

Masaaki Shirakawa: Global imbalances and current account imbalances

Speech by Mr Masaaki Shirakawa, Governor of the Bank of Japan, at the Banque de France Financial Stability Launch Event, Paris, 18 February 2011.

* * *

The debate surrounding global imbalances gained increasing attention after the turn of the century as the United States' current account deficit ballooned, while the current account surplus of some emerging market countries, notably China, increased dramatically. Some have argued that global imbalances were one of the key causes of the recent credit bubble in the United States and hence the global financial crisis. Thus, as the world economy recovers from the severe recession, the possible expansion of global imbalances is receiving renewed attention. If global imbalances were to become unsustainable, it could derail the nascent global economic recovery. Against this background, the G20 Leaders have made "external sustainability" a key item on the G20 agenda for 2011.

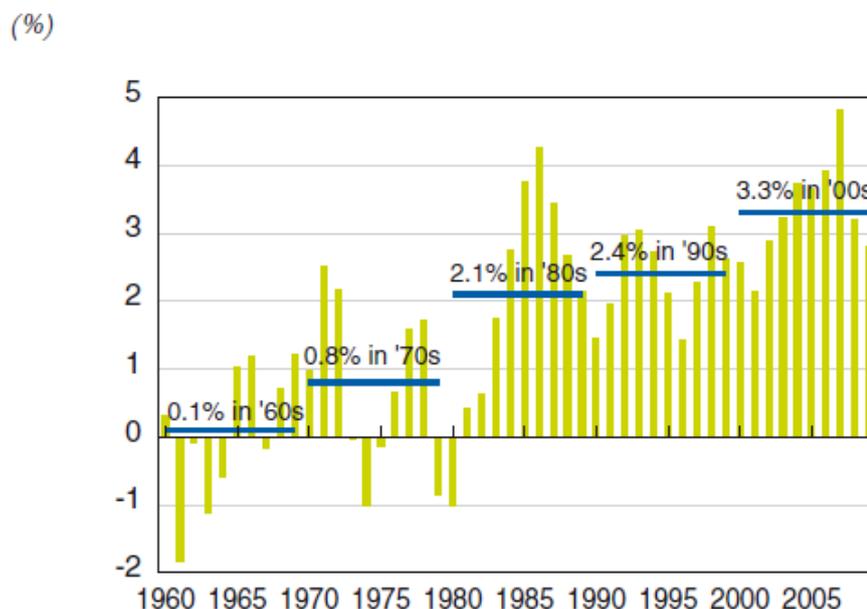
The global imbalance debate contains a host of issues. How much emphasis should be put on adjusting current account imbalances *per se*? What are the causes of current account imbalances? Does the fact that the largest deficit country provides the key reserve currency delay the adjustment process, as the incentive to reduce deficits is weaker? How much does the fact that some current account surplus countries have fixed or relatively inflexible exchange rate systems influence current account imbalances? The introduction of new reserve assets would likely reduce the demand for US dollars, but would it reduce the precautionary demand for reserves, thereby reducing current account imbalances? These issues are closely linked to the broader discussions on the international monetary system and remind us of the original Bretton Woods debate between White and Keynes almost 70 years ago.

Among the various topics, this paper will focus on the appropriateness of using current account surpluses and deficits as an indicator for assessing the sustainability of global imbalances. In the first section, I will review Japan's own experience, especially during the 1980s when current account surpluses increased significantly and the country struggled to deal with external pressures to reduce current account surpluses, and in the second section look at experiences from the current global crisis. The third section will draw some lessons from the past and present. The fourth section will consider issues which need to be taken into consideration as we work to avoid the next global crisis, and the fifth and final section identifies some challenges for policymakers.

1. The Japanese experience

Looking back at the developments of Japan's current account balance over the last fifty years, with the rapid improvement in the competitiveness of the manufacturing sector, Japan began to continuously record trade surpluses and as a result current account surpluses starting from the mid-1960s (Chart 1). The only exceptions were the periods 1973–1975 and 1979–1980, when surging oil prices due to the first and second oil crises led to a fall in the trade surplus.

Chart 1
Current account balance of Japan
 Ratio to nominal GDP



Sources: Bank of Japan, "Economic Statistics of Japan"; CEIC.

Entering the 1980s, Japan's trade and current account surplus increased sharply and this was accompanied by increased external pressure, both bilaterally and multilaterally, to reduce Japan's surplus. In the first half of the 1980s, the focus was on constraining exports in specific sectors such as the voluntary restraints on automobile exports to the United States, and on "the opening up of Japan's domestic markets" to overseas products and services. With regard to liberalisation of financial markets, Japan's Ministry of Finance and the US Treasury set up the "Yen-Dollar Committee" in November 1983. The Committee released its report in May 1984, which provided a detailed plan to liberalise Japan's financial and capital markets and to internationalise the yen. Meanwhile, the yen which had briefly reached 177 yen to the dollar in the late 1970s, generally moved in the range of 200 to 250 yen to the dollar during the first half of the 1980s, and the view that the yen should strengthen to reduce Japan's trade and current account surplus mounted among its major trading partners. In September 1985, the G5 Ministers of Finance and Central Bank Governors announced in the "Plaza Accord"¹ that "there are large imbalances in external positions which pose potential problems" and "agreed that exchange rates should play a role in adjusting external imbalances". As is well acknowledged, based on this agreement the G5 began to intervene jointly in the foreign exchange markets to bring down the value of the dollar. The five countries also made individual commitments as a part of the Plaza Accord, and Japan, among various measures, committed to "further opening up of Japan's domestic market to foreign goods and services" and noted that "efforts to stimulate demand will focus on increasing consumption and investment through measures to enlarge consumer and mortgage credit markets". In the area of monetary policy, Japan agreed to "flexible management of monetary policy with due attention to the yen rate". As a result of this agreement and ensuing intervention, the yen which had been around 240 yen to the dollar before the Plaza Accord appreciated sharply and touched 152 yen to the dollar in September 1986. The ratio-to-GDP of

¹ "Announcement of the Ministers of Finance and Central Bank Governors of France, Germany, Japan, the United Kingdom and the United States" (September 22, 1985).

Japan's current account surplus peaked at 4.2% in 1986 and began to decline thereafter.² However, Japan's trade surplus with its major trading partners remained at high levels, and the view gradually took hold that exchange rate adjustments alone cannot significantly reduce trade imbalances. External pressure on Japan to reduce its surplus began to focus more on the expansion of domestic demand. In February 1987, at a meeting in Paris, the G6 Finance Ministers and Central Bank Governors released the "Louvre Accord".³ The Ministers and Governors "agreed that the substantial exchange rate changes since the Plaza Agreement will increasingly contribute to reducing external imbalances and have now brought their currencies within ranges broadly consistent with underlying economic fundamentals" and they also "agreed to cooperate closely to foster stability of exchange rates around current levels". The Ministers and Governors also recognised "that the large trade and current account imbalances of some countries pose serious economic and political risks". Each member once again made specific commitments and Japan agreed to "follow monetary and fiscal policies which will help to expand domestic demand and thereby contribute to reducing the external surplus". Additionally, the Bank of Japan "announced that it will reduce its discount rate by one half percent" to 2.5%.

