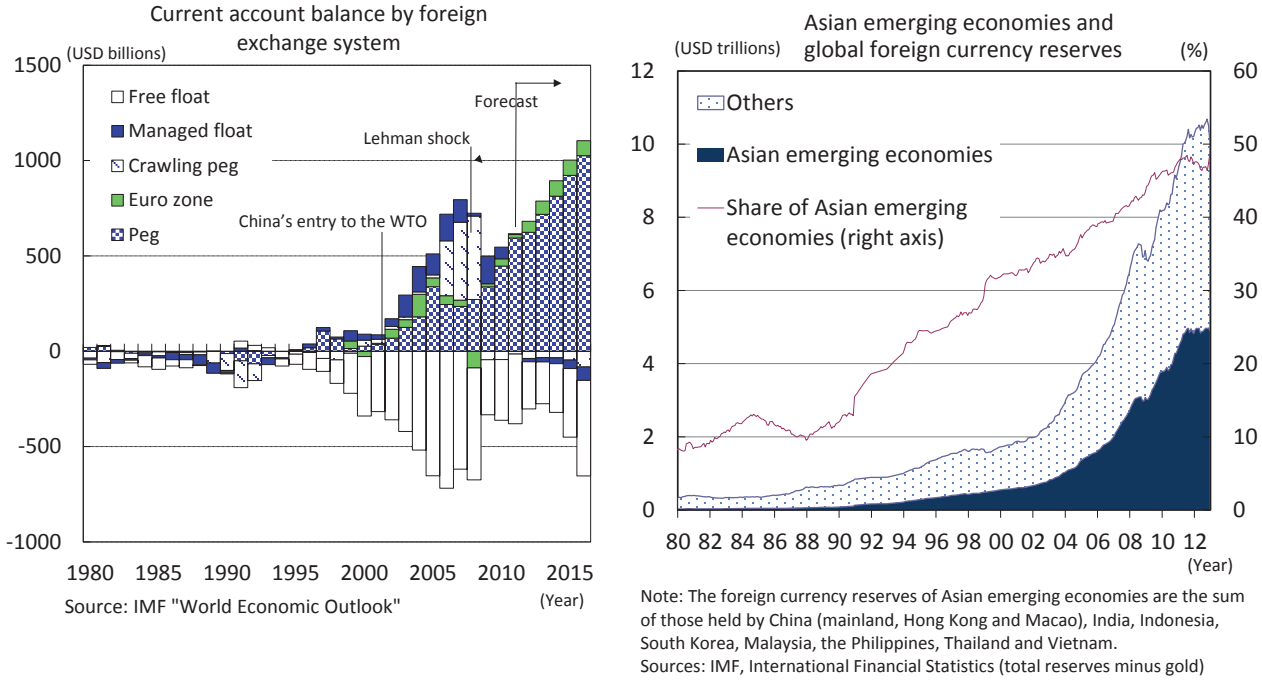
4. Asian emerging economies maintain current account surplus. --- The volatility of the yen, a safe-haven currency, increases.

One of the reasons why the yen appreciated readily was that export companies were able to adjust their operations to enable them to continue to operate even under the influence of the strong yen by

generating profits through reductions in prices and costs. However, it is believed that the global financial system had more fundamental factors.

The trigger was the Asian currency crisis that occurred in the 1990s. Countries that experienced the crisis, such as South Korea, were provided with strict conditions for receiving rescue aid from the IMF. Since then, to avoid the recurrence of such a crisis, emerging economies mainly in Asia steered their own currencies to depreciated levels against the U.S. dollar. This triggered a practice of internally saving the current account surplus (Figure 7). The incentive for this practice was that by purchasing U.S. dollars that came from the current account surplus through interventions, these emerging economies increased their foreign currency reserves as insurance to counter future crises.

