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International Financial Market Report 2008

International Financial Market Analysis Group

People's Bank of China Shanghai Head Office

March 2009

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Abstract

- In 2008, international financial crisis kept spreading and attached deeper negative impact on real economies, with some large financial institutions involved in difficulties, major markets facing credit crunch and public confidence damaged. Major economies fell into recession one after another, and growth of other economies slowed down significantly. Most economies implemented expansionary macroeconomic policies and took necessary rescue actions. It is estimated that the world economy will still be in recession in 2009 and the turbulence in international financial market will continue. But with the completely releasing of crisis and gradually revealing of countermeasures' effects, the international economy and finance may witness a turnaround.

- Some instability factors have been exposed during the ongoing crisis. Therefore, essential reform should be carried out to the international financial system. The reform should aim at strengthening the international responsibilities of dominant countries in the international financial system, upgrading the roles of developing countries and enhancing stability of the whole system.

- Major advanced economies continued to dominate the international financial market, while the market shares of emerging economies continued to rise. In 2008, the international financial market faced severe turmoil. The prices fluctuated violently. Interest rates dropped down and the major stock indices declined sharply. In the first half of the year, USD depreciated against other major currencies and prices of major commodities futures rose distinctly. In the second half of 2008, USD appreciated and prices reversal was seen. Transaction in some markets shrank.

- Faced with the challenges posed by international financial crisis in 2008, China responded in a positive manner, expanding internal demand, participating in international and regional economic and financial cooperation, as well as going to great lengths to offer a variety of assistance to other countries. In 2008, with the ever-expanding participation of foreign capitals in China's financial markets, China continued to participate in the international financial markets in an active and prudential way. China will push forward the opening-up of China's financial market actively and steadily.

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Part I　Macro Environment for International Financial Markets

The international financial crisis continued to put a worldwide and deepening adverse impact on global real economy in 2008. Major economies have fallen into recession one after another, while emerging and developing economies slowed down significantly. Due to global economic downturn and the price plunges of major raw materials in the second half of 2008, the inflation pressures in overwhelming majority of economies moderated markedly after July 2008, offering those economies room for stimulating economies by employing fiscal and monetary policies. Liquidity strains in major financial markets, credit crunches of financial institutions as well as continuous falls in real estate prices and stock prices, deteriorated private consumption and investment, and deepened economic recession (or slowdown). Pulled down by turbulence of international financial markets and world economic downturn, global trade decelerated significantly and global capital flows contracted. World economic growth is now expected to slow down further, advanced economies to dip into negative territory, growth of emerging economies to continue to decelerate, and the world inflation to subdue further in 2009, while most of economies are expected to keep the expansionary fiscal and monetary policies.

1. The world economy

1.1 U.S. economy began to dip into the negative territory in the second half of 2008

Against the backdrop of a sharp deceleration in consumer spending

together with a downturn of investment in business equipment and software, U.S. real GDP grew by 1.3% in 2008, lower than 2.0% in the previous year. Meanwhile, labor markets began to deteriorate, consumer prices dropped down rapidly, and the gloomy economic outlook loomed ahead.

Real GDP growth turned negative in the third quarter after an extraordinary growth in the second quarter. U.S. real GDP growth stood at levels of 0.9% [1]in the first quarter as a result of weak momentum. U.S. GDP rose by 2.8% in the second quarter as surging net exports and tax rebate checks buoyed consumption. Primarily affected by sharp personal consumption expenditures (PCE) decline and exports deceleration, real GDP decreased 0.5% in the third quarter. Declines in exports, consumer spending, business investment and new housing contributed to the 6.2% downturn of real GDP in the fourth quarter.

The deficit on trade in goods and services narrowed slightly. In 2008, U.S. total volume of exports of goods and services amounted to USD 1,843 billion, the volume of imports amounted to USD 2,520.1 billion, and the deficit was USD 677.1 billion, USD 23.2 billion lower than that of the previous year and USD 76.2 billion lower than the year of 2007. The deficit of the year 2008 was equivalent to 4.7% of GDP, slightly lower than 5.1% of the previous year.

Unemployment rate continued to rise. Unemployment rate (seasonally adjusted, s.a.) was 4.9% in January 2008, fluctuated slightly in the following three months, and continued to hike thereafter. The rate reached 6.8% in November, and 7.2% in December, the highest since January 1993.

---

[1] Seasonally adjusted annual quarter-to- quarter rates in this section, unless otherwise specified.

Inflation pressures reversed after rising sharply in the first half of 2008. As energy price posted a record high, and food price hiked continuously, the year-on-year growth rate of U.S. CPI (urban) decreased slightly at the beginning of 2008, then rising sharply in the summer with the year's highest of 5.6% in July. Inflation pressures subsided after July, and the growth rate declined to 0.1% in December. The year-on-year monthly growth rate of CPI (commodities less food and energy commodities) declined after rising at first, and dipped into negative territory in the last two months of 2008 (-0.6% in December, in particular).

1.2 The euro area economy witnessed the first negative growth in the recent decade

Driven by international financial crisis and global economic recession, the real output of the euro area turned negative in 2008, with a rapidly mitigating inflation pressure, a deteriorating international trade environment, and an increasingly challenging employment issue.

The euro area economy deteriorated gradually. The real GDP of the euro area grew by 0.7%[2] in the first quarter of 2008, and the quarterly growth rates of the subsequent three quarters were 0.2%, 0.2%, and 1.5% respectively. According to the estimation by Eurostat, real GDP would grow by 0.1% in 2008, much lower than 2.7% in the previous year. The industrial production decreased by 1.8% in 2008 compared with 3.5% in the previous year. The contribution of external demand to GDP growth has been weakening, while that of government consumption was relatively stable.

[2] Seasonally adjusted quarter-to- quarter rates in this section, unless otherwise specified.

The deficit on trade widened to a record high. The deficit on trade in goods and services hit EUR 32.1 billion and set up a new record, which mainly resulted from global economic downturn and the worsening external trade environment facing the euro area.

The unemployment rate hiked in 2008. The unemployment rate (s.a.) of euro area was unchanged at the levels of 7.2% in the first three months of 2008 and continued to rise thereafter, reaching the year's highest of 8% in December.

Harmonized Index of Consumer Prices (HICP) in euro area began to decelerate after July. Due to the significant decline of prices of energy and bulk commodities in the second half of 2008, the year-on-year percent change of HICP fell down from 4.0% in July to 2.1% in November and further to 1.6% in December.

1.3 U.K. economy was deeper into recession

The quarterly growth rates of GDP in 2008 were 0.4%, 0, -0.8% and –1.5% respectively; real GDP grew by 0.7% in 2008, much lower than 3.0% in the previous year; deficit on trade in goods and services reached GBP 46.1 billion and remained unchanged compared with that in the previous year; the unemployment rate was rising gradually with 6.3% in the fourth quarter, 0.4 percentage point higher than in the last quarter; inflation pressures increased from a year-on-year percent change of 2.2% in January to 5.2% in September, the highest in 2008, and decreased thereafter to 4.1% in November and to 3.1% in December.

1.4 Japan's economy continued to worsen

Japan's economy has been worsening with a decline in business fixed

assets investment, the sluggish growth in residential and public investment, the weakening private consumption, the downturn in exports, a dramatic decline of surplus on trade in goods and services and a deteriorating employment condition. In 2008, the quarterly percent changes (quarter-to-quarter) of real GDP were 0.2%, -0.9%, -0.6%, and –3.3% respectively, and the whole year's declined by 0.7%, compared with 2.4% in the previous year; the current account surplus narrowed to JPY 16.28 trillion (a decline of 34.4% compared with the last year), the surplus on trade in goods and services narrowed to JPY 1.8 trillion (a decline of 81.7% compared with the last year); the quarterly unemployment rates (s. a.) were 3.9%, 4.0%, 4.1% and 4.0%, indicating a trend of rising; the monthly percent change of Japan's CPI (s.a., general) from a year ago rose in the first half with the year's highest of 2.3% in July, declined in the second half of 2008 (an accelerating decline in November and December, in particular), with the year's lowest of 0.4% in December.

1.5 The economic growth of emerging and developing economies moderated

Affected by international financial crisis, the economic growth of emerging and developing economies dipped slightly in 2008. According to projections by IMF[3], developing Asia would decelerate its economic pace to 7.8% in 2008, down from 10.6% in 2007; central and eastern Europe would decelerate its output growth from 5.4% in 2007 to 3.2% in 2008; the economic growth of Commonwealth of Independent States was expected to slacken to 6.0% in 2008 down from 8.6% in 2007; the economic growth in Middle East was projected to slacken to 6.1% in 2008 down form 6.4% in 2007. Economic Commission for Latin America and Caribbean (ECLAC) predicted that this area would grow by 4.6% in

[3] *World Economic Outlook Update*, IMF, January 28, 2009.

2008. African Development Bank projected the economic growth in Africa would not be more than 5% in 2008.

2. The monetary and fiscal policies in major economies

In 2008, the major central banks implemented expansionary monetary policies and took measures to stabilize financial markets, which aimed at fighting the increasingly deepening international financial crisis. In particular, the U.S. Federal Reserve System (Fed) and Bank of Japan (BoJ) cut their target interest rates to levels near zero. To avoid economic depression or recession, major advanced and emerging economies implemented stimulating economic policies.

2.1 Major central banks cut interest rates sharply, while taking measures to stabilize financial markets

2.1.1 Fed tackled economic downturn by reducing the target rate sharply

The Fed cut the federal funds rate mainly in the first four months and the final three months of 2008. The Fed lowered the federal funds rate four times by 75 basis points, 50 basis points, 75 basis points and 25 basis points respectively, from 4.25% before January 22 to 2% on April 30. Cooperated with other five central banks, the Fed took immediate action to reduce the federal funds rate by 50 basis points to 1.5% on October 8. The Fed cut the federal funds rate by 50 basis points to 1% on October 29, and to the range of 0.00~0.25% on December 16 further.

The Fed rescued the troubled financial institutions and provided financial markets liquidity with creative bailout measures and liquidity tools, which aimed at moderating liquidity stress.

2.1.2 ECB re-orientated its monetary policy in the fourth quarter

To curb the increasing inflation pressures, ECB decided to lift the key interest rate by 25 basis points to 4.25% on July 3, that's the only action taken by ECB to change the rate in the first three quarters of 2008.

The mitigating inflation pressures and the increasing downside economic risks requested ECB to implement expansionary monetary policy. Consequently, ECB dramatically reduced the benchmark interest rate three times to 2.50% by 50 basis points on October 8, 50 basis points on November 6, and 75 basis points on December 4, respectively.

In the face of the financial crisis, ECB stepped up its efforts to ensure that solvent banks continued to have access to liquidity, intensified its close cooperation with other central banks, in particular with the Fed, and decided to temporarily expand the list of eligible collateral until the end of 2009. At the same time, the Eurosystem has made fine tuning to its risk control framework in order to protect itself against financial risks. All these measures have enhanced the capability of euro area banks to refinance themselves with the Eurosystem and have helped to ease liquidity tension in the money market.[4]

2.1.3 Bank of England reduced the key interest rate at an unusual pace in the fourth quarter

Bank of England reduced the benchmark interest rate from 5.5% to 5.25% in February, and further to 5% in April. Bank of England reduced the benchmark interest rate by 50 basis points on October 8, 150 basis points on November 6 and 100 basis points on December 4 to 2% respectively.

[4] Jean-Claude Trichet, Hearing at the Economic and Monetary Affairs Committee of the European Parliament. www.ecb.int.

2.1.4 Bank of Japan reduced the policy interest rate twice in order to stimulate the economy

In 2008, Bank of Japan cut the uncollateralized overnight call rate to 0.3% at the end of October but maintained the target rate at the levels of 0.5% unchanged before that. Bank of Japan reduced the rate to 0.1% on December 19 after the zero interest rate policy taken in 1999.

After mid-September of 2008, Bank of Japan has been supplying sufficient U.S. dollar funds to the market by implementing U.S. dollar funds-supplying operations, and supplying Japan Yen funds to the market by introducing the complementary deposit facility. In order to supply longer-term funds, Bank of Japan decided to increase the outright purchases of JGBs from JPY 14.4 trillion per year to JPY 16.8 trillion per year in mid-December of 2008.[5] In addition, with a view to facilitating corporate financing, Bank of Japan has expanded the range of eligible collateral and conducted the purchase of commercial papers.

2.1.5 Central banks of major emerging economies had different monetary policy orientations

With the aim of curbing the inflation, The Banco Central do Brasil raised the benchmark interest rate four times from 11.25% to 13.75% in 2008. Reserve Bank of India lifted the key rate (the repurchase rate) several times to 9% before the end of July; the Bank decided to cut the benchmark interest rate by 100 basis points on October 20, the first rate cutting since 2004, and to reduce the rate twice to 6.5% in November and December. The Bank of Russia lifted the policy rate six times from 10.25% to 13% with the aim of controlling capital outflow and curbing inflation. The People's Bank of China (PBC) reduced the one-year lending rate five times to 5.31%, and reduced the one-year deposit rate four times to 2.25%. The Bank of Korea raised the policy rate once to

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[5] Masaaki Shirakawa, *Global Financial Crisis and Policy Responses by the Bank of Japan*. www.boj.go.jp.

5.25% on August 7 before cutting the rate four times to 3%.

2.2 Major economies took expansionary fiscal policies

2.2.1 The U.S. has taken a series of measures to stabilize and spur its economy

In fiscal year (FY) 2008[6], the Federal budget deficit widened to USD 455 billion (3.2% of GDP), increasing USD 292 billion. That followed three years of improvement during which the deficit narrowed to USD 162 billion (1.2% of GDP) in FY 2007. The Government's total debt amounted to about USD 10 trillion at the end of FY 2008[7].