Although the Japanese economy grew rapidly at an annual pace of 4.7% between 1986 and 1988, and asset prices showed double digit increases, the very low policy rate of 2.5% was maintained for over two years until May 1989, as inflation rates remained stable at low levels.⁴ This period of a very low policy rate was much longer than in Germany which maintained its policy rate at 2.5% for less than a year.⁵ In spite of repeated intervention by the major countries following the Louvre Accord, the yen continued to strengthen against the dollar reaching 121 yen to the dollar in November 1988, raising concerns about a slowdown in the domestic economy, mainly in the export-related sectors. In the meantime, bilateral pressure from the United States continued. The US Congress passed an omnibus trade bill⁶ in 1988 and the following year Japan was identified by the US government as one of the countries conducting unfair trade practices.⁷ In 1989, the Structural Impediments Initiative began between the US and Japanese governments. A joint report was finalised in June 1990 and the Japanese government committed to instituting a public investment program totaling as much as JPY 430 trillion (roughly 100% of nominal GDP) over a ten year period.⁸ Japan's current account surplus dropped to 1.4% of GDP in 1990, but as the bubble burst and economic growth slowed, the ratio of current account surplus to GDP rose once again and averaged 2.4% during the 1990s.

More recently Japan's current surplus has averaged 3.3% of GDP since 2000. However, its composition has changed significantly. In the past, Japan's current account surplus was generally a reflection of its trade surplus (Chart 2). But during this decade, the share of the trade surplus has declined and in recent years three-quarters of the current account surplus is taken up by the income account surplus. The large income account surplus is to a large extent predetermined by Japan's accumulation of external assets over the years through portfolio and direct investments.

² Due in part to the initial J-curve effect, there was a time lag before the surplus began to actually decrease.

³ "Statement of the G6 Finance Ministers and Central Bank Governors" (February 22, 1987).

⁴ The average year-on-year change in CPI between 1986 and 1988 was 0.5%.

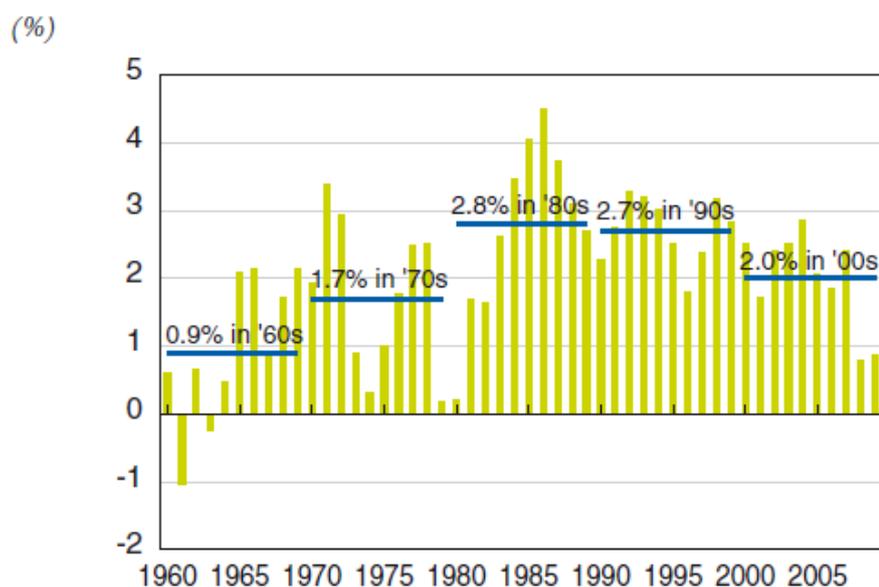
⁵ The Bundesbank reduced its discount rate from 3.0% to 2.5% in December 1987 and raised it again to 3.0% in July 1988. By the time the Bank of Japan raised its discount rate to 3.0% in May 1989, the policy rate in Germany was 4.5%.

⁶ "Omnibus Foreign Trade and Competitiveness Act of 1988".

⁷ Brazil and India were also designated.

⁸ According to the report (Japan Structural Impediments Initiatives Joint Report), public investment during the previous decade (Fiscal 1981 to 1990) was estimated at JPY 263 trillion.

Chart 2
Trade balance of Japan
 Ratio to nominal GDP



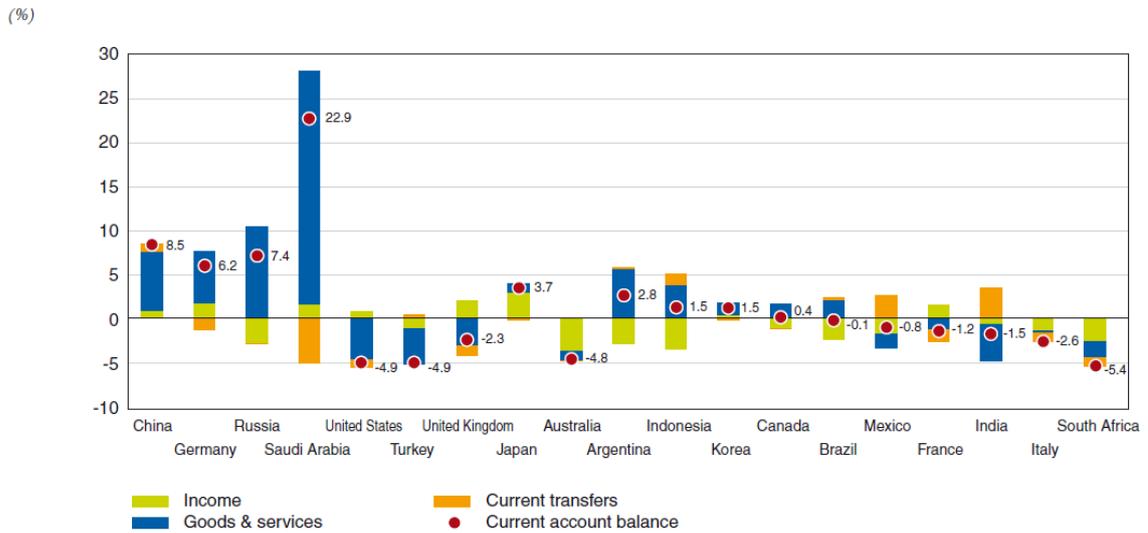
Source: CEIC.

What does the Japanese experience tell us?

First, how effective were exchange rate adjustments and other macroeconomic policies in reducing current account imbalances? They surely helped in bringing about a reduction in the trade surplus as part of cyclical dynamics, and thus a decrease of the current account surplus. However, aside from cyclical components, underlying current account trends were little changed. The attempt to make further adjustments through macroeconomic policies, especially through prolonged accommodative fiscal and monetary policy was unsuccessful. It rather had the detrimental side-effect of being one of the factors that fueled the expansion of the bubble and hence led afterwards to the serious predicament.