Figure 7: Unevenly distributed current account surplus and foreign currency reserves



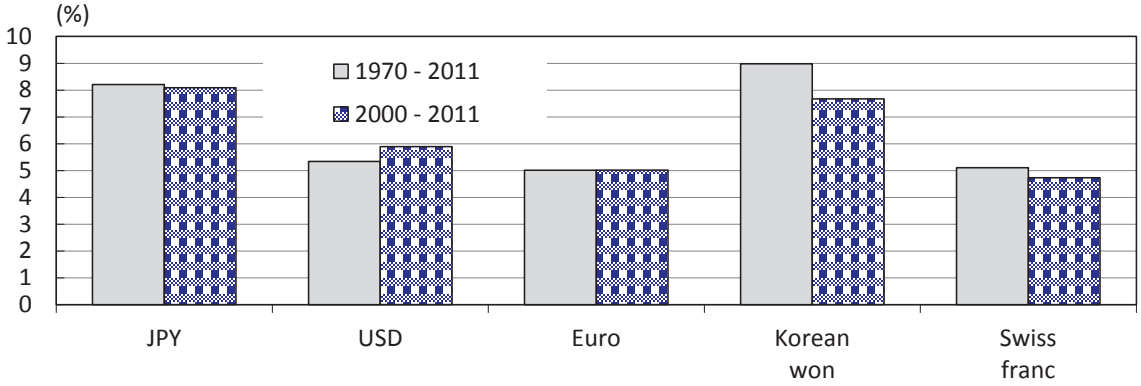
Note: The foreign currency reserves of Asian emerging economies are the sum of those held by China (mainland, Hong Kong and Macao), India, Indonesia, South Korea, Malaysia, the Philippines, Thailand and Vietnam.
Sources: IMF, International Financial Statistics (total reserves minus gold)

The present global financial system has no organization or system that will act as the lender of last resort when national debt crises and other large-scale crises occur. This is the reason why each country is working to increase its foreign currency reserves as individual insurance. Once a crisis breaks out, the market will scramble to buy currencies that are considered to be safe (safe-haven currencies) on the expectation of the sell-off of the currencies of weaker countries. The Japanese yen and Swiss Franc are such currencies. The volatility of the yen is great, as is that of the Korean won (Figure 8), which tends to rise when the yen appreciates[5]. The Swiss economy went into deflation as a direct result of the euro crisis. This shows that the appreciation of currencies triggers deflation.

[5] Takeshi Kimura and Kou Nakayama "Exchange Rate Volatility and Companies' Export Activities", 2000, Bank of Japan Monthly Research Bulletin.

If exchange rates fluctuate wildly and the volatility of sales subsequently rises, these developments negatively affect the real economy as well. In addition to a slowdown in exports and capital spending[6], companies will begin preparing for future economic shocks by increasing the proportion of non-regular employees, instead of regular employees[7]. The economy is badly affected not only by the level of the strong yen, but also the increasing volatility.

Figure 8: Exchange Rate Volatility of Major Currencies



Note: Standard deviation of monthly rates of return (annualized) of nominal effective exchange rates
Source: Bank for International Settlements, Japan Center for Economic Research

The fact that there is no market developed in Asia to trade bonds (government bonds) and that there is a shortage of safe assets also exaggerates the position of the yen as a safe-haven currency. If government bonds from a variety of countries in Asia are traded, currencies (government bonds) that can be considered to be a safe haven in the face of crises will be able to be purchased. There will then be no situation in which only the yen appreciates sharply.