The Government has taken many measures with the aim of stabilizing the economy, which mainly consisted of: *Housing and Economic Recovery Act (HERA)*, introduced in July, authorized the Treasury Department to provide financial support for the housing GSEs; *Emergency Economic Stabilization Act（EESA）*, signed into law on October 3, gave the Treasury Department the ability to design and deploy a number of tools to restore the flow of credit to consumers and businesses; Capital Purchase Program announced by the Treasury Department with USD 250 billion to be used to pump capital into a wide range of banks; the FDIC temporarily raised the deposit insurance limit from USD 100,000 to USD 250,000 per depositor per bank, in addition, has temporarily guaranteed the newly issued senior unsecured debt of FDIC-insured institutions and their holding companies, as well as deposits in non-interest bearing deposit transaction accounts.[8]

Primarily, these policy actions were deemed to translate into the budgets

[6] Ends in September.
[7] The Federal Government's Financial Health: *A Citizen's Guide to the Financial Report of the United States Government*. www.ustreas.gov.
[8] Swagel, *Statement for the Treasury Borrowing Advisory Committee of the Securities Industry and Financial Markets Association*. Nov. 3, 2008. www.ustreas.gov.

of FY 2009 and the ensuing FYs. The Government deficit widened to USD 485 billion, a new record, in the first three months of FY 2009, which has exceeded the total deficit of last FY.

2.2.2 Both the European Union (EU) and its member states introduced economic recovery plans

Total budget expenditures of EU were EUR 129.2 billion (1.03% of EU national income) in 2008, with an increase of 2% compared with the previous year, in which the expenditures for spurring economy and employment amounted to EUR 57.2 billion, the biggest share in EU budget.

The Commission of the European Communities announced the European Economic Recovery Plan at the end of November, which consisted of:[9] firstly, an emergency budgetary impulse amounting to EUR 200 billion (1.5% of EU GDP), made up of a budgetary expansion by member states of EUR 170 billion to spur economic growth (around 1.2% of EU GDP), and EU funding in support of immediate actions of the order of EUR 30 billion (around 0.3% of EU GDP); secondly, a number of priority actions, grounded in the Lisbon Strategy, and designed at the same time to make EU economies adapt to long-term challenges and continued to implement structural reforms aimed at enhancing potential growth.

Some member states have taken measures to help stimulate demand and strengthen confidence: Germany enforced an economic stimulus program amounting to EUR 32 billion in November based on the framework of European Economic Recovery Plan; France announced an economic stimulus program on December 4 and would spend EUR 26 billion (1.3% of GDP) within two years; U.K. announced a package of fiscal policies to

[9] Commission of the European Communities, *A European Economic Recovery Plan*, Brussels, 26.11.2008. http://europa.eu.

stimulate the economy at the end of November, which included cutting tax, increasing government expenditures, expanding the credit guarantee for small-sized enterprises and raising the standard of national pension.

2.2.3 Japan continued to supplement the additional budgets with the aim of spurring the economy

Japan's current account expenditures for FY 2008 (from April 2008 to March 2009) stood at approximately JPY 83.1 trillion, of which the national debt service, social security-related expenditures and local allocation tax grants etc. occupied more than two thirds of the total. Tax and stamp revenues amounted to JPY 53.6 trillion, covering a bit more than 60% of total revenues, while the remaining nearly 30% depended on government bond issues. Finally, the fiscal deficit was JPY 29.5 trillion for 2008 FY. [10]

With the aim to improve people's living quality and make the Japanese economy more robust in the long term, the government adopted the Comprehensive Immediate Policy Package on August 29, 2008. This policy intended to achieve several objectives in detail: the first objective of the policy was to remove people's anxiety, including support people's daily life, employment and medical care, etc.; the second objective was to accelerate the transformation to a sustainable society; the third objective was to facilitate adaptation to a new cost structure and to boost growth potential, and to achieve this, full efforts should be made to ensure the financing of small and medium-sized enterprises(SMEs) and micro businesses.[11] The Japanese government has allocated a total of JPY 1.8081 trillion for implementing this policy package by the means of supplementary budget.

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[10] Ministry of Finance, *Current Japanese Fiscal Conditions and Issues to be Considered*. www.mof.go.jp.
[11] Speech on Fiscal Policy by Minister of Finance Nakagawa at the 170th Session of the National Diet, September 29, 2008. www.mof.go.jp.

The government adopted the *Measures to Support People's Daily Life* (October, 2008) and the *Immediate Policy Package to Safeguard People's Daily Life* (December, 2008) and allocated a total of JPY 4.848 trillion for implementing above programs by the means of supplementary budget.

In order to make up the funding gap of the supplementary budgets, Japanese government would take the step of additionally issuing government bonds. Japanese Ministry of Finance estimated that the total amount of government bond issuance for FY 2008 would be JPY 33.168 trillion, and the bond dependency rate would be 37.3%.[12]

2.2.4 Major emerging economies took measures to spur the economy in succession

Indian government announced an economic stimulus plan including government expenditures, tax cut, credit supports etc. on December 7, 2008, and the government would supplement expenditures of INR 200 billion (about USD 4.1 billion) in this FY ending on March 31, 2009. Brazilian government announced an economic stimulus program worth BRL 8.4 billion including lowering the tax rates of income and buying automobiles in early December. Korean government put forward a fiscal stimulus plan in November, and would cut tax and increase government expenditures by KRW 14 trillion (about USD 11 billion) to mitigate the economic downside risks in 2009. Malaysian government announced an economic stimulus policy package worth MYR 7 billion (about USD 2 billion) at the beginning of November, and presumed that consumers, planting industry, construction and real estate industry would benefit from that. Chinese government put forward an economic stimulus plan worth CNY 4 trillion at the beginning of November.

[12] Speech on Fiscal Policy by Minister of Finance Nakagawa at the 171 Session of the National Diet, January 5, 2009. www.mof.go.jp.

3. International trade

The development of global trade was adversely affected by global economic deceleration in 2008. As advanced economies like U.S., EU and Japan fell into recession and growth of developing countries slowed down, the demands of international markets declined tremendously, and the global trade decelerated significantly. The global trade imbalance remained severe. As a result of financial crisis and tremendous volatility of exchange rate, the contract enforcement and settlement risks had a negative impact on the performances of global trade; the rampant pirates activities exerted an adverse influence on the security of international trade; trade protectionism reared its ugly head with the Doha Round negotiations of the World Trade Organization (WTO) coming to a deadlock.

Global trade continued to increase although the growth rate was much lower in 2008. According to estimates by IMF, global trade volumes were expected to hit USD 20.77 trillion in 2008, equivalent to 33 percent of world GDP, 2 percentage points higher than that of the previous year.[13] Global trade of goods and services grew at a pace of 4.6%, lower than 9.4% in 2006 and 7.2% in 2007.[14]

International trade growth in both advanced and developing economies significantly slowed down in 2008. According to the estimates by IMF, export volumes of advanced economies grew by 4.1% in 2008, 1.8 percentage points lower than last year, while that of emerging and developing economies grew 5.6% in 2008, 4 percentage points lower than that of the previous year; import volumes of advanced economies grew by 1.8% in 2008, 2.7 percentage points lower than last year, while that of emerging and developing economies grew 10.9% in 2008, 3.5 percentage

[13] Source: IMF, *World Economic Outlook*, October, 2008.
[14] Source: IMF, *World Economic Outlook Update*, November 6, 2008.

points lower than the previous year.[15]

Triggered by the sudden slowdown of the world economy, the bulk commodities prices fluctuated tempestuously and major raw materials prices decreased markedly after hitting the year's highest around the mid-year. According to the estimates by IMF, the average price of non-fuel raw commodities like mental and food grew by 9.4% in 2008, lower than 14.1% in 2007; the average price of manufactured goods increased by 13.8% in 2008, and the growth rate would fall to 0.5% in 2009.[16]

Global trade imbalances remained unchanged in 2008. The advanced economies as a whole still ran a current account deficit, and the deficit widened compared with the previous year. Of which, U.S. current account narrowed slightly, the euro area current account swung into deficit from last year's surplus, both Japan and other advanced economies posted narrowing current accounts surpluses. Emerging and developing economies as a whole ran a widening current account surplus, of which developing Asia saw a narrowing current account surplus and Middle East oil-exporting economies had a dramatically widening trade surplus. Global current account imbalances were expected to moderate as the world economy slowed down and oil price declined markedly.[17]

As a result of international crisis, many economies faced severe recession, possibly fanning the trade protectionism and inducing a number of actions breaching the rules of WTO such as non-tariff barriers and anti-dumping. The historical experiences indicate that protectionism will not do any benefits but impair the global trade and world economy, so vigilance should be put on that.

[15] Source: IMF, *World Economic Outlook Update*, November 6, 2008.
[16] Source: IMF, *World Economic Outlook Update*, November 6, 2008.
[17] Source: IMF, *World Economic Outlook*, October, 2008.

Demands from international markets are projected to weaken further, and international trade condition is expected to be discouraging, as the result of a gloomy world economic outlook in 2009.

4. International capital flows

The year of 2008 witnessed a contraction of global international capital flows as a result of international financial crisis. Global foreign direct investment (FDI) had a significant decline; cross-border credit activities contracted, and the net issuance of international bonds and notes as well as the increased outstanding balance of the external assets in the form of cross-border deposits and loans in the international banking industry decreased markedly.

International capital flows have been rising continuously since 2002, of which emerging and developing countries have been the net importers of capital (including official and private capital). However, in the second half of 2008, affected by financial crisis, U.S., the euro area, U.K. and Japan fell into economic recessions or downturns, and the liquidity shortfall and credit crunch emerged in markets of developed countries, causing financial institutions to withdraw funds from overseas markets; the deceleration of export volumes and economic growth, as well as descend in assets prices in emerging economies prompted some foreign capital returning to its motherland[18].

Global FDI contracted significantly in 2008. According to the estimates by the United National Conference on Trade and Development (UNCTAD)[19], the total global FDI inflows reached USD 1.45 billion in

[18] Source: *World Economic Outlook Update*, IMF, November 6, 2008.
[19] Source: www.unctad.org.

2008 with a drop of 21.2% compared with the previous year. In the context of global economic recession, multinationals compressed production, cut staff and slashed capital expenditures, resulting in a decline of FDI inflow. The FDI inflow in different economies was influenced by the crisis to varied extent. The FDI inflow of developed countries saw a marked drop, while that of developing countries witnessed a slight increase. According to the estimates by UNCTAD, the FDI inflow reached USD 840.1 billion with a decrease of 32.7%, but that of developing countries reached USD 517.7 billion with a growth of 3.6%, a significant plunge compared with more than 20% of last year.

The net issuance of international bonds and notes in global bond markets declined significantly in 2008. Net issuance of international bonds and notes in 2008 totaled USD 2.4 trillion, down 18.5% compared with last year. The first quarter saw USD 528.4 billion in net issuance of international bonds and notes with a year-on-year drop of 45%; in the second quarter, the market resumed its position slightly and the net issuance reached USD 1.17 trillion, approaching the level of the last second quarter; in the third quarter, as a result of aggravated financial crisis, as the borrowing in international bond market contracted significantly, the net issuance of USD 223.5 billion pulled the year-on-year decline to 43.5%; in the fourth quarter, as the market recovered slightly, the net issuance rose to USD 512.7 billion with a year-on-year decline of 1.6%.[20]

There was a drop in the increased outstanding balance of the external assets in the forms of cross-border deposits and loans in the international banking industry. According to the statistics of BIS, the average quarterly outstanding balance of cross-border deposits and loans of BIS reporting banks in 2007 grew by USD 1.38 trillion; the increased outstanding

[20] *BIS Quarterly Review*, December 2008.

balance of cross-border deposits and loans of BIS reporting banks in the first three quarters of 2008 decreased considerably, and the average quarterly increment was USD 117 billion, equivalent to 8.5% of that in last year. The quarterly increments were USD 1013.5 billion, USD –821.4 billion and USD 159 billion from the first quarter to the third quarter respectively.[21]

The total global capital flow is expected to continue to decline in 2009 given the uncertainty of global economic outlook.

Box 1.1 The changing contrast between the economic strengths of advanced economies and emerging market and developing economies

Advanced economies still play a dominant role, no matter measured by economic aggregate or financial market scale. But the contrast between advanced economies and emerging market and developing economies in economic area has been changing continuously in recent decades, which mainly includes:

First, emerging market and developing economies' share in global economy has risen markedly. The emerging market and developing economies' share in global GDP was 43.6% in 2007, based on the purchasing power parity (PPP), and the average growth rate of emerging market and developing economies from 1998 to 2005 was 5.1%, much higher than that of 2.6% in major advanced economies and that of 3.6% in global economy of the same period.[22]

[21] *BIS Quarterly Review*, March 2009.
[22] IMF, *World Economic Outlook*, April 2008, Table A17.

Table 1.1 The share of major advanced economies and BRICs in global GDP from 2000-2007 *(Based on PPP; unit: %)*

	2000	2001	2002	2003	2004	2005	2006	2007
United States	23.6	23.3	23.0	22.8	22.6	22.4	21.9	21.4
Euro area	18.5	18.5	18.2	17.7	17.2	16.8	16.4	16.1
Japan	7.7	7.6	7.4	7.2	7.1	7.0	6.8	6.6
China	7.2	7.7	8.1	8.7	9.1	9.6	10.2	10.8
India	3.7	3.7	3.8	3.9	4.0	4.2	4.4	4.6
Russia	2.7	2.8	2.8	2.9	3.0	3.1	3.1	3.2
Brazil	3.0	2.9	2.9	2.9	2.9	2.9	2.8	2.8

Source:IMF, *World Economic Outlook Database*, 2008 April.