Incidentally, depending on the structure of the current account balance, surpluses and deficits can be to a large extent predetermined. In Japan's case, as mentioned above, the large income account surplus has driven the current account surplus in recent years. When we look across the G20 countries, this is not an isolated case. Australia's current account deficit can to a large extent be explained by its income account deficit. The trade balance does have a large share of the current account in many countries, but other components such as the income account often have non-negligible and sometimes significant impact on the overall picture of the current account balance (Chart 3). This is a reflection of the structure of their economies and needs to be well understood when assessing the evolution of the current account.

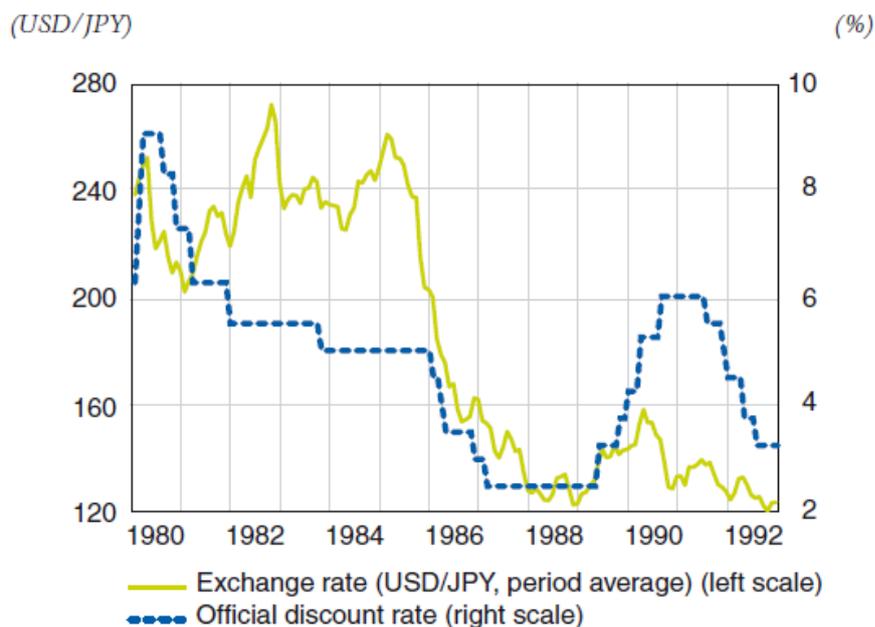
Chart 3
Current account balances of G20 members
 Ratios to nominal GDP – 2005–2009 average



Note: All figures are simple averages. Data for 2009 are estimates.
 Sources: IMF, "World Economic Outlook"; CEIC.

Second, was the current account surplus indicative of “imbalances”? The current account surplus may have been indicative of “imbalances”, but does not provide sufficiently granular information to make an effective assessment. The emergence of unsustainable imbalances seems to be better and more clearly captured through other indicators such as large jumps in asset prices and the rapid expansion in corporate sector debt (Charts 4 and 5). Japan’s continuously large current account surplus itself did not provide clear hints with regard to the bubbles that turned out to be the root cause of serious damage to economic stability.

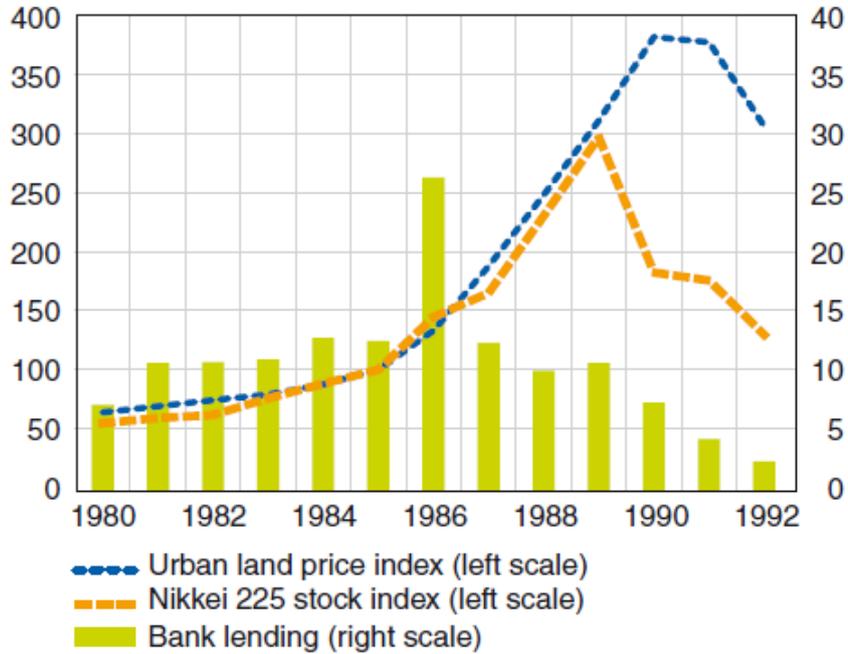
Chart 4
Major economic indicators of Japan (1980–1992)
 Exchange rate and official discount rate



Asset prices and bank lending

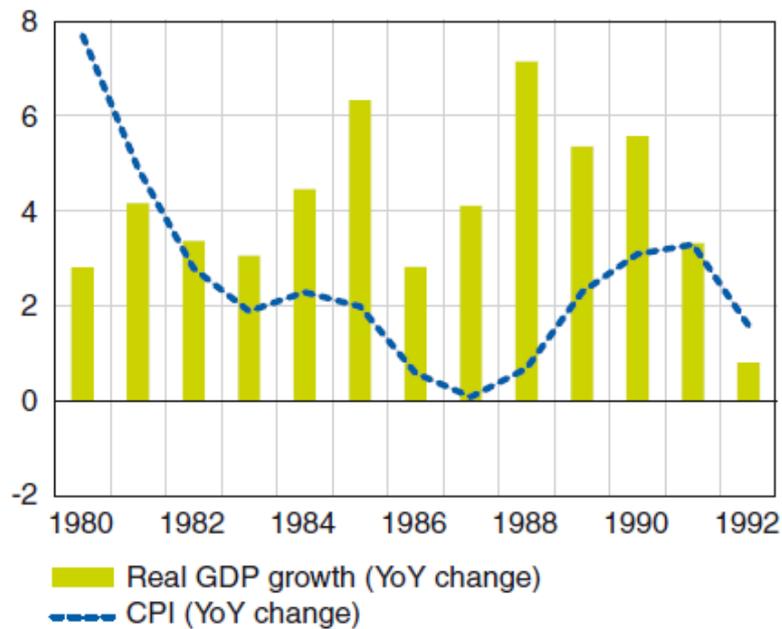
(1985 = 100)

(YoY change, %)



Real GDP and CPI

(%)