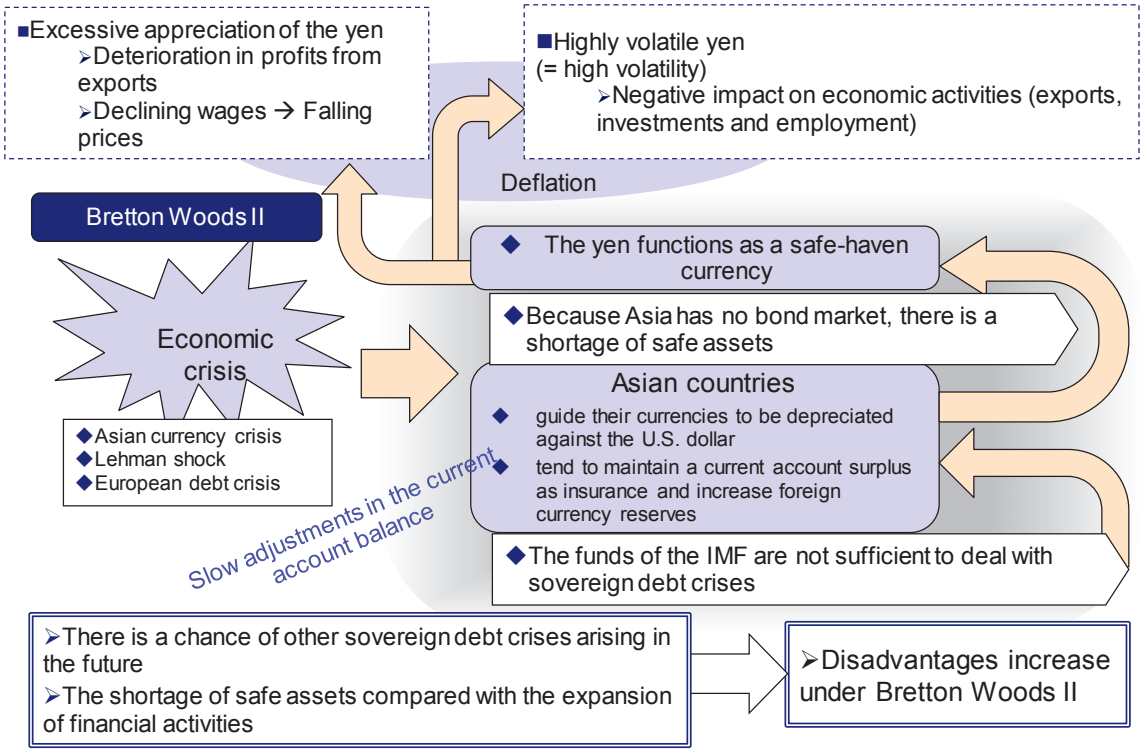
5. Growing shortage of safe assets --- Slow progress of adjustments in the current account balance

There are concerns that the shortage of safe assets will become more acute in the future. First, the number of investment-grade bonds has been declining due to deterioration in the fiscal conditions of developed economies. Second, although it is believed that emerging economies with relatively strong financing restrictions have strong demand for safe assets, they have been achieving considerable economic growth and showing an increasing demand for foreign currency reserves as insurance. On the other hand, developed economies that are expected to play a role as the main suppliers of safe assets have been experiencing slow growth, and there are limits to increasing the holding of bank deposits with government guarantees and other assets. Third, the fact that the funding capability of the IMF has been relatively reduced compared with the bloating financial market has also been attributed

[6] The impact on exports is based on the above paper by Kimura and Nakayama, 2000. Capital spending is based on Ryuzo Miyao "Japan's Capital Spending Activities: the Role of Uncertainty since the 1990s," 2000, the Institute for Monetary and Economic Studies Bank of Japan, and a number of research studies to which the paper refers.

[7] Masayuki Morikawa "Volatility, Nonstandard Employment, and Productivity," 2010, RIETI-DP, 11-J-051

Figure 9: Exchange Rate Volatility of Major Currencies



to the creation of an absence of a framework that can be considered to be insurance (the lender of last resort).

Under Bretton Woods II, in which an adequate safety net has never been established and there are countries that adopt a de facto U.S. dollar peg system, the yen often becomes subject to excessive appreciation and high volatility.

The frequent occurrence of an imbalance in the current account, a trigger of fluctuations of foreign exchange rates, is another problem with Bretton Woods II. For example, if the U.S. current account deficit is to be rectified, under normal circumstances, adjustments can be made by devaluing the U.S. dollar against other currencies. However, under Bretton Woods II, because there are a number of countries that peg the exchange rates of their currencies or lead the devaluations of their currencies against the U.S. dollar, the external competitiveness of the United States does not improve and its current account deficit continues to persist. Moreover, if inflows of funds to countries with current account deficits suddenly stop or funds begin flowing out of these countries, not only are foreign exchange rates and financial systems potentially forced to make significant adjustments, but the real economy is too. If an actual crisis occurs, and a country attempts to deal with the situation by using its foreign currency reserves, such an action may trigger the sales of assets of other countries (countries of reserve currencies), resulting in the crisis spreading.

6. Strengthening the function of the IMF as the lender of last resort --- Contributing to the stability of the bond market in Asia

Bretton Woods II, which contains unstable features as outlined above, needs to be strengthened to the sturdier Bretton Woods III.