Second, emerging market and developing economies' status has risen slightly in international trade and investment fields. Advanced economies' share in global exports of goods and services was 66.4% in 2007, while that of emerging market and developing economies was 33.6%.[23] U.S., EU and Japan were still the top three giants of the global trade, while developing economies' share has risen slightly in recent years. Developing economies' share in global goods exports increased by 11 percentage points during the period of 1990-2005[24]. The share of EU, US and Japan kept fluctuating between 60% and 70% both in global FDI inflow and in global FDI outstanding in recent decades. Meanwhile developing economies has enhanced their importance despite the relatively weak role in FDI fields. Developing economies' share in global FDI inflows rose from average 20% of 1978-1980 to average 35% of 2003-2005, and that in global FDI outflows showed a clear rising trend.[25]

Third, emerging market and developing economies have accumulated a

[23] IMF, *World Economic Outlook*, April 2008, Table A.
[24] The World Bank, *World Development Indicators 2007*.
[25] UN, World Investment Report, 2006.

large amount of foreign reserves. Developing economies held SDRs 688.651 billion foreign reserves (53% of global total foreign reserves) at the end of 1997, while they held SDRs 3112.635 billion foreign reserves (75% of global total foreign reserves) at the end of 2007.[26]

Fourth, advanced economies still play a predominant role in international financial market, while emerging economies have lifted their positions continuously. Although U.S. dollar is still the most important trading currency, currencies of emerging economies have a much more widespread use than ever. Advanced economies maintain a leading position in global foreign exchange markets, cross-border credit markets, bond markets, stock markets, gold markets and futures markets, but the position of emerging economies in international markets has risen continuously.

5. Reform$ of international financial system

The Bretton Woods System after the World War II and the US dollar-based yet somewhat diversified international monetary system that came into being in 1970s played a positive role in helping post-war recovery of global economy, promoting international trade, cross-border capital flow as well as the development and prosperity of financial industry. Since mid 1990s, with the swift trend towards economic globalization and regionalization together with the surging ahead of science and technology, the global economic and financial pattern has experienced great changes with the emerging market economies enjoying a rising position. However, the existing international financial system failed to get adjusted timely to the changes. Some instability factors have been exposed during the ongoing global financial crisis. Therefore, necessary reforms should be carried out to the international financial

[26] IMF, *International Financial Statistics Yearbook*, 2008.

system.

5.1 The status quo of international financial system

The existing international monetary system has failed to reflect the changes of economic weights in the world. The constraint and supervision over the issuance of major international reserve currencies are not in place. The international monetary system is not adequately competitive. In recent years, emerging market economies have experienced fast development. Their shares in global economy have risen prominently, and their roles in the international trade and capital flow ascended constantly. However, their currencies still lack corresponding positions in the international monetary system. The system is dominated by major developed countries, which have failed to shoulder the responsibility of stabilizing currencies and financial system in a concrete manner.

International financial organizations are not sufficiently representative, and their functions need to be improved. In recent years, the economic and financial strengths of emerging market economies have been improved rapidly, but their positions in international financial organizations have not risen correspondingly, and they still do not have their voices. In this global financial crisis initiated by the subprime mortgage crisis in the U.S., international financial organizations failed to play the role of early warning. As the resources within their reach were limited, they were also somewhat late and inadequate in response to the crisis.

Cross-border financial supervision is flawed and inadequate for the demands of global financial integration. Within the existing international financial supervision framework, there is no institutional

arrangement for supervision and early warning of cross-border financial risk or effective supervision over short-term speculative capital flow. In the international financial market, developed countries dominate rule setting and instrument innovation. The service industry relevant to financial sector, such as rating, accounting, auditing and information service, is monopolized. Without sufficient supervision over relevant institutions, the financial market is faced with potential pricing distortion risk. Without adequately effective correction mechanism, financial risk will spread quickly and cause global financial crisis eventually.

Investment protectionism exists to a certain extent in the financial sector. Most countries widely open their financial sector to developed countries, but limitedly open to emerging market economies, which hinders global financial integration.

The outburst and spread of global financial crisis made the international community consider readjusting the global financial order so as to enhance the stability of international financial system. In order to strengthen cooperation between major developed countries and emerging market economies in response to the global financial crisis, and to promote the reform of international financial system, the heads of G20 countries held the Summit on Financial Markets and the World Economy in Washington, U.S. in November 2008, and made a statement to address the crisis and promote the reform of international financial system.

Box 1.2 G20 global financial summit

In September 1999, in order to make the discussions on major reforms of global economic system, financial stability and international monetary system more broadly representative, G7 established Group of Twenty (G20), a more influential international forum with finance ministers and

central bank governors as its members.

The year of 2008 has witnessed large fluctuations of world economy and financial market. On November 15, the leaders of G20 held a Summit on Financial Markets and the World Economy in Washington D.C., the first summit in the history of G20. A statement was made, and it is emphasized that amid serious challenges to the world economy and financial markets, the participating countries determined to enhance their cooperation to restore global growth as well as achieve needed reforms in the world's financial systems.

The statement analyzes the root causes of the current crisis. Hope and encouragement are expressed that new loan mechanism will be introduced in the areas of infrastructure and trade financing. Financial supervisory authorities are called upon to strengthen international cooperation. Governments are encouraged to fight against trade protectionism and face up to the challenges including energy security, climate change and food security.

The Statement makes five proposals. Firstly, efforts should be made to strengthen financial market transparency, including by enhancing required disclosure on complex financial products. Secondly, the leaders pledge to strengthen their regulatory systems and exercise strong oversight over credit rating agencies and derivative market, so as to make regulatory systems more effective. Thirdly, the leaders commit to promoting integrity in financial markets and information sharing, preventing illegal market manipulation, fraudulent activities and abuse of power, so as to protect the legal interests of investors and consumers. Fourthly, national and regional regulators should formulate their regulations and other measures based on consistent principle. Efforts should be made to enhance coordination and cooperation, especially with

respect to cross-border capital flows. International Supervisors Association is to be established by March 2009, and it will supervise large multinational financial institutions. Fifthly, emerging and developing economies should have greater voice and representation by reforming international financial institutions. The Financial Stability Forum (FSF) must expand urgently to a broader membership of emerging economies.

G20 is aimed at encouraging discussions and researches between developed and emerging market economies on concrete issues, seeking cooperation and promoting international financial stability and sustainable economic growth. As its membership includes emerging economies with latent capacity, G20 is more representative than G7 and plays a better balancing role between developed and developing countries with respect to global economic and financial issues.

China expressed her views and proposals in G20 summit on major issues, including reforming international monetary and financial system, safeguarding global financial stability, coordinating national economic and financial policies and enhancing international cooperation. The international community attached importance to the voice from China.

5.2 The direction and principles of international financial system reform

The reform of international financial system should be carried out in the direction of establishing a fair, just, tolerable and orderly international financial order. Efforts should be made to create an institutional environment favorable to sound growth of global economy, to establish a world economic management mechanism with high credit and high efficiency, to get emerging market economies more involved in

international financial system and to urge members of international financial system to assume their due responsibilities.

The reform of international financial system should adhere to the principle of comprehensiveness, equilibrium, progressiveness and effectiveness. Comprehensiveness means there should be a general plan for the reform, which covers not only improvement of international financial system, monetary system, financial organizations, but also perfection of international financial rules and procedures. The plan should not only reflect the common rules and principles of financial supervision, but also take into consideration the development stage and characteristics of different economies. Equilibrium means the reform should balance the interests of different parties, the decision-making and management mechanism be more broadly and effectively representative, and the interests of emerging and developing countries be reflected. Progressiveness means with keeping the international financial market stable as a prerequisite, the reform should be carried out step by step with the easy parts prior to the difficult ones, so as to reach the goal eventually. Effectiveness means importance should be attached to the effect of the reform. All the measures should be favorable for keeping international financial stability, promoting world economic growth and enhancing well-beings of people around the world.

5.3 The content of international financial system reform

With respect to international financial system, attention should be paid to how to tackle the current financial crisis in the short term. In the medium and long term, progressive reforms should be carried out, especially to improve the unreasonable and unstable elements. The reform should aim at strengthening the international responsibilities of dominant countries in the international financial system, upgrading the roles of developing

countries and enhancing stability of the whole system. The reform measures will be introduced in the areas of improving international monetary system, reforming international financial organizations, reinforcing international financial supervision and encouraging regional cooperation, etc.

5.3.1 Efforts should be made to improve international monetary system, to steadily promote its diversification, make it more competitive and shore up its stability.

A moderately competitive international monetary system should be established, in which emerging markets play a positive role and their currencies hold due positions. Meanwhile, constraint and oversight of main reserve currency issuance should be strengthened, so as to enhance stability of the system.

5.3.2 Efforts should be made to promote international financial organizations reform, expand the representation of developing countries and improve the abilities of international financial organizations to fulfill their responsibilities.

The leadership selecting mechanism of international financial organizations along with their internal governance structures should be improved. Developing countries should have greater voice and representation in these organizations. It is urgent that an early warning system be established which covers the whole world, especially the world financial centers. We should also set up a timely and effective crisis bailout mechanism, so as to ensure international financial organizations will play the supervisory, coordinating and rescuing roles when combating crisis.

5.3.3 International cooperation should be strengthened with respect

to financial supervision, and the whole system needs to be improved.

We should expand the coverage of international financial supervision, and especially strengthen the oversight over major reserve currency countries. Countries around the world should be urged to establish a comprehensive supervision framework, and reinforce the supervision covering financial markets, products and participants completely. We should set legitimate and effective supervision standards, improve relevant institutional arrangements including accounting rules and capital adequacy requirements. Code of conduct should be in place for the operations of financial service industry, such as credit rating, accounting, auditing and information release, so as to make the industry more competitive. Developing countries should have broader representation in financial rules setting. We should enhance transparency of financial markets and products to make explicit the real credit-and-debit relationship. Efforts should also be made to strengthen international coordination in financial crisis intervention and bailout. Financial market infrastructure needs to be improved, especially that of OTC market.

5.3.4 Regional financial cooperation should be encouraged, giving full play to regional fund bailout mechanism and enhancing mutual assistance of regional liquidity.

It is appreciated what has been achieved in regional financial and monetary cooperation. It is encouraged that countries around the world reinforce regional cooperation and face up to the risks of regional liquidity shortage, large currency fluctuations, etc. Efforts should be made to strengthen financial infrastructure construction within the region, speed up financial market development and enhance soundness of national financial system in the region.

5.3.5 It is required that supervision and early warning mechanisms of cross-border financial risk spread be established, and international

coordination be strengthened for financial crisis intervention and bailout.

Countries around the world should strengthen information exchange and communication, and reinforce supervision over global capital flow, so as to prevent random short-term capital flow. Countries should assume rescue responsibilities appropriate to their national strength and positions in the international financial system.

5.3.6 Efforts should be made to remove investment barriers in the financial sector to promote the readjustment of international financial pattern.

We are against protectionism in any form. Developed countries should open more of their financial markets to emerging and developing countries and provide possible facilities and assistance. The investments in developed countries by financial institutions from emerging and developing countries should be encouraged and supported so as to promote the readjustment of international financial pattern.

5.3.7 The interests of developing countries should be protected and world economic development be promoted.

The international community, especially developed countries, should take appropriate duties and responsibilities to minimize the adverse impact of international financial crisis on developing countries and to help developing countries maintain financial stability and promote economic growth. International financial organizations should offer timely assistance to the developing countries in need by introducing measures like relaxing lending requirements. We should advance poverty reduction in the world and reinforce assistance to the least developed countries and regions through measures such as reducing or remitting debts and tax on export, expanding technology transfer, helping them with infrastructure

construction so as to strengthen their self-development abilities.

International financial system is an important part of international economic system, so a broadly representative financial system will definitely play a critical role for prosperity and stability of global economy. Developed and developing countries should join each other in efforts to promote international financial system reform and establish a new order with the characteristics of harmony and stability.

Part II Performance of International Financial Markets

In 2008, the subprime mortgage crisis continued to deepen, large-scale financial institutions fell deeply into difficulties, and the crisis had evolved into all-round international financial crisis. Enlarged turbulence of global financial markets and decreased transactions in some markets had brought huge negative impacts to the world economy. In the first half of 2008, the crisis did not exert profound influence on the real economy, so major prices of global financial markets continued the trend of last year-end. In particular, USD continually depreciated against other major currencies; short-term interest rate of major currencies raised; yields of medium and long-term governments bonds in major countries rose after a decline due to according changes of the U.S. economic growth; influenced by increased inflationary pressure and depressed economic prospects of some countries, major stock indices declined sharply; gold price fell down after a remarkable rising; prices of bulk commodities, such as crude oil, basic metals and agricultural products continued to rise and hit record highs. In the second half of 2008, the subprime mortgage evolved into international financial crisis and its negative impact on real economy emerged, which caused reversal of price trend in some financial markets. In particular, USD appreciated apparently against other currencies, notably against currencies in emerging countries. Reasons are as follow: firstly, the U.S. economy suffered negative growth, while economic situations in other major economies were even worse and growth of emerging markets also declined. Secondly, the increasing risk-sheltered demand, and financial institutions' self-rescue like deleveraging and capital withdrawal from overseas markets fueled appreciating tendency of USD. Since major central banks lowered interest rates, short-term interest rates of major currencies fell sharply after a short rise. Yields of medium and long-term governments bonds decreased

significantly. Affected by the worse economy, credit crunch, disappointing financial reports of listed companies, weakened market confidence, shrinking demands for bulk raw materials, prices of major stock indices and bulk commodities dropped dramatically. At the end of 2008, prices of crude oil, copper and aluminum hit a new low in recent five years after reaching a record high in mid-2008. Gold price fluctuated greatly due to the worsening prospect on world economic growth and increasing risk-sheltered demand.