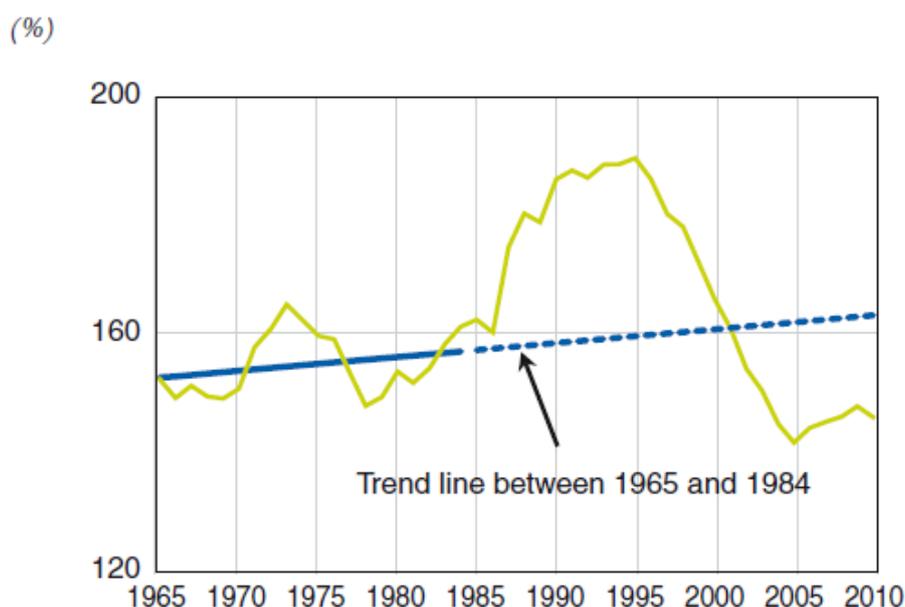


Sources: Ministry of Internal Affairs and Communications, "Consumer Price Index"; CEIC; Bank of Japan, "Economic Statistics Annual".

Chart 5

Japan's corporate sector debt

Ratio to nominal GDP



Sources: Bank of Japan, "Flow of Funds"; Cabinet Office, "National Accounts".

Third, how does exchange rate policy influence the overall economy? An excessive focus on preventing the appreciation of the currency and on easing the negative effects of exchange rate appreciation fostered expectations that a low interest rate environment would continue. This became one of the factors that led to the emergence of the bubble, thereby impairing the stability of the economy. The accommodative monetary policy following the Louvre Accord, reflected the external pressure to reduce the current account surplus as well as domestic concerns about the negative impact of the appreciation of the yen on the Japanese economy.

2. The recent global financial crisis

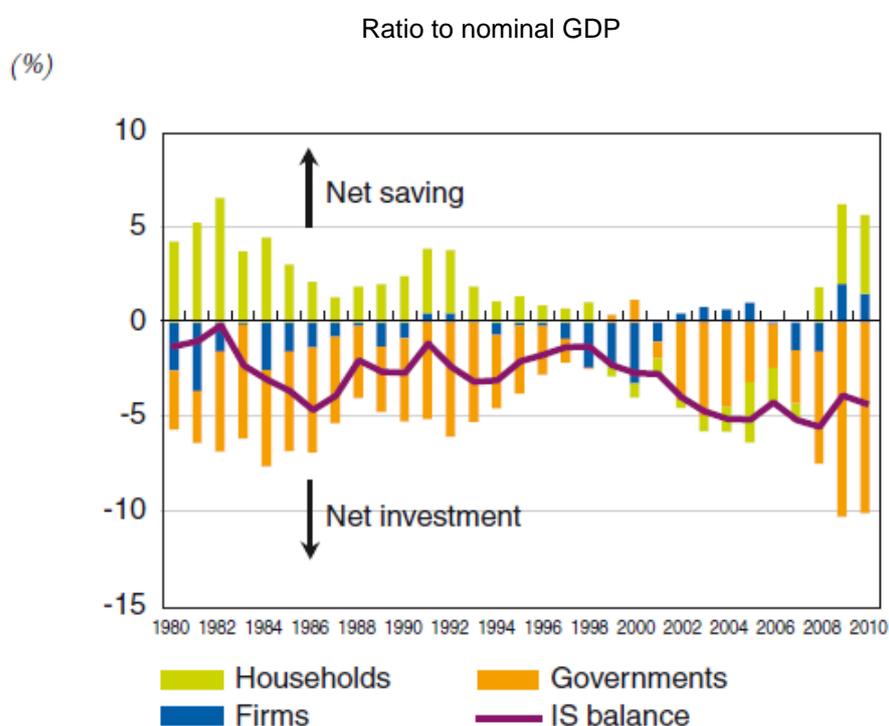
In the run up to the recent global financial crisis in the mid-2000s, concerns were raised that a disorderly adjustment would occur through a sharp fall in the value of the dollar and a jump in long-term US interest rates. Such a view focused on the widening US current account deficit and the large increase in foreign exchange reserves in emerging market countries, and the possibility that such countries may at some point become reluctant to continue financing the US deficit. However, as we all know, what came to pass was quite different. At the outset of the financial crisis, as market participants became extremely risk averse, a global flight-to-quality occurred. US long-term rates fell substantially as demand for US Treasuries increased, and the dollar strengthened against most other currencies.

This experience, similar to the Japanese experience, also highlights the need to look beyond current account balances and identify what constitutes underlying imbalances. Then the question becomes "How can we identify the imbalances or distortions which could lead to unsustainable global imbalances? What type of information do we need to focus our attention on which is not sufficiently captured in current account data?". Taking into account the additional experiences from the current financial crisis, I would like to point out two areas where attention should be focused.

2.1 Build-up of excess leverage

First, the build-up of excess leverage in the economy. When we look at long-term trends in ratio-to-GDP of the savings and investment balance which is equivalent to the current account balance (Chart 6), one can notice that the net negative savings in the United States widens in the 2000s. These changes in themselves do not tell us whether such changes are sustainable or not. However, when we additionally examine the developments in household debt, we can see large deviations from longer-term trends (Chart 7). Such developments are similar to the Japanese situation in the 1980s, only the sector where excess leverage materialised is different. In Japan, the build-up was in the corporate sector (Chart 5). Certainly, large deviations from longer-term trends in themselves are not definitive, but are a strong indication that unsustainable financial imbalances are likely to be accumulating. What is important is to have both an economy-wide assessment and assessment at a somewhat more disaggregated level, for example at the sector level. This would enable policymakers to obtain a better sense of where imbalances may be accumulating.

Chart 6
Investment-savings balance of the United States



Note: IS balance + statistical discrepancy = current account balance.

Source: Bureau of Economic Analysis, "National Income and Product Account".