One of the measures for achieving this goal is to strengthen the financial foundations of the IMF so that it can sufficiently exercise its function as the lender of last resort. Until now, the IMF has basically filled its loan capacity with contributions from the governments of member nations. In 2009, the IMF issued IMF bonds denominated in special drawing rights (SDRs) for the first time to diversify its methods of raising funds. However, these bonds are only allowed to be transferred to member nations of the IMF, central banks and fiscal organizations of the member nations, and not to the private sector. This means that the IMF cannot raise funds directly in the market, and it still only exists like a credit association in which its members offer the necessary funds to each other. This current system should be changed so that the IMF can raise funds from non-members in the private sector, which would mean upgrading the IMF from a fund to a bank. With such a reform, SDR-denominated bonds would be able to fully function as safe assets upon which the private sector can rely in the face of a crisis.

Moreover, it is necessary to establish a system whereby, when a crisis occurs, the IMF provides funds denominated in SDRs to the central banks of the countries of reserve currencies, and the central banks that receive the funds denominated in SDRs supply the required currencies to the market.

If the status of the IMF as the lender of last resort becomes clear and funds can be easily borrowed at the time of a crisis, it will be no longer necessary for emerging economies to maintain an excessive amount of foreign currency reserves in preparation for a financial crisis. If a country fixes the exchange rate of its currency at the undervalued level, it can generate profits through exports. However, this also means that the country is abandoning an opportunity to raise people's living standards by returning the gains from foreign exchange rates to the costs of the procurement of overseas commodities. Countries are wasting their precious savings by using them to purchase U.S. bonds, and the financial institutions in the United States reinvest funds in Asia and other countries. Under the current financial structure, even the added value of financial activities is given up to the United States.

In this sense, it is believed that the development of a bond market in Asia will contribute to not only the stability of the foreign exchange market, but also the development of the financial business in Asia. Moreover, from the perspective of the industrial structure, undervalued exchange rates can encourage emerging economies to be satisfied with being engaged in operations with low productivity, in the long run potentially delaying economic growth instead.

As one of measures for dealing with the instability of the global financial system, the JCER has been proposing the establishment of a financial crisis prevention fund of approximately ¥50 trillion, formed from the joint contributions of the Bank of Japan and the Ministry of Finance, in preparation for a crisis. If a crisis occurs overseas, the fund can purchase overseas currencies to act as a breakwater against the

sharp appreciation of the yen and the depreciation of foreign currencies. This will be a policy that will serve two purposes by benefiting both Japan and overseas countries (Pareto improvement or win-win).

7. Share foreign exchange adjustment rules --- The IMF needs to establish an expert group

The level of foreign exchange rates impacts on corporate earnings, and wild fluctuations of foreign exchange rates present risks in preparing for management plans. At present, however, rules for intervention in the foreign exchange market remain very obscure. For this reason, it is necessary to make rules for intervention in the foreign exchange market based on objective standards. First, each country shares a number of benchmarks related to the equilibrium value of foreign exchange rates and foreign exchange rates that reflect fundamentals. It should then clarify a level of divergence from the benchmarks, a level considered to be a disorderly movement of foreign exchange rates or a destructive short-term movement of foreign exchange rates, to which the intervention is permitted. To share and discuss these rules, the IMF needs to establish an expert group.

For example, in accordance with the behavioral equilibrium exchange rate (BEER) estimated by the JCER, the equilibrium exchange rate for 2012 was the mid ¥90s, and the real effective exchange rate was overvalued by approximately 15% from the equilibrium value. Moreover, the real effective exchange rate was overvalued by between 15% and 30% from the equilibrium exchange rate based on the terms of trade. To stop rapid fluctuations of foreign exchange rates that distort corporate activities, it is suggested that Japan propose the establishment of rules for intervention based on objective standards as global standards.

Correcting the excessive appreciation of the yen and controlling immoderate fluctuations will be growth strategies that will end deflation and stimulate medium- to long-term growth. We advocate the establishment of a framework that will support the growth of the Japanese and global economies toward 2050 by strengthening the currency system, primarily through the reform of the IMF and the clarification of the rules for intervention.

8. Global financial system toward 2050

Finally, looking at the global currency system toward 2050, the system will shift to a multiple reserve currency system in which the euro, pound sterling, Japanese yen, yuan and SDRs, centered on the U.S. dollar, will function as reserve currencies (the 1+4+1 system). The U.S. dollar and SDRs that supplement the U.S. dollar are likely to serve as global reserve assets, while the euro and pound sterling will be used as regional reserve currencies, and the yen and yuan will have this function in Asia. Through this progress, the IMF is expected to strengthen its functions as the lender of last resort to its member nations.