After the crisis broke out, the U.S. and European countries all adopted expansionary macro-economic policies and took rescue measures like capital injection. However, the effects of these actions haven't been unfold and were insufficient to thoroughly stop evolution of the crisis and restore market confidence. In 2009, the international financial crisis will keep on, world economic downturn will further deepen, and international financial markets will continue to fluctuate considering the uncertainty and complexity of global economic and financial situations. Meantime, with thoroughly manifesting of the crisis's negative effects, countermeasures will play their positive roles gradually. So world economic and financial situation may have its favorably turning point and international financial markets may rebound in the second half of 2009.

1. The pattern and trading volume of international financial markets in 2008

In 2008, the U.S. subprime mortgage crisis continued to worsen, and evolved into international financial crisis. Developed financial markets like U.S. and Europe suffered great losses, such as shrinking stock market capitalization, difficulties in bond issuance in the second half of the year, etc. However, developed countries steadily maintained their leading positions in global financial markets, while the emerging market

economy was a rising strength.

1.1 Global foreign exchange transaction concentrated in London, New York and Tokyo. The transaction volumes continued to grow up

1.1.1 London strengthened its leading position in foreign exchange transaction, and its transaction volume continued to increase

In 2008, Average Daily Volume (ADV) in major centers of foreign exchange transaction continued to increase. According to the Foreign Exchange Joint Standing Committee of London, London strengthened its leading position as the largest center for global foreign exchange transaction, with its ADV of USD 1.82 trillion in April 2008, up 54% year on year. In particular, ADV of traditional foreign exchange instruments (include spot, forward and swap) was USD 1.68 trillion, accounted for 92.5% of the total, currency swap and options was USD 136 billion and accounted for 7.5%. According to the American Foreign Exchange Committee, ADV of American foreign exchange market reached USD 715 billion, up 15.7% year on year. According to the Tokyo Foreign Exchange Market Committee, ADV of Tokyo foreign exchange market reached USD 302.5 billion, up 26% year on year.

1.1.2 The USD was the most actively traded currency and currencies of emerging market economies increased their shares of foreign exchange trading

According to the Foreign Exchange Joint Standing Committee of London, though the USD still was the dominant currency in London foreign exchange market, its market share continued to decrease, down from 85% in April 2007 to 79% in April 2008(Bilateral statistics). Market shares of other actively traded currencies like euro, yen and pound also declined. However, currencies of emerging market economies including Hong Kong dollar were traded wider, with its market share up 15% to about

35% of the total.

1.1.3 Main trading instruments vary among London, New York and Tokyo foreign exchange markets

Spot was the main trading instrument in New York foreign exchange markets, accounted for 55% in April 2008, while swap was the main trading instrument in London and Tokyo foreign exchange markets, accounted for 51% and 53% in April 2008 respectively.

1.1.4 Trading volume of foreign exchange futures in Chicago Merchandise Exchange (CME) continued to maintain its global leading position

In 2008, top three of trading volume in CME were euro futures bargaining on 53.65 million lots, yen futures with 32.84 million lots and pound futures with 20.50 million lots, up 24.6%, 6.6% and -1.5% respectively year on year.

1.2 U.K. is the center for cross border lending, and trading volume of international money markets continued to grow

1.2.1 U.K is the center for cross border lending

According to International Financial Services, London (IFSL) statistics, at end-March of 2008, outstanding balance of cross border lending in London accounted for 20% of the total, followed by Germany (11%), the U.S. (9%), France (9%), Japan (7%), Singapore (2%) and Hong Kong China (2%). Outstanding balance of cross border borrowing in London accounted for 24%, up three percentage points year on year.

1.2.2 Scale of global OTC interest rate derivatives markets kept growing

According to BIS statistics, up to the end of June 2008, nominal outstanding of global OTC interest rate derivatives markets amounted to USD 458.3 trillion, up16.6% over that at the end of 2007. In particular, nominal outstanding balance of forwards, swap and options were USD 39.4 trillion, 356.8 trillion and 62.2 trillion, up 48%, 15.2% and 9.1% respectively over the end of 2007.

1.2.3 Trading volumes of short-term interest rate futures in CME and Euronext. liffe maintained their global leading positions

In 2008, the top there of trading volume in the two exchanges were 3-month Eurodollars futures (CME), 3-month euro futures (Euronext.liffe) and 3-month pound futures (Euronext.liffe), with trading volumes 596.97 million lots, 228.49 million lots and 104.57 million lots, up -3.9%, 3.0% and -13% respectively over 2007.

1.3 U.S., Euro zone, Japan and U.K. accounted for overwhelming majority in shares of global bond market and the outstanding balance of international bonds decreased in the third quarter

1.3.1 Majority shares of domestic bonds outstanding balance were dominated by U.S. and Japan, while majority shares of international bonds outstanding balance were dominated by the U.S., U.K. and Euro zone

According to BIS statistics, up to the end of June 2008, total outstanding balance of bonds in global markets was USD 86.09 trillion, up 7.3% over the end of 2007. In particular, outstanding balance of domestic bonds issued at domestic markets and international bonds issued abroad were USD 60.80 trillion and USD 25.29 trillion, up 5.7% and 11.3% respectively over the end of 2007. In the third quarter, outstanding balance of global bonds decreased, among which outstanding balance of

international bonds down 5% to USD 24.03 trillion. Outstanding balance of bonds issued by the U.S., Japan, Germany, U.K., France and Italy accounted for the majority shares.

In international debt securities market, based on issuers' location, the U.S., U.K., Germany, Netherlands, France and Spain ranked top six, and Euro Zone as a whole accounted for 40.9% (figure 2.1).

In domestic bond market, the U.S., Japan, Italy, France, Germany, China, Spain and U.K. were the top eight, among which U.S. and Japan obtained over half of the total (figure 2.2).

1.3.2 Financial institutions were the main issuers of international bonds, while governments were the major issuers of domestic bonds

Up the end of June 2008, as for international bonds issuance, financial institutions, companies and governments accounted for 79.1%, 10% and 8.2% respectively. For domestic bonds issuance, outstanding of bonds issued by governments was the largest, accounted for 47.2%, while financial institutions and companies accounted for 42% and 10.8% respectively.

1.3.3 Euro and USD were the major currencies in international bonds issuance

The major currencies used in international bonds issuance were Euro and USD, and Euro obtained about half share. At the end of June 2008, outstanding balance of international bonds denominated in Euro and USD accounted for 47.4% and 29.4% (down 6.7 percentage points) respectively. Other major currencies were pound (13.6%), yen (3.7%), Swiss franc (2.1%), Hong Kong dollar (1.2%) and Australian dollar (1.1%).

1.3.4 Trading volumes of long-term interest rate futures in Eurex and CBOT continued to maintain their global leading positions

In 2008, the top two trading products were futures on 10-year Germany government bonds and 10-year U.S. treasury bonds, with trading volume of 257.83 million lots and 256.77 million lots, down 23.8% and 26.5% respectively over 2007.

1.4 Global stock market capitalization shrank dramatically, while the U.S., Japan and Euro zone continued to maintain their leading positions

1.4.1 Stock Market capitalization shrank dramatically and mostly concentrated in the U.S., Japan, Euro zone and U.K.

At the end of 2008, according to incomplete statistics of the World Federation of Exchange (WFE), market capitalization of global major stock exchanges was about USD 32.58 trillion, sharply down 46.3% over the end of 2007. The top five stock exchanges in term of market capitalization were New York Stock Exchange Group (NYSE Group), Tokyo Stock Exchange (TSE), NASDAQ, Euronext and London Stock Exchange (LSE), respectively accounting for 28.3%, 9.6%, 7.4%, 6.5% and 5.7% of global stock markets，57.% in total, dramatically down 41.2%, 28.1%, 40.3%, 50.2% and 51.5% respectively. Market capitalization of Shanghai Stock Exchange and Hong Kong Exchange decreased 61.4% and 49.9% respectively, with their market share 4.4% and 4.1%, ranking sixth and seventh respectively across the globe (Figure 2.3). Global ranks of Bombay Stock Exchange and National Stock Exchange of India lowered a little and were thirteenth and fourteenth respectively.

1.4.2 Financing size of global stock markets decreased, and financing size of American and European stock markets obtained over half of

the total. IPO financing declined significantly

In 2008, financing through the global stock markets including IPO and refinancing amounted to USD 788 billion, down 10.8% year on year. The top five in term of financing size were Euronext, NYSE Group, LSE, Hong Kong Exchange and Australian stock exchange, accounting for 19.9%, 19.2%, 15.8%, 6.6% and 6.2% respectively. Financing amount of Shanghai Stock Exchange decreased, down from 10.0% to 3.5%, and its global rank was eighth.

In 2008, IPO financing in the global stock market was USD 121.4 billion, sharply down 67.3% year on year, and its market share down from 42.8% to 15.4%. The top six in term of size were NYSE Group, LSE, Shanghai Stock Exchange, Luxemburg stock exchange, Hong Kong Stock Exchange and Bombay Stock Exchange, accounting for 20.9%, 11.0%, 9.0%, 7.4%, 7.0% and 4.0% respectively.

1.4.3 Over sixty percent of trading volumes was taken by two stock exchanges in New York U.S.

In 2008, trading volume of global stock exchanges (include investment funds) was USD 113.26 trillion, up 12.7% year on year. The top five exchanges in term of trading volume were NASDAQ, NYSE Group, LSE, TSE, and Euronext, accounting for 32.2%, 29.7%, 5.7%, 4.9% and 3.9% respectively. In particular, market share of NASDAQ and NYSE Group rose up from 44% to 62%. Shanghai Stock Exchange accounted for 2.3% and ranked seventh in the world (Figure 2.4).

1.4.4 Trading volumes of stock index futures in CME and Eurex maintained their global leading positions

In 2008, according to WFE statistics, trading volumes of stock index futures in CME and Eurex recorded 898.28 million lots and 511.75

million lots, up 41.8% and 27.8% year on year respectively. National Stock Exchange of India, Osaka SE and Euronext recorded 202.39 million lots, 131.03 million lots and 106.1 million lots, ranking third, fourth and fifth respectively in the world.

1.5 London and New York were the centers of spot and futures gold trading, and gold trading volume increased sharply

Over three fourths gold are traded through OTC market in the world. Until now, London is the largest center for OTC trading, followed by New York, Zurich, Tokyo, Sydney and Hong Kong. Transactions of exchange-traded gold are concentrated in New York Mercantile exchange (NYMEX), Tokyo Commodity Exchange (TOCOM) and Multi Commodity Exchange of India (MCX).

In 2008, Affected by international financial crisis, risk-sheltered demands rose sharply, which resulted in the rapid growth of gold clearing amounts and value. Gold clearing amounts by London Bullion Market Association (LBMA) were 5.669 billion ounces, up 10.6% year on year. Gold clearing value by LBMA was USD 4.9 trillion, up 36.2% year on year.

In exchange-traded markets, according to IFSL statistics, trading volume of gold futures grew distinctly to USD 5.1 trillion, up 83% year on year. In particular, trading volumes of NYMEX and MCX were 4.943 billion ounces and 386 million ounces, up 57.4% and 44% year on year respectively, while trading volume of TOCOM was 565 million ounces, down 12% year on year.

1.6 New York, Chicago and London maintained their leading positions in commodity futures transactions, and trading volumes of global commodity futures continued to grow

According to the Futures Industry Association (FIA) statistics, turnover of global exchange-traded commodity derivatives in 2008 was 1.11 billion lots, up 41.7% year on year. Therein, turnovers of agricultural, energy and metal products were 614 million lots, 215 million lots and 281 million lots, up 52.9%, 16.7% and 42.2% year on year respectively. CBOT, NYMEX and LME continued to maintain their leading positions in trading volumes of agricultural, energy and metal products.

2. Price trend in international financial markets in 2008

In 2008, the U.S. subprime mortgage crisis continued to deepen, and evolved into all-round international financial crisis, which led to the price turbulence of global financial markets. As great changes took place to world economic and financial situations from the first to the second half of the year, price trend featured wide discrimination. In the first half of 2008, since the crisis hadn't badly hurt world real economy, prices basically moved with the trend of last year-end. In particular, USD depreciated against other major currencies, short-term interest rates of major currencies raised, yields of medium and long-term government bonds in major countries rose after a decline, major stock indices declined sharply, gold price fell after a remarkable rising, prices of major commodities futures rose distinctly. In the second half of 2008, influenced by all-round international financial crisis together with worsened world economic and financial situations, the reversal of price trend was seen in some financial markets. In particular, USD appreciated against other major currencies, short-term interest rates of major currencies fell sharply after a rise, yields of medium and long-term government bonds decreased significantly, prices of major stock indices

fell at a faster pace, gold and commodity prices declined sharply. Prices of bulk commodities witnessed a particularly outstanding reversal. Prices of oil, copper and aluminum reached record high in the middle of 2008, but by the end of the year fell to the lowest level in the past 5 years.