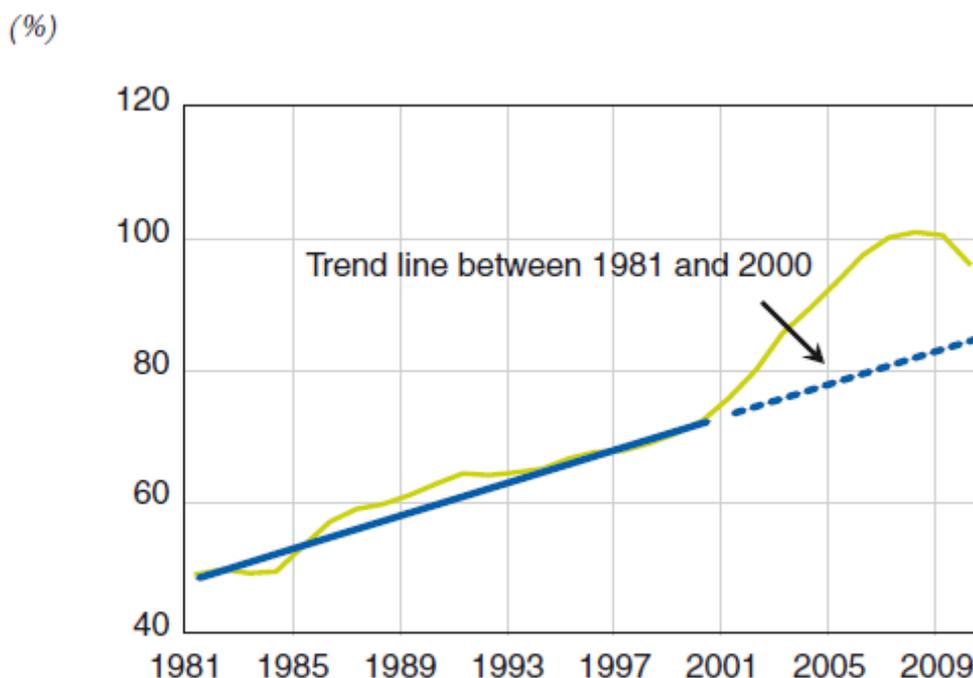
It is also important to understand the mechanism of how credit, which supports the build-up of leverage, is provided. Before the current crisis, special investment vehicles (SIVs) set up by US and European banks frequently purchased various structured products originated by the sponsoring bank. Once the subprime loan market collapsed, the credit and liquidity risks of the SIVs ended up with the sponsoring institutions, as reputational risks forced them to extend support. A similar situation had evolved in Japan during its bubble period in the late 1980s. Non-bank financial companies were used aggressively to expand residential and commercial real estate lending often to circumvent regulatory limits, especially after regulators introduced overall limits on bank lending growth to these sectors. Although such

non-bank companies were structured so that they were not consolidated on to banks' balance sheets, most of the losses ended up with the parent banks. Both the recent US and Japanese experience highlight the need to look beyond the banking system. The shadow banking system played a key role in both countries.

Chart 7

United States' household sector debt

Ratio to nominal GDP



Source: Federal Reserve, "Flow of Funds Accounts".

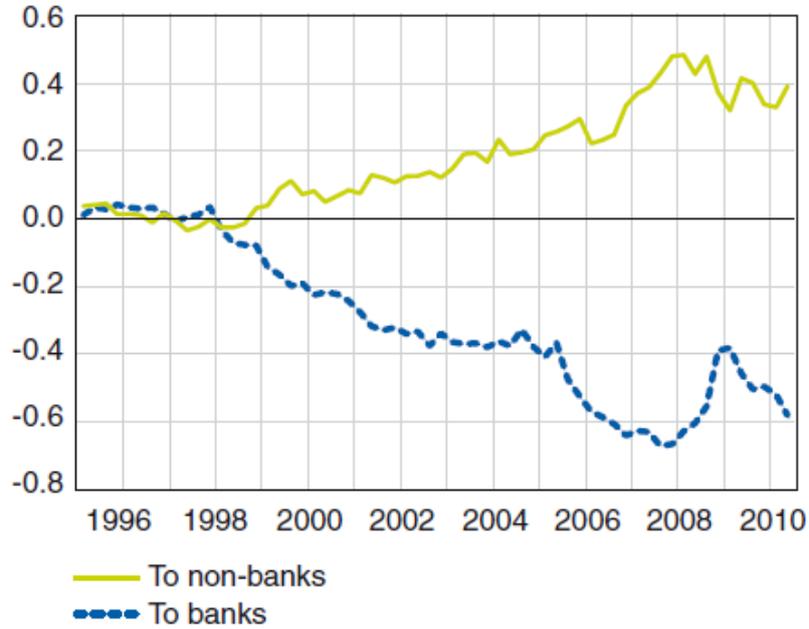
2.2 Gross capital flows and risk profile of financial institutions

Second, gross capital flows. The net capital flows corresponding to current account balances do not provide us with sufficient information to locate possible sources of unsustainable imbalances. It will need to be supplemented with other sources of data. A case in point would be recent developments in the euro area. The current account of the euro area has been generally balanced during the past decade. But BIS banking statistics show that euro area banks actively intermediated US dollar funds from the international banking system to the non-banking sector in the United States (Chart 8). Although the netted amount was small, the accumulation of risks such as maturity mismatches, currency mismatches and credit risks, which increased on a gross basis was substantial.

Chart 8

Euro area banks' cross-border US dollar claims

(USD trillions)



Note: Latest data are as of April-June, 2010.

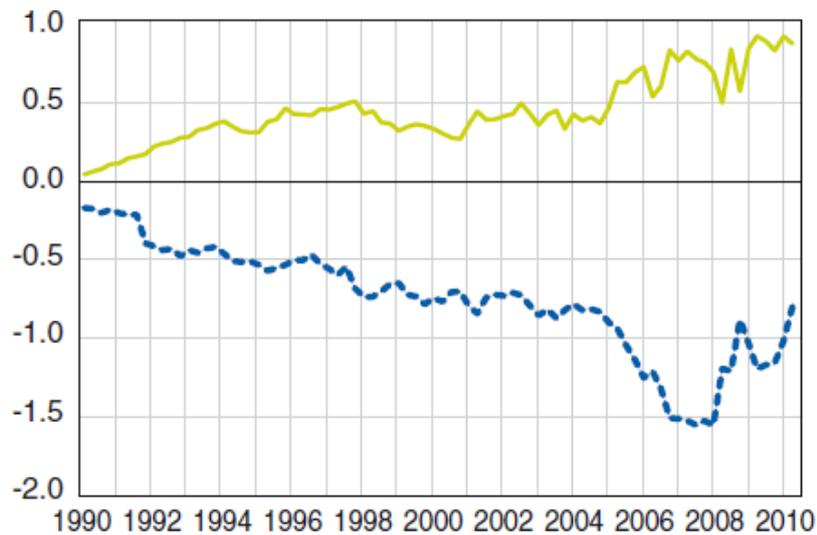
Source: BIS, "International Locational Banking Statistics".