2.1 USD initially depreciated and then appreciated greatly driven by risk-sheltered demands

In the first half of 2008, USD weakened against other major currencies. Given the background of increasing worries on prospect of the U.S. economic growth, the Fed lowered interest rate four times successively, which was the key reason for USD's weakness. NYMEX USD index closed at 71.012[27] on April 18, the lowest point in recent years. Later on, as a series of beneficial economic data eased worries on the U.S. economy and inflation exacerbated, probability on further rate reduction by the Fed lightened, thus USD remained even against other major currencies. Since August, USD appreciated against other major currencies due to three reasons: firstly, USD is the major international reserve and settlement currency. On the background of exacerbating financial crisis and deepening recession of world economy, a great amount of capital flew back to assets marked in USD for the sake of hedging risks; secondly, expansion of financial crisis to European countries and emerging market economies resulted in the exacerbation of their economies, which put pressures on euro, pound and currencies of emerging market economies; thirdly, due to huge losses, American local financial institutions draw back part of their investments abroad, propping up the U.S. dollar. NYMEX USD index closed at 88.191 on November 21, the highest point in two and a half years. Thereafter, a series of unfavorable economic data aggravated worries on the U.S. economic recession and global stock markets recovered. As a result, USD index fell

[27] Source: Xinhua 08. Hereinafter the data are all from Xinhua 08.

down again and closed at 81.151 in the year-end, up 5.8% year on year.

2.1.1 USD depreciated at first and appreciated afterward against other major currencies

Exchange rate of EUR against USD declined after a rise. Since beginning of 2008, influenced by successive rate reduction of the Fed, rising inflationary pressure of Euro zone, expected rate hike of European Central Bank (ECB) in July, EUR surged up and reached historical high at 1.5987 on April 22. From July 11, affected by worsen economic situations in European countries caused by expansion of financial crisis, EUR dropped down and closed at 1.2457 at November 20, the lowest point in two years and a half. Then influenced by the factors that European countries carried out economic stimulus plans, the Fed lowered target rate to zero level and so on, EUR rebounded and closed at 1.3978 at year-end, down 4.2% year on year (Figure 2.5).

Exchange rate of USD against JPY rose after a drop first, and then slumped. Since beginning of 2008, due to the unwinding of Yen carry trade and successive rate reduction of the Fed, JPY generally declined and reached 97.39 on March 17, the first time breaking 100 JPY/USD in 12 years. Then exchange rate of USD against JPY rose up owe to the exacerbating Japan's economy. From August 21, since Japan was less infected in financial crisis, interest rate spread of JPY with other major currencies was further narrowed, and unwinding of Yen carry trade surged, JPY rose distinctly. In the end of the year, exchange rate of USD against JPY closed at 90.6, down 18.6% year on year, the highest yearly drop in 20 years (Figure 2.6).

Exchange rate of GBP against USD fluctuated first and then declined sharply. From beginning of the year to mid-July, GBP maintained a

fluctuating trend due to weakened economy, several rate reductions by the Bank of England (BOE) and rising inflationary pressure. Afterward, influenced by the factors that the U.K. economy were stepping into its worst recession since early 1990s and BOE lowered interest rate several times, exchange rate of GBP declined sharply, and closed at 1.4435 on December 30, the lowest point since April 2002. At year-end, exchange rate of GBP against USD closed at 1.4626, down 26.3% year on year (Figure 2.7).

2.1.2 USD appreciated significantly against currencies of emerging market economies

In 2008, USD appreciated significantly against most currencies of emerging market economies. In the first half of 2008, with strong growth of economies in emerging markets and exacerbating inflation situation, currencies of emerging market economies ran steadily. In the second half of 2008, with escalation of financial crisis, global stock market capitalization shrank sharply and foreign capital withdrew from emerging markets for risk-sheltered purpose. Gloomy world economic prospect led to decline of world demands, which further resulted in worsen prospect on export, the foundation for high growth rate of emerging market economies. Affected by above factors, currencies of emerging market economies depreciated more sharply. In 2008, USD appreciated by 34.9%, 16.1%, 15.5%, 30.0%, 24.2% and 4.4% respectively against Korean Won, Thai baht, Indonesian Rupiah, Brazil real, Russian ruble and Malaysian ringgit.

USD depreciated 6.6% against RMB. In the first half of 2008, affected by the factors that China's economic growth rate over 10%, strong expectation on RMB appreciation, rapid growth of foreign exchange reserve caused by international hot money inflow, RMB appreciated at a faster pace, exchange rate of RMB/USD reached the lowest point of the

year at 6.8108 on July 21, depreciated 6.7% compared to the beginning of 2008. In the second half of 2008, with eased inflationary pressure, rising negative impact of financial crisis on China's economy and decreasing inflow of hot money, expectation on RMB appreciation reduced, appreciating pace of RMB slowed down.

2.1.3 RMB's NDFs depreciated

Since early 2008, due to the weakened USD, rising inflationary pressure, rise of reserve requirement ratio by PBC, RMB's one-year NDF swung down and closed at the lowest point of 2008 at 6.271 on March 13. Then affected by the strong appreciation of USD, easing inflationary pressure, slowdown of China's economy, and proactive fiscal policy and moderately easy monetary policy of Chinese government, expectation on RMB depreciation rose up. As a result, RMB's one-year NDF swung up and closed at 6.986 in the year-end, up 4% year on year (Figure 2.8).

Box 2.1 The reasons why JPY appreciated distinctly in foreign exchange market

In recent 30 years, the exchange rate of JPY against USD swung up. Especially within the two years after the *Plaza Accord*, JPY appreciated sharply against USD and basically maintained the rising tendency for the next ten years. After mid 1990s, the exchange rate of USD against JPY fluctuated periodically, and basically between 100-140 JPY/USD. In 2008, JPY was strong, and especially in the fourth quarter, it rose dramatically against USD while most currencies dropped. On December 17, 2008, the exchange rate of USD against JPY closed at 87 JPY/USD, a new low since July 1995. The reasons why JPY rose drastically in 2008 were as follows:

1. Unwinding surge of the Yen carry trade

Since 2000, JPY interest rate has remained very low, so lots of international speculators bought JPY and then changed into high-yielding currencies including USD for investment. The Yen carry trade led to continuous short selling of JPY in foreign exchange market, so JPY remained weak.

After the US subprime mortgage crisis broke out in 2007, the speculative money in the US and Europe was gradually withdrawn and changed into JPY in foreign exchange market to repay JPY debt. This directly contributed to increasing demand for JPY and thereby making JPY strong from the second half of 2007 to the first quarter of 2008.

The fund for carry trade ends in different investment, and trade procedure differs from one another in term of complexity, therefore, arbitrage money has different sensitivity to the market. However, the critical points of exchange rate usually witness unwinding surge, thereby causing larger fluctuation of the exchange rate.

2. When the era of globally low interest rate came, the short selling pressure of JPY disappeared

The arrival of low interest rate era has dramatically squeezed the room for yen arbitrage. In December 2008, the Fed slashed interest rate again, which made the Federal funds target rate approach zero. After several downward adjustments, the interest rates of other major economies were also at historical low. With preconditions for carry trade lost, room for arbitrage squeezed and short selling pressure of JPY in foreign exchange market faded, the foundation was laid for JPY to become strong.

3. The demand for hedging risks in global financial crisis contributed

to JPY appreciation

When global economy enjoys stability, investors are willing to take more risks and money will flow from advanced economies into fast-growing and high-yielding market. But now, when global economic growth has slowed down, and political, economic and financial turbulences struck some regions, the risk-hedging demand for speculative fund has increased. The U.S., Europe, Japan and their currencies are safe havens for various funds to a certain extent.

4. Market-intervening measures by Japanese government were limited, so were the effects

It is a tradition for Japanese government to intervene in the exchange rate of JPY. However, when JPY appreciated in 2008, measures from Japanese government were very limited. The adverse impacts of JPY appreciation on Japan's economy, especially on export sector, were continuously felt. But as JPY interest rate dropped to 0.1%, there was almost no room for further cut, so it was impossible to let JPY depreciate through interest rate adjustment. If Japanese government had directly intervened in the market, the effects would have been very limited. The appreciation of JPY was not caused by short-term speculation, but by integrated function of various facts rising from the global financial crisis.

2.2 Short-term interest rates of major currencies declined distinctly

In 2008, international money market fluctuated greatly and declined after a rising period in general. From January to August, against the background of rising inflationary pressure and worsening economic prospect, the Fed lowered the target of federal funds rate four times, and then kept the rate unchanged; BOE lowered benchmark repurchase rate twice; ECB raised interest rates once, BOJ maintained its uncollateralized

overnight lending rate unchanged. In the middle and late of September, due to the factors that the U.S. mortgage crisis had evolved into international financial crisis, confidence of investors was badly hurt and market liquidity was tightened, short-term interest rate of major currencies surged up. Since October, rate reduction and capital injection were frequently used by major central banks to ease tightened liquidity in money market, so short-term interest rate of major currencies declined sharply.

2.2.1 LIBOR for USD rose after a decline first, then decreased sharply

Since beginning of 2008, influenced by the factors that the Fed lowered target rates four times to 2% and lowered discount rate 25 basis points to 3.25%, LIBORs for USD slumped. Since March 21, with rising inflationary pressure and fiercer turbulence of financial markets, the Fed kept target rate unchanged regarding the balance between stabilizing economic growth and controlling inflation. After September, due to the exacerbation of financial crisis and weakened trust between financial institutions, liquidity of American money market was tightened, which made LIBORs for USD swing up. Since October 11, the Fed successively lowered benchmark interest rates three times to the range of 0~0.25% and took actions to ease the credit crunch, which resulted in sharp decline of LIBORs for USD. At year-end, 3-month LIBOR for USD closed at 1.425%, sharply down 327.8 basis points year on year (Figure 2.9).

2.2.2 LIBOR for EUR rose first, then declined

Since beginning of 2008, influenced by rising expectation on rate hike of ECB, LIBORs for EUR swung up. In order to curb inflation, ECB raise interest rate by 25 basis points to the highest level in seven years. From September, a number of European banks were mired in difficulties and “loan stint” problems became more serious, which resulted in liquidity

squeeze. Consequently LIBORs for EUR soared up. After October, ECB lowered interest rate three times to 2.5% in order to stimulate economic growth. Meantime, varies financial rescue plans were pushed out by countries in EU aiming to ease liquidity squeeze. As a result, LIBORs for EUR dropped down sharply. At year-end, 3-month LIBOR for EUR closed at 2.8938%, down 178.5 basis points year on year (Figure 2.9).

2.2.3 LIBOR for GBP rose first, then swung down

In the beginning of 2008, influenced by increasing expectation on rate reduction of BOE, LIBORs for GBP swung down. Since February, in face of increasing inflationary pressure, investors expected the BOE would stop rate reduction or even raise interest rate. LIBORs for GBP began to rise and then rose more rapidly in late September due to global credit crunch. Since October, in face of economic recession and rising deflation, the BOE lowered benchmark interest rate three times to 2%, the lowest level since 1955. Influenced by this, LIBORs for GBP declined sharply and 3-month LIBOR for GBP closed at 2.77% at year-end, down 322.4 basis points year on year (Figure 2.9).

2.2.4 LIBOR for JPY rose after a decline first, then dropped down

In beginning of 2008, considering coexisting risks of economic slowdown and rising commodity prices, BOJ maintained benchmark interest rate unchanged, which resulted in a slight rise of LIBORs for JPY. Then, affected by the factors that monetary policy committee of BOJ lowered the estimation on Japan's economy and acknowledged the CPI would become moderate, LIBORs for JPY declined. In the middle and late of September, LIBORs for JPY rose greatly due to the decreased liquidity resulting from financial crisis. In the late October, Japan has slipped into recession and BOJ lowered interest rate to 0.3% and then to 0.1% on December 19. Owe to above factors, LIBORs for JPY decreased and 3-month LIBOR for JPY closed at 0.8325%, down 6.3 basis points year

on year at year-end (Figure 2.9).

2.3 Yields of medium and long-term government bonds in major countries rose after a decline at first, and then decreased distinctly

From beginning of 2008 to middle of March, affected by further expansion of the U.S. subprime mortgage crises, deepening worries on recession of the U.S. economy, and slump of global stock markets, yields of medium and long-term government bonds in major countries declined. However, driven by boosted prices of global energy and food, rising inflationary pressure, and rebounding global stock markets, yields of medium and long-term government bonds in major countries swung up. From late of June, since major economies were mired into recession, deflation risk was widened, major central banks had entered into an interest reduction cycle, and risk-sheltered capitals flooded in from global stock markets, yields of medium and long-term government bonds in major countries decreased distinctly.

2.3.1 Yields of medium and long-term government bonds of U.S. rose after a decline first, and then decreased dramatically

From beginning of 2008 to middle of March, resulting from worsening economic prospect and successive rate reduction of the Fed, yield of medium and long-term government bonds swung down. Then promoted by ease worries on U.S. economic recession, growth of U.S. stock market, and weakened expectation on rate reduction, yields of medium and long-term government bonds swung up. From late of June, influenced by the factors that the U.S. subprime mortgage crisis had evolved into serious financial crisis, global stock markets slumped, world real economies continued to worsen, investors bought American government bonds for risk-sheltered purpose, and benchmark interest rate had been

lowered to the lowest level, yields of medium and long-term government bonds swung down and yields of 10-year government bond closed at 2.0607% on December 30, the lowest level in 50 years. At year-end, yields of 10-year government bond closed at 2.2241%, sharply down 180.7 basis points year on year (Figure 2.10).

2.3.2 Yields of medium and long-term government bonds in Germany and U.K. rose after a decline at first, and then decreased sharply

In the first quarter of 2008, similar to the U.S. bonds, yields of medium and long-term government bonds in Germany and U.K. also declined, but the extent was less due to better economic situation and lighter inflationary pressure. Then rising pressure on inflation resulted in increasing expectation on rate hike of the ECB and BOE, thus yields of medium and long-term government bonds in Germany and U.K. rose up distinctly. After late of June, with worsening real economies, yields of medium and long-term government bonds in Germany and U.K. decreased distinctly, in particular, yields of medium and long-term government bonds in Germany closed at 2.916% on December 29, the lowest level since 1989. At year-end, 10-year government bond in Germany closed at 2.944%, down 141 basis points year on year, while 10-year government bond in U.K. closed at 3.017%, the lowest level in 30 years, down 154.8 basis points year on year (Figure 2.10).

2.3.3 Yields of medium and long-term government bonds in Japan rose after a decline first, then swung down

From beginning of 2008 to March, with increasing expectation on rate reduction, yields of medium and long-term government bonds in Japan continued to decline. Then affected by rebound of the Nikkei 225 index and increasing inflationary pressure, yields of medium and long-term government bonds increased. After late of June, influenced by increasing risk on Japanese economic recession and price trends of bonds in the U.S.

and Europe, yields of medium and long-term government bonds decreased. At year-end, yields of 10-year government bond closed at 1.168%, down 33.4 basis points year on year (Figure 2.10).

2.4 Major stock indices declined sharply

In 2008, the U.S. subprime mortgage crisis had evolved into global financial crisis, and further hurt real economies. Under this background, major stock indices fell down to great extent, and registered historical or periodical new lows successively.

2.4.1 The U.S. stock markets fluctuated violently first, then decreased acceleratedly

From beginning of 2008 to the beginning of March, with the impact of subprime mortgage crisis, major stock indices maintained a decreasing tendency. After March 10, the Fed and major western central banks implemented a serious of market rescue measures and some large-scale enterprises released their better-than-expected financial reports in the first quarter of 2008. Inspired by those factors, major stock indices swung up. After May 19, with rising crude oil prices, increasing worries on inflation and economic growth, and slumping stock indices of financial institutions like Fannie Mae and Freddie Mac, three major stock indices swung down until July 15. Later on, with decline of oil price, implementing of "naked short selling" restriction by the Securities and Exchange Commission (SEC) and market rescue measures by government, three major stock indices rebounded. Since September, financial crisis continued to exacerbate, large-scale financial institutions suffered great losses, and real economy became worse. Therefore, major stock indices fell down. On November 20, Dow Jones Industrial Average (DJ) index closed at 7,552, the lowest closing price in five years and a half. The standard & Poor's 500 (SP) Index registered its 11 years' new low at 752. The NASDAQ

composite index closed at 5 years' new low 1,316. Later inspired by implementing of rescue measures and optimistic expectation on Obama's economic group, major stock indices rebounded. At year-end, DJ, SP and NASDAQ closed at 8,776.4, 903.3, and 1,577, down 33.8%, 38.5% and 40.5% respectively year on year (Figure 2.11).

2.4.2 European stock markets swung down

In 2008, tendency of European stock market was Similar to the U.S. stock market. In the first quarter, major stock indices swung down due to the slump of financial stocks (like bank and insurance etc.) resulting from great losses in subprime mortgage products. Then, with the reporting of a few relatively strong financial data, market confidence was boosted and major stock indices swung up. After entering the second half of 2008, as the result that international financial crisis had badly hurt real economies of European countries, sales of car and construction industry sharply decreased, and a number of enterprises cut their workforces, major stock indices fell down dramatically. From late of November, all countries successively launched a series of financial stimulus plans. These plans together with the rate reduction and capital injection measures by central banks propelled the rebound of major stock indices. At year-end, the DAX index, CAC40 index and FTSE 100 index closed at 4.810, 3.218 and 4434.2, down 40.4%, 42.7% and 31.3% respectively year on year (Figure 2.12).

2.4.3 Most stock indices in Asia declined significantly

From beginning of 2008, infected by the factors that the U.S. subprime mortgage crisis had caused turbulence of global financial markets, inflationary pressure was worsen due to the sharp rise of global crude oil and grain prices, as well as some Asian countries such as China, Vietnam, India and Indonesia took tightening monetary policy, major stock indices swung down. Vietnam, Chinese mainland and India were the world top

three in drop range. After September, the U.S. subprime mortgage crisis had evolved into overall financial crisis, and further hurt the real economies. With shrinking importing demands from the U.S. and European countries and increasing capital outflow, major stock indices dropped down rapidly. From late of November, encouraged by the easing inflationary pressure, rate reduction and plans on stimulating domestic needs, major stock indices rebounded.

In 2008, major stock indices dropped over 40% in general. In particular, major indices in Japan, Australia and Shanghai had a decline of 42%, 43% and 65.4% respectively, which were their largest yearly falls in history. HongKong Hang Seng index dropped 48.3%, the worst since 1974 and Korean stock markets had a decline of 41%, the worst yearly drop in 8 years. India, Thailand, and Vietnam stock markets declined 52.4%, 47.6% and 66% respectively (Figure 2.13).

2.5 Global gold price tumbled down after reaching a new high

From beginning of 2008 to middle of March, affected by the dollar depreciation, increasing oil price and great inflow of risk-sheltered capitals and so on, global gold price climbed up, successively renewing record high and reached its historical new high at USD 1002.3 per ounce on March 17. However, with the fluctuation of U.S. dollars, slump of oil price and investors' pullback on profit taking, gold price swung down and reached the lowest price of the year at USD 710.3 per ounce on November 12. Later, gold price rebounded due to the rising geopolitical risks and boosting risk-sheltered demands. At year-end, gold price in London closed at USD 878.2 per ounce, up 5.4% year on year (Figure 2.14).

2.6 Prices of major commodities futures dropped sharply after hitting a new high

In the first half of 2008, propelled by the dollars depreciation, inflow of risk-sheltered capital, increasing demands for commodities, prices of major commodities futures continued to increase and successively renewed record high. CRB index, which reflecting the volatility of future prices, also presented a rising tendency. In the second half of 2008, extended financial crisis made the prospect on world economic growth even worse, and prices for major commodities futures dropped to periodical or historical low.

2.6.1. Global crude oil futures decreased greatly after reaching a historical new high

Since early of 2008, inspired by the weakened dollars, geopolitical tensions in major oil-producing countries, refusal on raising oil production by OPEC members, boosting oil demands and inflow of investment funds, global crude oil futures surged up and renewed record high successively. On July 3, prices of WTI crude oil futures and Brent crude oil futures reached their highest points in history, USD 145.3 and USD 146.1 per barrel respectively. Later, with strengthened dollars, sufficient stocks in crude oil and decreasing demands for crude oil resulting from worries on world economic growth, global crude oil futures slumped. On December 19, price of WTI crude oil futures closed at USD 33.87 per barrel, the lowest price since February 10, 2004. Later, price of Brent crude oil futures closed at USD 36.61 per barrel, the lowest price since May 5, 2004. At year-end, WTI crude oil futures and Brent crude oil futures closed at USD 44.6 and USD 45.6 per barrel, sharply down 53.5% and 51.4% respectively year on year (Figure 2.15).

2.6.2 Copper and aluminum futures swung up to record high, and then slumped

From beginning of 2008 to middle of April, spurred by continuous decrease of LME copper stocks, approaching of consumption high season, supply shortfall, investment funds influx and rising crude oil price, LME copper futures soared up and renewed the price record several times. On April 7, copper futures closed at record high of USD 8,730 per ton. Later, with increase of LME stocks, decreasing importation of Chinese refined copper, ending of consumption high season, and investors' pullback on profit taking, copper futures swung down. Since middle of June, copper futures rose up again due to dollars depreciation, sharp rise of oil price and copper miners' strike in Peru. From July, influenced by continuous increase of copper stocks, dollars appreciation, increasing worries on world economic prospect and demands for base metals, copper futures fell down and closed at USD 2,845 per ton on December 24, the lowest price since November 2004. At year-end, price of London copper futures closed at USD 3,070 per ton, down 54% year on year (Figure 2.16).

Price trend for LME aluminum futures was similar to that of LME copper futures. From beginning of 2008 to early March, aluminum futures exhibited a rising tendency due to the rise of copper futures, as well as tense supply from South Africa and China. Later, worries on the slowdown of the U.S. economy, increase of stocks, as well as weakening consumption against increasing outputs of primary aluminum and aluminum oxide drove the price down. Since late of June, due to the worries on supply and output reduction agreements made by 20 major metallic aluminum smelting factories in china, copper futures swung up and reached record high at USD 3,317 per ton on July 11. Then affected by sharp rise of stocks and expanded financial crisis, aluminum futures declined sharply and closed at USD 1,471 per ton on December 16, the lowest price since October 2003. At year-end, prices of London aluminum futures closed at USD 1,540 per ton, down 36.1% year on year (Figure 2.16).

2.6.3 Rubber futures slumped after reaching record high

As in the off-season, rubber futures fluctuated for the first four months of 2008. From May to July, major rubber producers in south-east Asian and China suffered serious reduction in output and delay of harvest due to the bad weather and crop insect pest, which resulted in continuous decline of rubber stocks. With rising pressure on demand, surge of oil price and so on, rubber futures increased greatly. Shanghai rubber futures and Tokyo rubber futures close at their record high at RMB 28,195 per ton and JPY 349.7 per kilogram on June 25 and 27 respectively. In the second half of the year, financial crisis together with decreased outputs of vehicle industry led to declined demands for rubber. With above factors as well as the decline of oil price, rubber futures fell down. At year-end, Tokyo rubber futures and Shanghai rubber futures closed at JPY 134.6 per kilogram and RMB 10,995 per ton, down 54.9% and 53.2% respectively year on year (Figure 2.17).

2.6.4 Prices of major agricultural products futures swung down after hitting record high

In the first half of 2008, affected by dollars depreciation, boosting demands for biological fuel, snow disaster in south China and output reduction in the U.S. and South America, agricultural futures surged up and renewed record high many times. In the second half of 2008, influenced by the factors that dollars became stronger, oil price declined, international financial markets turbulence further hurt real economies, and grain outputs in some northern countries hit record high, agricultural futures fell down. At year-end, prices of soybean futures, corn futures and wheat futures decreased 19.4%, 10.2% and 18.3% respectively over the end of 2007.

2.7 Prospects for international financial markets in 2009

Though financial systems in developed countries were badly hurt by international financial crisis, gap of financial strength between developed and developing countries is still wide, thus pattern of international financial markets will remain stable in the short run. In 2009, developed countries will continue to lead the pattern of international financial markets, while positions of emerging markets and developing countries will rise further. In 2009, financial crisis will be the vital factor affecting international financial markets, of which turbulence will continue due to uncertainties of the evolving crisis.

At the beginning of 2009, USD will probably appreciate against other major currencies as it did in the end of 2008. But the trend of whole year is uncertain as the economic prospects of major economies is still a mess and with influences of other factors. Under the circumstance of crisis spreading, the robust sheltering demand and implementing of economic stimulus plan will push the appreciation of USD. At the same time, the surge of U.S. fiscal deficit and nearly zero interest rate of USD will weaken the attraction of dollar assets.

With slowdown of world economy, demand for crude oil will decrease, which will restrain the rising extent of crude oil futures in the early stage of 2009. Later, as a result of OPEC's production restraint and recovering of several economies, global crude oil futures will rebound backed by dropping supply and increasing demand. It is estimated that prices of crude oil futures will fluctuate in a lower level in the first half of 2009 and recover distinctly in the second half of the year.

During this financial crisis, price trends of gold differed from USD and crude oil. Due to the uncertainty and complexity on further escalation of

the crisis, global gold price will move towards a more uncertain way. In total, gold price will fluctuate in a high level and probably exceed the previous high.

Since prices of copper and aluminum futures reached their lowest points of recent years in the end of 2008, prices will rebound with higher probability in 2009.

3. Origins, evolution and effects of international financial crisis of 2008

The U.S. subprime mortgage crisis continued to deepen and evolved into global financial crisis in 2008. This financial crisis was considered as the most influential and destructive crisis since the Great Depression of the 1930s. The highly developed integration of global finance increased the complexity and uncertainty of financial market. The market panic, resulted from great losses and shutdown of large financial intuitions, speeded up the spread of the crisis.

3.1 Origins of international financial crisis of 2008

The issuance of U.S. dollars was free of restraints, which led to excess liquidity. Under Bretton Woods System, U.S. dollars should be converted freely into gold at fixed exchange rate. This imposed strict constraints on American monetary policy and fiscal policy. Current international monetary system neglects systematic restraints on the issuance of U.S. dollars. And the increasing demand of U.S. treasury bonds has provided loose international environment for the large-sized budget deficit of the U.S.. In recent years, because of the worse dual-deficits, the U.S. raised loans from all over the world almost unlimitedly, which resulted in the depreciation of U.S. dollars and excess liquidity of the whole world.

Hence, asset bubble arose worldwide, and foreshowed the adjustment of asset price in this crisis.

The U.S. economic pattern of low saving rate and high consumption was unreasonable. In recent years, the decreasing saving rate and high consumption led to dual-deficits and intensified the imbalance of U.S. economic and financial system. The sustainability of large-scale current account deficit caused greater anxiety. The smooth operation of American economy completely depended on financing for dual-deficits from developed financial market. Once the lapse of confidence due to financial crisis brought about credit crunch, the liquidity of financial market suddenly became tightened and capital chains of some fields cracked. As a result, the crisis diffused extensively and damaged financial system and real economy. The U.S. debt economy was the economic origin of the crisis.