Chart 9

BIS reporting banks' cross-border claims by currency

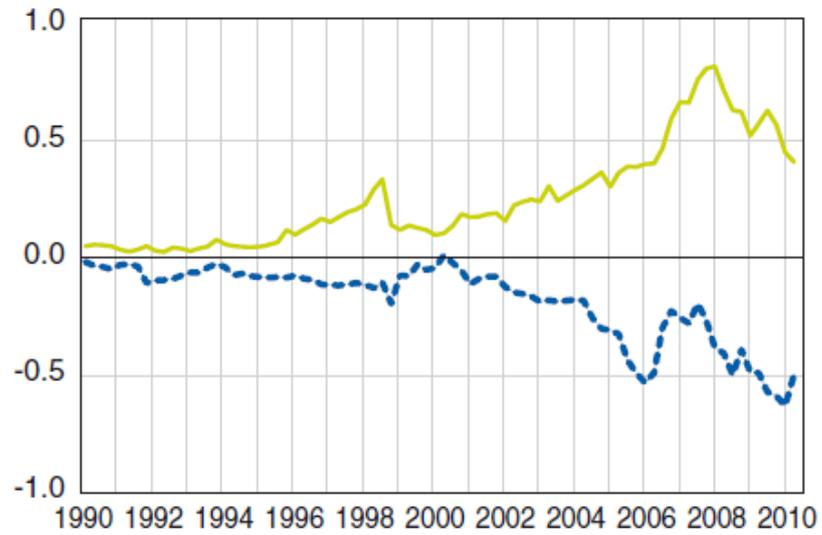
US dollar

(USD trillions)



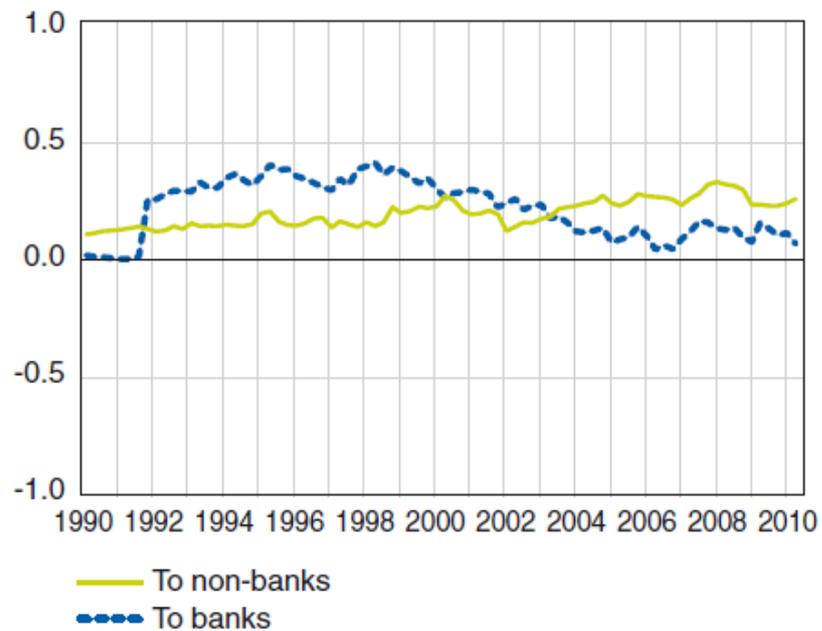
Euro

(USD trillions)



Yen

(USD trillions)



Note: Latest data are as of April-June, 2010.

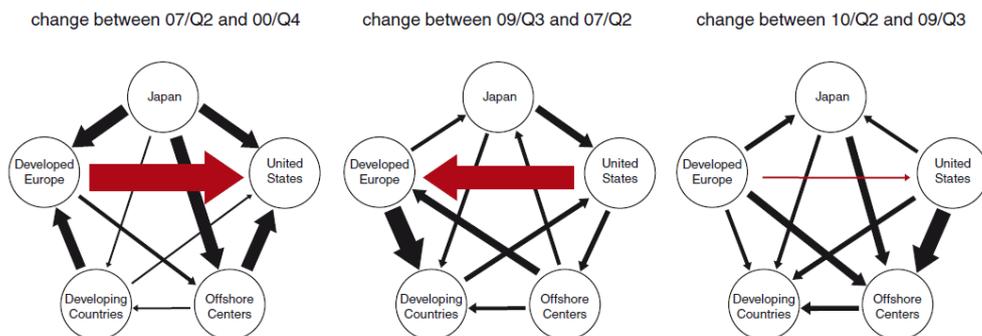
Source: BIS, "International Locational Banking Statistics".

Globally, banks, especially European banks, had been borrowing short-term dollar funds in the interbank market and investing in long-term assets. The dollar funding risk in the international banking system had been rapidly increasing in the mid-2000s, becoming substantially larger than the funding risk for other major currencies (Chart 9). As the crisis unfolded, counterparty credit concerns increased in global financial markets and banks began to hoard dollar liquidity. The US dollar interbank funding market froze up and many market participants struggled to obtain dollars. Serious tension continued in the financial markets until central banks including the Bank of Japan began to provide US dollars through bi-lateral swap lines arranged with the US Federal Reserve.

BIS banking statistics and other sources of information help us fill the gaps in the current account data. There was a large inflow of funds from banks in advanced European countries before the crisis, which were rapidly withdrawn after the summer of 2007 (Chart 10). BIS reporting banks' overall cross-border exposures to the United States have fallen more than 20% since reaching its peak in first quarter of 2008, and especially exposures to the private sector, which include investments in structured products, have fallen nearly 30% (Chart 11).

Chart 10

Cross-border flows through the international banking system



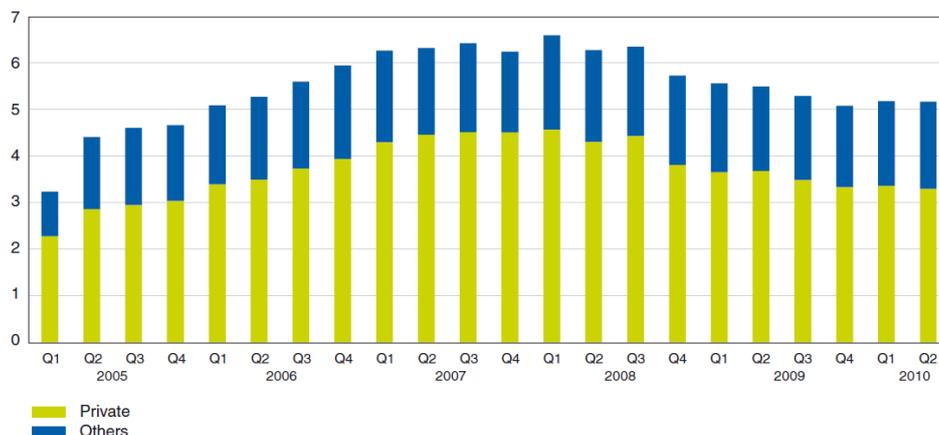
Note: Each arrow shows net changes in claims among banks, pointing from creditor to debtor between two regions. The thickness of each arrow indicates the size of the flow.