The macroeconomic policies were implemented inappropriately. After the burst of internet economy bubble of 2000-2001, the Fed lowered the federal funds target rate 12 times, from 6% at the end of January 2001 to 1% in June 2003, which had stood at this level for one year. Since the first increase in June 2004, the Fed raised target rate 17 times during two years, from 1% to 5.25% in June 2006. The continuous rate cuts since 2001 had exacerbated the global excess liquidity and bred the real estate bubble. After 2004, the Fed had to raise interest rate and the tightened liquidity made the bubble difficult to carry on. On fiscal policy, since 2001, on one hand, the U.S. government stimulated economic growth through large-scale tax reduction. And the economic structure excessively depending on consumption became more imbalanced. On the other hand, the war in Afghanistan and Iraq failed to achieve the anticipated result, which expanded expenditures for the army together with other national securities and increased the fiscal deficit. The U.S. expansionary fiscal

policy was an important reason for formation and enlargement of real estate bubble. Another reason for deterioration of the crisis was that the assistance policy for financial crisis was lack of continuity and stability. In March 2008, U.S. Treasury Department and the Fed guaranteed the acquisition of Bear Stearns. Thus financial market calmed down for a time. In mid September, the Lehman Brothers went bankrupt without sufficient rescue, which hit market confidence. The chain reaction from bankruptcies of financial institutions and turbulence of financial market was promoted. Global economic and financial situation was rapidly deteriorated.

The financial innovation was excessive while financial supervision fell behind and was insufficient. Driven by the interests, financial institutions promoted financial innovation constantly. The increasingly complexity and non-transparency of financial products together with the higher leverage rate of financial institutions raised potential risks of financial market. In the name of innovation, some financial institutions violated the regulations, such as issuing enormous mortgage-backed securities to borrowers unable to repay. The development of financial derivatives based on subprime mortgage separated itself from the real economy demand. The disequilibrium between stimulus and punishment of compensation system in financial sector encouraged the excessive innovation as well as other high-risk operations and enhanced market vulnerability. The regulators of major economies supervised complex and high-risk products inadequately and reposed too much confidence on self-discipline of market. Therefore, the risks could not be kept within limits and led to the financial crisis.

The spread of financial crisis was fueled by some other factors. First, asset securitization brought about originate-to-distribute model. As a result, the risks were priced too low when accumulated. When they were

released, they must be recalculated and spread more widely. Second, rating agencies had defects in assessing and disclosing risks. The rating market was lack of appropriate competition because of oligopoly. The rating results may be overestimated because of the charge method. The rating agencies participated in both designing and rating of securitization products, which caused conflicts of interests. The rating results were procyclical for the rating method excessively depending on models. All of these were unfavorable to prevent financial risks. Third, more and more countries adopted fair value accounting standard. For its procyclicality, fair value accounting standard will promote the spiral dropping of assets price as well as the panic selling. Fourth, banking supervision of *the Basel Capital Accord* is procyclical. According to it, the capital of banks will be overvalued and the risk-weighted assets will be undervalued during period of economic prosperity. So the banks underestimated their own risks in normal times and yet overestimated the risks during economic recession. In addition, *New Basel Capital Accord* does not require banks to maintain capital adequacy rate at 8% according to standards of supervisory authorities. The banks with relatively high level of risk management can decide the capital adequacy ratio by themselves. This will objectively encourage the whole banking sector to lower capital level and go against risk preventing.

3.2 Evolution and effects of global financial crisis

3.2.1 The subprime mortgage crisis brought about four rounds of shocks before evolving into global financial crisis

The global financial crisis had its root in the U.S. subprime mortgage crisis. Four rounds of shocks had broken out before the subprime mortgage crisis evolved into all-round financial crisis in mid September 2008. The first round lasted from mid-March to the beginning of April 2007. Delinquency rates of subprime mortgages rose sharply. As a result,

the New Century Financial Corporation announced that they were on the verge of bankruptcy and then applied for bankrupt protection. The risks of subprime mortgages emerged. The second round lasted from July to August 2007. The Mood's Investor Service and Standard & Poor's Rating Services downgraded a thousand types of subprime mortgage bonds. The Bear Sterns, the fifth largest investment bank in the United States, announced that two of its funds applied for bankruptcy. The largest bank of France, the BNP Paribas declared that they blocked the purchase and redemption of three funds relating to subprime mortgage. The global financial market was in turmoil. The third round lasted from the end of 2007 to March 2008. The large financial institutions reported great losses in assets or write-down of capital and sought for external financing. The Bear Sterns was at the edge of bankruptcy and finally acquired by JPMorgan Chase & Co. The prospect of global economic growth looked bleak and the financial market became more volatile. The fourth round lasted from July to the beginning of September 2008. Fannie Mae and Freddie Mac, the two large Federal home loan mortgage corporations were in financial trouble and taken over by the U.S. government. The U.S. housing market undertook a heavy damage and the confidence of global financial market was damaged.

3.2.2 After the bankruptcy of Lehman Brothers, the subprime mortgage crisis turned into global financial crisis: large financial institutions were acquired or received capital injection; financial market fluctuated distinctly; the U.S. and U.K. financial supervision system underwent reform; the global real economy were deeply influenced

On September 14, 2008, the U.S. government refused to provide guarantee for Barclays and other institutions acquiring Lehman Brothers, the U.S. fourth biggest investment bank. Therefore, related acquirers ended their bid and Lehman brothers filed for bankruptcy protection. On

the same day, the Merrill Lynch, the third biggest investment bank, was acquired by Bank of America. American International Group (AIG), the U.S. largest insurance corporation reported to be in financial trouble. The confidence of financial market was damaged by these negative events, the global stock market tumbled and credit market tightened. The subprime mortgage crisis evolved into all-round financial crisis.

Lehman Brothers, the famous investment bank with a history of 158 years, applied for bankruptcy protection, which became the first piece of domino. From investment banks to insurance corporations, commercial banks, credit card companies and magnates of car industry, large financial institutions and other enterprises faced financial predicament. From the U.S. to Europe and Asia, the global financial market fluctuated violently and the volatility of assets price reached record level. The crisis revealed that serious defects existed in financial supervision system of advanced economies and related reform was brewing. Though governments put forth a series of unprecedented measures to cope with the crisis, the market confidence has not yet recovered. The real economy was influenced obviously. The unemployment rate of advanced economies surged significantly and the real economy was involved in the severest recession since World War Ⅱ. The developing economies faced reduction of external demand, capital flight and depreciation of local currency. As a result, the economic growth slowed down distinctly.

Large financial institutions were acquired or received capital injection and the trend of nationalization became intensified. After bankruptcy, Lehman brothers had to terminate related businesses. Consequently, the capital chain cracked and related financial institutions suffered from more assets losses. After the collapse of Lehman Brothers, a number of large influential financial institutions were acquired or received capital injection. Among them: Merrill Lynch was sold to Bank

of America; AIG was taken over by U.S. government; Wachovia Bank was acquired by Wells Fargo; some businesses of Washington Mutual Inc. was purchased by J.P.Morgan Chase; Citigroup Inc. got capital injection from the government by selling shares; the U.K. government injected in HBOS, The Royal Bank of Scotland together with Lloyds TSB and became their shareholders; the German government bought shares of Hypo Real Estate, IKB Deutsche Industriebank AG and Bayerische Landesbank; Dresdner Bank were merged by Commerzbank; Fortis Group and its divisions sold shares and got injections from governments of Holland, Belgium and Luxemburg together with BNP Paribas; Deutsche Bank, BNP Paribas, Barclays Bank, UniCredito Italiano and other large banks with insufficient capital needed injections from governments and other intuitions as well. During financial crisis, in order to improve financing capability, Goldman Sachs and Morgan Stanley, the two largest investment banks of the U.S., American Express Co., the U.S. largest credit company, and General Motors Acceptance Corporation(GMAC) transformed themselves into bank holding companies with approval. The standalone investment banking model was hit by financial crisis and in the future significant changes will occur for the organization and competition pattern of international investment banks. European and American financial institutions tended to be nationalized because of large-scale injections from the governments.

Some sovereign countries almost fell into national bankruptcy. Iceland was on the brink of national bankruptcy because of the collapse of major financial institutions and then got loans from IMF, Finland, Sweden, Norway and Denmark. Pakistan, Ukraine, Hungry, Latvia and Belarus were trapped in crisis and got commitment of fund assistance from IMF and EU.

Box 2.2 Shocking effects of the current international financial crisis on Iceland, Hungary, Ukraine and Pakistan[28]

1. Before the crisis, Iceland, Hungary, Ukraine and Pakistan enjoyed economic prosperity and wider openness, but meanwhile they were troubled by serious internal and external imbalances

Economy developed rapidly. From 2003 to 2007, GDP growth in Iceland exceeded 25%. From 2000 to mid 2008, Ukraine enjoyed fast economic growth with the average GDP growth above 7%. With its average real GDP growth reaching 4.4% from 2000 to 2006, Hungary also enjoyed fast economic growth. From FY 2000/01 to 2007/08[29], real GDP in Pakistan rose from USD 60 billion to 170 billion. Its per capita income increased from less than USD 500 to more than 1000, and in most years real GDP growth rates were above 7%.

Openness was upgraded continuously. Iceland's economy is bolstered by foreign capital, since it depends highly on external financing. Before 2008, the steel exports, which accounted for 40% of the total export, contributed a lot to Ukraine's economic growth. In 2004, Hungary joined EU. From FY 2000/01 to 2007/08, international trade volume in Pakistan rose from USD 20 billion to 60 billion.

While economy developed, imbalances occurred in internal and external sectors. The economic expansion of Iceland in recent years was achieved at the cost of huge macro-imbalance. At the end of 2007, the ratio of Icelandic financial sector assets to GDP was above 1000% and total external debts to GDP was 550%, which was mainly caused by banking sector. Rapid economic and export growth in Ukraine and rising foreign capital inflow led to unprecedented consumption prosperity and growing current account deficit. The vulnerability of national economy

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[28] Unless specified, the data of Box 1.2 are all from the websites of IMF, relevant central banks and statistics Bureaus.

[29] Fiscal year starts from Jul.1.

was evident, for instance, high inflation, relatively low foreign exchange reserves in comparison with short-term debts, strong reliance on foreign financing in banking sector, balance sheet mismatches, and weakened fiscal situation, etc.. Hungary government had huge deficit, and external debts remained at high level, which accounted for 97% of GDP at the end of 2007. The percentage of current account deficit in GDP climbed each year in Pakistan, and the figures were respectively 1.4%, 3.9% and 4.8% from the FY 2004/05 to 2006/07. Pakistan reentered international capital market in mid 2000 and financed vigorously to make up the current account deficit.

2. Affected by the financial crisis, Iceland, Hungary, Ukraine and Pakistan have suffered from a series of problems. For instance, economic growth slowed down; fiscal deficit surged; current account deficit expanded; inflation continued to rise, etc.

In 2008, as domestic spending slumped, economic growth slowed down in Iceland with its real GDP in the third quarter down 3.4% over the previous quarter. Its current account deficit surged with the figure for the first three quarters in 2008 ISK 101.3 billion more than that for 2007. Meanwhile, Iceland suffered from somewhat serious inflation. Since March 2008, its inflation rate has risen to two digits and there has been no evidence so far to show the weakening of inflation pressure.

Ukraine has been deeply affected by international financial crisis. With sharp decline of commodity prices and deepening of the crisis, Ukraine's real economy has been seriously affected. In the second quarter of 2008, its current account deficit accounted for 7% of GDP. In September 2008, its manufacturing industry slumped by 5%. At the same time, inflation rate remained high.

In 2008, many indicators for Hungary were unsatisfactory. According to the forecast by Hungary's central bank in November 2008, its GDP growth would be 1.0%~ 1.1% in 2008, and the estimate by OECD for the same indicator was 1.4%. Meanwhile, Hungary's central bank predicted that the current account deficit in 2008 would be 7.0% ~ 7.2% of GDP, estimated deficit would account for 2.9% of GDP and CPI would rise by 6.2%.

In FY 2007/08 and the first four months of 2008/09, Pakistan's macro economy worsened distinctly. In 2007/08, its real GDP growth slowed to 5.8%. Fiscal deficit rose from 4.3% in 2006/07 to 7.4% in 2007/08. Inflation climbed and reached 25% in October 2008. Meanwhile, external account deteriorated, with current account deficit amounting to 8.4% of GDP in 2007/08 and international reserves dropping to USD 3.4 billion by the end of October 2008, which was less than one month's import volume.

3. In the international financial crisis, financial systems and asset prices of Iceland, Hungary, Ukraine and Pakistan were considerably shocked

Since the end of 2007, global financial crisis has greatly affected the domestic financial market of Iceland. Within one week, three banks went bankruptcy; Krona depreciated by more than 70%[30]; securities market capitalization shrank by more than 80%. The CDS spreads of Iceland's domestic banks rose sharply. And its sovereign debt rating was downgraded.

Under the interactive influences of global financial crisis and domestic economic weakness, capital inflow into Ukraine declined tremendously

[30] On December 31, 2007, the exchange rate of Icelandic Krona against USD (central parity) was 62 Krona/USD, while on December 31, 2008, the exchange rate was 120.87 Krona/USD, depreciating about 100%.

and deposits flight became a common phenomenon. Just within the first three weeks of October, fled deposits reached at least USD 3 billion, accounting for 4% of Ukraine's deposits. The public confidence in Ukraine's banking system and currency weakened further. From July 1, 2008 to the end of the year, Ukrainian Hryvnia (UAH) depreciated by 68% against USD[31]. With the escalation of the intervention from the National Bank of Ukraine, Ukraine's foreign exchange reserves decreased further, so authorities had to impose controls on foreign exchange to prevent capital flight. Credit rating agencies also downgraded Ukraine's debt rating.