Source: BIS, "International Locational Banking Statistics".

Chart 11

BIS reporting banks' total foreign claims on the United States by sector

(USD trillions)



Note: Ultimate risk basis. Latest data are as of April-June, 2010.

Source: BIS, "Consolidated Banking Statistics".

By obtaining micro-level information on financial institutions, central banks and other supervisory and regulatory authorities can assess the true risk profile of individual institutions. It also provides the basis for grasping the distribution of risks at various levels of aggregation, including at the overall macro-level. It will be important to develop a macro-level understanding of where risks are concentrated in the financial system as well as the possible interlinkages among market participants.

3. Assessing global imbalances

Current account balances provide us with helpful information on the state of the economy. At the same time, the current crisis as well as other past experience show the potential risks of simply using current account balances as an indicator of unsustainable global imbalances. Although not an exhaustive list, I would like to highlight three points as lessons from current and past experiences.

First, surpluses and deficits emerge as a result of the voluntary choices of economic entities and thus should not be automatically deemed as problematic. Trends in current account surpluses and deficits are the reflection of longer-term trends in savings-investment activities which are strongly influenced by economic developments and demographics. Current account surpluses and deficits will only lead to problems when they become unsustainable, and thus a careful overall assessment is required.

Second, distinguishing between the structural and cyclical components of the Current account balance is often a difficult task. Trying to adjust the structural component through macroeconomic policy and exchange rate policy entails the risk of causing the development of financial imbalances which may destabilise the economy. A narrow policy focus on current accounts *per se* can be counter-productive.

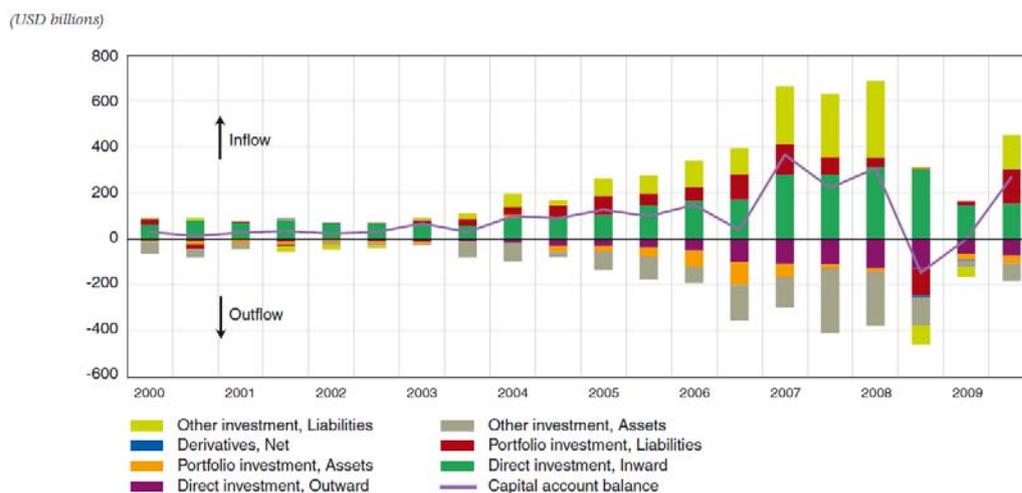
Third, central banks and other authorities need to assess the possible emergence of unsustainable imbalances using a wide range of indicators such as asset prices, leverage, gross capital flows and information on risk pricing and risk profiles of financial institutions. Current account data only provide us with a partial picture. In the past, when the cross-border flow of goods and services dominated interrelationship among economies, assessing current account and trade balances would give us a relatively good picture of emerging external imbalances. But the size of global capital flows has dramatically increased and the speed with which capital moves to and from one country to another has accelerated as well. The growing use of derivatives adds another layer of complexity. The approach for assessing global imbalances needs to change accordingly.

4. Preparing for new types of crises

Mankind has continuously searched for “monetary anchors” or “monetary benchmarks”. This endeavor has been a repetition of initial success followed by failure or outdatedness as a result of rapid changes in the economic and financial system. In the realm of monetary policy, money supply targeting was often used in the 1970s in many advanced economies. However, with rapid financial innovation, its relationship with inflation developments became unstable and was eventually abandoned. Inflation targeting emerged as a new monetary policy framework in the 1990s, but the challenges in its effective implementation have surfaced as bubbles developed in the run-up to the current financial crisis, especially in identifying imbalances when they appear in forms other than inflation of goods and services. With regard to the international monetary system, we have moved in the past from the gold standard to managed floating exchange rate systems. Currently, the major currencies are free floating, but many countries still have fixed or managed floating regimes. Current account imbalances can be one of many possible indicators. But there is no single indicator which can identify emerging imbalances, let alone unsustainable global imbalances. A sufficiently flexible policy framework which can adapt to rapidly changing economic and

financial conditions is required. The process through which crises unfold is unique for each crisis. We must learn from past experience, but strategies for the last war do not assure success in future battles. Keeping an open mind is important.

Chart 12
Financial account of emerging countries



Note: Total of the following 30 countries (China, Indonesia, Malaysia, Thailand, Philippines, Viet Nam, Bangladesh, India, Pakistan, Sri Lanka, Kazakhstan, Hungary, Bulgaria, Romania, Poland, Ukraine, Russia, Turkey, Iceland, Argentina, Mexico, Brazil, Paraguay, Chile, Peru, Colombia, Uruguay, Venezuela, South Africa, and Saudi Arabia). Until 2005, data for Saudi Arabia are not included. Charts are semi-annual basis.

Source: CEIC.

As policymakers work to develop a framework for identifying and dealing with unsustainable global imbalances in a rapidly evolving economic and financial environment, they need to be cognizant of three key elements: two longer-term trends and one element unique to the current environment.

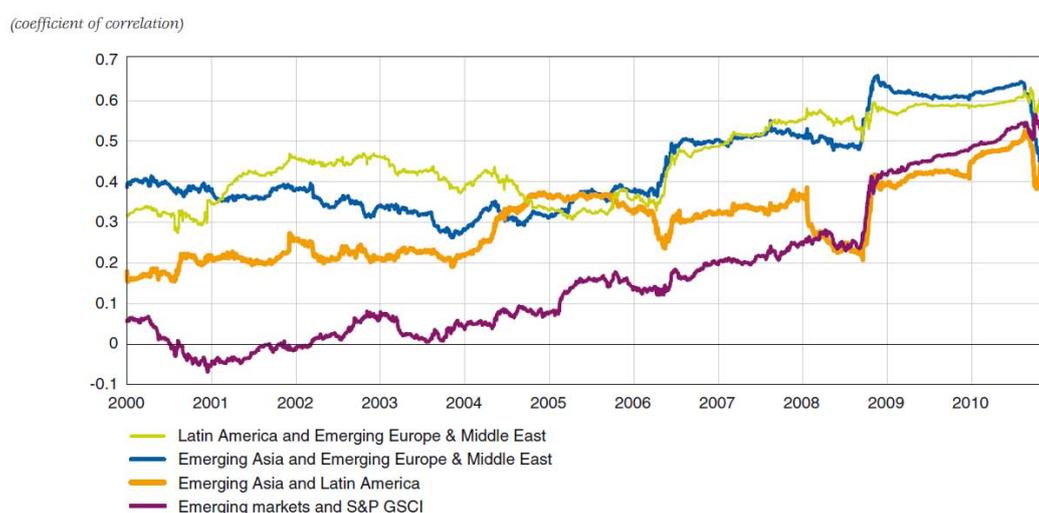
First, though needless to say, we are experiencing a further acceleration in economic and financial globalisation. In addition, due to technological advances, the interlinkages between financial markets and among market participants are becoming increasingly complex. Shocks in one part of the world will swiftly spillover to other parts and often through unexpected channels. The effects of the risk-taking channel of monetary policy can be larger and more widespread than in the past. Search-for-yield behaviour by global investors is one such example.

Second, the share of emerging market countries in the world economy is increasing. Their share in the world economy which was 20% in 1990 and 2000 has increased to 31% in 2009 on a current price basis, and they are expected to account for seven-tenths of global economic growth in 2010. Emerging economies have become the drivers of global growth, and consequently their responsibilities as members of the global community have increased. For example, it needs to be recognised that the implications of inflexible exchange rates in major emerging economies on the global economy have become larger. The perspective of an orderly structural adjustment process for domestic industries may warrant a gradual shift from fixed exchange rates to a more flexible exchange rate system and a controlled appreciation of the home currency. But, at the same time, policymakers in emerging economies need to recognise that such a policy both hampers the flexible implementation of domestic macroeconomic policies including monetary policy, and exports the cost of the adjustment to other countries. If other countries follow and take similar measures to delay the appreciation of their currencies, the impact on economies which allow flexible exchange rate movements could be magnified.

Third, we are now in the unique situation where some advanced economies are recovering from the aftermath of the bursting of the bubble, and as a result, the world is facing an uneven pace of recovery. On the one hand, emerging economies are continuing their robust growth. On the other hand, due in part to the balance-sheet adjustment process following the bursting of the bubble in some countries, recovery in advanced economies is slow. Central banks in advanced economies have introduced unconventional measures to implement extremely accommodative monetary policy. As advanced economies face the zero lower bound in interest rates and a weak transmission mechanism constrained by balance-sheet adjustment needs, monetary easing through the traditional interest rate or credit channel is not working to the extent normally expected. Instead, in an integrated global financial system and with the divergent pace of economic growth, capital is rapidly flowing into high growth emerging economies which do not face such constraints (Chart 12). The risk-taking channel is working more effectively at the global level.

Chart 13

Correlations among emerging market equity and commodity indexes



Note: Correlations are derived from the MSCI (Morgan Stanley Capital International) index of each region and S&P GSCI (Goldman Sachs Commodity Index). Each point shows the level of correlations of daily returns from the last 500 trading days. Latest date are as of November 30, 2010.

Source: Bloomberg.

Since the emerging economies are not hampered by the aftereffects of the bursting of the bubble, the stimulative effects of such capital inflows could be unexpectedly large. With short-term interest rates at very low levels in advanced economies, carry trade activity has picked up and correlation among emerging economy equity markets as well as between emerging equity markets and commodity markets is rising (Chart 13). If such capital flows lead to the development of bubbles and abrupt reversals in the future, the negative repercussions would not only be harmful for emerging economies, but also for the global economy.

5. Challenges for policymakers

In order to prevent the emergence of unsustainable global imbalances, policymakers need to dig down beyond changes in the current account balance to capture underlying imbalances. A key sea change that we are witnessing is that through rapid globalisation the identification of harmful imbalances and implementing rebalancing measures can no longer be a purely domestic process.

In formulating macroeconomic policy, the traditional emphasis was to ensure domestic stability or to put one's house in order. However, with the deepening of globalisation, the simple sum of each country's policy action may not necessarily achieve an optimal outcome at the global level. Policymakers in both advanced and emerging economies need to rethink the meaning of domestic stability. The direct impact of policy measures on the domestic economy does not provide a comprehensive view. It has become ever more important to review the spillover effects of their policies across borders which will also reverberate back to each country through economic and financial interlinkages.

When considering possible financial imbalances stemming from large capital inflows or inflexible exchange rate regimes, there are no easy solutions which would satisfy each and every country's needs both from an economic and political standpoint. But since we are all in the same boat, if we all start rowing in different directions, the risks of a fallacy of composition would increase. There are no mechanical or automatic mechanisms which can guide our economic policies. The complexity of how the current crisis unfolded across financial markets and economies as well as the new difficulties that continue to emerge as the global economy moves through the gradual recovery phase, are reconfirming this point. For policymakers, humbly learning from each other's experiences and deliberate and constructive dialogue, though perhaps not fancy solutions, are essential, as our boat continues through uncharted waters.

Bibliography

Bank of Japan International Department (2010) "Japan's balance of payment for 2009", *BOJ Reports & Research Papers*.

Bernanke (B.) (2005)

"The global saving glut and the US current account deficit", Remarks at the Sandridge Lecture, Virginia Association of Economics, Richmond, Virginia.

Blanchard (O.) and Milesi-Ferretti (G. M.) (2009)

"Global imbalances: in midstream?", IMF Staff Position Note SPN/09/29.

Borio (C.) and Disyatat (P.) (2010)

"Global imbalances and the financial crisis: reassessing the role of international finance", *Asian Economic Policy Review* 5, No. 2: 198–216.

Feldstein (M.) (2008)

"Resolving the global imbalance: the dollar and the US saving rate", *Journal of Economic Perspectives* 22, No. 3: 113–125.

Fender (I.) and McGuire (P.) (2010)

"Bank structure, funding risk and the transmission of shocks across countries: concepts and measurement", *BIS Quarterly Review*, September.

Kohn (D.) (2010)

"Global imbalances", Remarks at the High-Level Conference on the International Monetary System, Zurich, Switzerland.

Obstfeld (M.) and Kenneth (R.) (2009)

"Global imbalances and the financial crisis: products of common causes", Paper prepared for the Federal Reserve Bank of San Francisco Asia Economic Policy Conference.

Okina (K.), Shirakawa (M.) and Shiratsuka (S.) (2001)

"The asset price bubble and monetary policy: Japan's experience in the late 1980s and the lessons", *Monetary and Economic Studies* 25, No. S-1: 395–450. Bank of Japan Institute for Monetary and Economic Studies.

Shirakawa (M.) (2010)

“Revisiting the philosophy behind central bank policy”, Speech at the Economic Club in New York.

Shirakawa (M.) (2010)

“Advanced and emerging economies – Two-speed recovery –”, Speech at the Bauhinia Distinguished Talk in Hong Kong SAR.