Despite its moderate strength to resist external shocks, Hungary's financial system was still faced with many difficulties. The major evidences were liquidity risk in financial market, external financing risk in the banking sector and worsening domestic lending situation.[32] Hungarian Forint (HUF) depreciated sharply, which dropped by 25% against USD from July 1, 2008 to the end of the year.[33]

From the end of June 2008, liquidity problems began to appear in Pakistan's banking system. From July to October, with the growing tendency of "dollarization" and deposits outflow from the banking sector, liquidity situation worsened further. KSE-100 reached a historical new high at the end of April 2008 and dropped 40%, by the end of August 2008. From July 1, 2008 to the end of the year, Pakistani Rupee depreciated by 28% against USD[34], reflecting the mounting pressure in foreign exchange market.

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[31] On July 1, 2008, the exchange rate of Ukrainian Hryvnia against USD was 4.505, which depreciated to 7.575 on December 29, a depreciation of 68.15%. Source: Reuters.
[32] Magyar Nemzeti Bank, Report on financial stability (Update), October 2008.
[33] On July 1, 2008. the exchange rate of HUF against USD was 151.5152, which depreciated to 188.9645 on December. 29, 2008, representing a depreciation of 24.72%. Source: Reuters.
[34] On January 1, 2008, the exchange rate of Pakistani Rupee against USD was 61.6599, which depreciated to 79.1327, representing a depreciation of 28.34%. Source: Reuters.

4. The aids from the international community to countries in crisis

On November 19, 2008, IMF Executive Board approved a USD 2.1 billion two-year loan plan for Iceland. The plan filled 42% of Iceland's financing gap of October 2008, while the rest is to be filled via bilateral lending. Iceland will use monetary and exchange rate policies, including temporary restrictions on capital flow, to restore confidence in its currency. Other countries also had plans to help Iceland.

IMF, EU and World Bank provided Hungary with a financing rescue package about USD 25 billion, in which IMF offered USD 15.7 billion, EU USD 8.4 billion, and World Bank USD 1.3 billion. Hungary would make significant fiscal readjustments to decrease the huge public sector deficits. Meanwhile, Hungary would establish a rule-based fiscal framework and take measures to increase banking capital and resources so as to help banks face up to the upcoming challenge of economic slowdown.

On November 5, 2008, IMF Executive Board agreed USD 16.4 billion loans for Ukraine, to help the country boost confidence, revive economy and restore financial stability. Ukraine adopted several measures to support implementation of the loan plan, for instance, adopting flexible exchange rate mechanism, injecting capital into the banking system, carrying out prudential fiscal and income policies, etc.

IMF agreed to offer Pakistan a loan of USD 7.6 billion. This 23-month loan will help the government implement stability programs, bringing down inflation and external current account deficit to a more sustainable level, protecting the poor and preserving social stability by significantly tightening fiscal and monetary policies.

Financial market experienced severe turbulence. After the outbreak of financial crisis, financial markets, no matter mature or emerging, fluctuated sharply and saw record-high increase and decline. According to statistics, during one month after collapse of Lehman Brothers (September 15- October 15), there were 10 trading days when the DJ index down by more than 3% and two days of them witnessed more than 7% decline. During this period, as the government responded actively in order to restore market confidence, there were three days that the index increased above 3% and even above 11% on one day. The huge volatility of U.S. stock market was really rare in history. Similar occasions happened in other economies. And emerging markets fluctuated more violently. The Russia stock market was closed temporarily for declining too much several times. The loss of confidence resulting from the collapse of Lehman Brothers enhanced credit crunch in money market and short-term interest rate surged up. From September 15 to October 10, under the circumstance that the Fed lowered the federal funds target rate by 50 basis points, 3-month LIBOR for USD rose from 2.81625% to 4.8188%, up more than 200 basis points within one month. After the burst of financial crisis, the global economic growth was badly beaten. Influenced by weak demand and other factors, prices of major commodities, such as crude oil, base metals and agricultural products, declined tremendously. Price of WTI crude oil futures dropped from USD 100 per barrel at the end of September to USD33.87 per barrel on December 19, down 75% during 3 months. The strong contrast to price hikes in the first half of 2008 showed that the subprime mortgage crisis did not damaged the belief in global growth in the first half of the year, but after the outbreak of global financial crisis, the prospect of global growth became gloomy overnight.

The U.S. and U.K. financial supervision system is on the way of reform. The financial crisis revealed the defects of American and British

financial supervision system: the functions of financial stability and regulation as well as corresponding institutions were not delimited clearly and strengthened properly. The U.S. and U.K. have already put forward reform proposals. The Fed and Bank of England enhanced their functions of financial stability and paid more attention to deposit insurance system as a guarantee for financial stability.

The global growth slowed down significantly. The U.S., Europe and Japan witnessed negative quarter-on-quarter growth of GDP in the third quarter. Along with deep going crisis, the growth rate tended to be worse in the fourth quarter. Due to reduction of external demand, the growth of developing economies, especially emerging market economies that had deeply involved in global market, slowed down more obviously. Besides, because of losses in domestic financial system, advanced economies withdrew capitals from developing economies, which enlarged depreciation risks of local currencies. During financial crisis, Brazil real and Korean won depreciated more than 20% against USD.

The economic policies of major developed countries were changed from market-oriented to government-oriented. Some large influential financial institutions were nationalized. It is valuable to observe whether nationalization will result in changes of management and risk preference of financial institutions.

Box 2.3 Four severe economic and financial crises in history

Four far-reaching and typical economic and financial crises in last century include: the 1929-1933 worldwide economic crisis, the Latin American Debt Crisis of the 1980s, the Japanese economic crisis of the 1990s, and the 1997-1999 Asian financial crisis.

1. The 1929-1933 worldwide economic crisis

The 1929-1933 economic crisis was the worst economic collapse with the most destructive consequences in history. It burst out in the U.S., and quickly spread to countries including Germany, U.K., France and Japan. The reasons of the breakout and spread of crisis were: burst of stock market bubbles, which triggered the crisis; laissez-faire economic policies in western countries; improper countermeasures to the crisis, for example, protectionism, was the important reason for deterioration of the crisis.

Main features of the crisis included: 1) collapse of stock market. Prices of Dow Jones Industrial Average slumped by 82.8% from September 1929 to January 1933, while the drops of Canada, U.K., France, Holland and Japan were 84.5%, 49.3%, 58.7%, 77.1% and 43% respectively. 2) The industrial production declined sharply and the industrial output of the US, U.K., France and Germany decreased by 46.2%, 16.5%, 28.4% and 40.6% respectively from the highest point in 1929 to the lowest point in 1933. Major economies were dragged back to 20-30 years ago with regard to industrial production. 3) Unemployment increased drastically. The unemployment rates of major economies once soared up to 25%. 4) Prices of agricultural products witnessed a record decline. Wholesale prices of wheat fell 70%, and the drop in prices of cotton, sugar, coffee and wool reached 50%. 5) Panic permeated the currency credit system.

In the early stage of the crisis, countries stuck to laissez-faire economic policies, for instance, Hoover's laissez-faire policy in U.S., traditional economic policy in Weimar Germany. These policies worsened the economic crisis. In 1930, Hoover's government adopted a series of countermeasures, including signing *The Hawley-Smoot Tariff Law*, which aimed to protect the U.S. trade. The law substantially lifted tariffs on over 20,000 items, triggering the battle of trade and intensifying the economic recession. This was a harsh lesson.

The crisis began to ease after the implementation of Roosevelt's economic policies in 1933. Roosevelt's economic policies included the enactment of a series of economic and financial acts, which included *the Emergency Banking Relief Act*, *the Federal Deposit Insurance Act*, *the Federal Securities Act*, *the Housing Act* and *the Social Security Act*. These acts imposed persistent influences on the long-term development of U.S. economy and finance. Roosevelt's short-term recovery programs included implementing banking reform, injecting capitals to banking sector, launching public constructions, offering loans and subsidies to commercial and industrial companies by Reconstruction Finance Co., and providing housing subsidies to the low-income group.

2. The Latin American Debt Crisis of the 1980s

On August 20, 1982, Mexico government declared that Mexico would no longer be able to repay its external debts and requested a 90 days rollover of the payments. Soon after other 42 debtor countries also asked to postpone paying debts, the worldwide debt crisis of developing countries, most of which were in Latin America, burst out. The origins of the debt crisis were: fiscal deficits in Latin American countries, trade deficits and overwhelmingly increased external debts. The tightened monetary policy in U.S. and other creditor countries, declining external demand and the capital outflow aggravated the crisis.

The total debts of Latin American countries increased 78% to $431.1 billion from 1980 to 1990 (see table 2.1), while the debt-to-export ratio hit over 300% for years. Besides, approximately USD 27 billion capitals fled Latin American countries each year, worsening debt conditions. Due to the aggravating of debt crisis, the real economic growth rate of Latin American countries fell steeply from an average of 2.5% per year between 1973 and 1980 to –0.4% between 1980 and 1989.

Table 2.1 The debt obligation and the debt-to-export ratio of Latin American countries

(unit:USD 100 million)

Year	1980	1982	1983	1984	1985	1986	1987	1988	1989	1990
Debt Obligation	2427	3334	3610	3777	3909	4109	4461	4282	4227	4311
Debt-to-Export Ratio[1]				291	316	381	369	315	277	261

Note: The Debt-to-Export Ratio is the ratio of the debt obligation to the export. The international standard is lower than 275.

Source: Internet.

With objective of handling the debt crisis, the IMF, the World Bank and the U.S. Treasury reached an agreement on addressing Latin American debt crisis and restoring economic growth. In October 1985, U.S. treasury secretary James Baker proposed a plan that concerned about the continuous growth of developing countries. The key content of the plan was to urge developing countries to adopt tight monetary policies and to fulfill liberalization and marketization of economies, which was the prerequisite to receive new loans. Latin American countries embarked on reforms within this framework and achieved certain progress in the following 2-3 years. However, the crisis continued. After 1987, Latin American and African countries jointly requested for reduction of their international debts. Consequently in March 1989, U.S. treasury secretary Nicholas F. Brady announced *The Brady Initiative*, a new program that shifted the focus to debt reduction, requiring commercial banks to largely reduce outstanding debt of Latin America and other developing countries and international financial organizations to increase loans to debtor countries. Since then, the debt crisis began to relieve.

3. The Japanese economic crisis of the 1990s

Japan's economy plummeted from peak and slid into 10-year-long recession with the bursting of real estate and stock market bubble from February 1991 to October 1993.

Japan's economy was tremendously damaged and trapped in recession. From 1992 to 1998, the average real GDP growth rate of Japan was only 1%, with negative growth rates in 1997 and 1998. Large amounts of Japanese companies closed down during the crisis. The number of bankrupt companies, whose liabilities totaled more than JPY 10 million, continuously increased from 15,100 in 1995 to 19,200 in 1998. Financial institutions once under government's shelter shut down. In 1997, bankruptcy of financial institutions peaked. Even Japan's fourth biggest securities company Yamaichi Securities Co., Ltd. and tenth biggest bank Hokkaido Takushoku Bank bankrupted. Meanwhile, Japan's political situation also experienced a most turbulent time since the World War Ⅱ. In 7 years subsequent to 1993, the Cabinet of Japan underwent six shuffles. Reform measures were either inapplicable or inconsistent, further worsening the economic scenario.

Given the harsh reality of Japanese economic and financial situation, Bank of Japan cut the benchmark interest rate 7 times from 6% to 1.75% during the period of July 1, 1991 to September 21, 1993, and reduced it to zero in 1999. Japanese government carried out 11 economic stimulus plans from 1992 to 1999 with a total of JPY 131.4 trillion[35]. In November 1996, under the principals of freedom, justice and internationalization, Japanese government embarked on a series of institutional reforms, which covered administration, fiscal policy, social security, economic structure and education.

4. The 1997-1999 Asian Financial Crisis

On July 2, 1997, Bank of Thailand declared to abandon the fixed exchange rate regime, which had been in action for over a decade, and float the exchange rate of Thai Baht (THB) against USD. This event

[35] Resource: *Report of Economic Planning Agency of Japan*.

triggered the Asian financial crisis, which soon spread to the entire Southeast Asia, and gradually impacted Japan, Korea, Hong Kong China, Russia, and other countries and regions. The root causes for this crisis were as below. The current account deficit of these economies accumulated. The external debt increased drastically. By the end of 1996, debts of Thailand, Malaysia, Indonesia, Korea and Philippines owed to banks in industrialized countries amounted to respectively 53.61%, 26.33%, 24.85%, 22.44%, and 15.93% to their GDP, which were far above the international caution level of 20%. These countries thus became vulnerable to international speculations. Though the rescue measures of the IMF did have positive effects, in terms of relieving short-term debts and increasing foreign exchange reserves to restore confidence of international investors, over-tight macroeconomic policies delayed the economic recovery.

Affected by Asian financial crisis, foreign exchange markets and stock markets in Southeast Asian countries and regions fell tremendously in turn, and financial systems even societies and economies in these countries suffered serious losses. From July 1997 to January 1998, most currencies in Southeast Asian countries depreciated 30%~50%, with Indonesian Rupiahs (IDR) shrinking over 70%. At the same time, stock markets in these countries and regions slumped by 30%~60%. The economies stuck in severe recession.

During Asian Financial Crisis, the IMF offered USD 35 billion financial aid (by the end of May 30, 2000) to most severely impacted countries including Indonesia, Thailand and Korea, with additional conditions that these countries should tighten macroeconomic policies, open domestic financial markets, and so on. The World Bank, the Asian Development Bank and other countries provided approximately USD 31.8 billion (by the end of May 30, 2000) to above-mentioned countries. Governments in

Asia also restructured financial systems. For example, Indonesian government closed private banks such as P.T.Sejahtera Bank Umum, Bank Djakarta, Bank Istismarat and Bank Internasional Indonesia, and merged four state-owned banks including Bank Pembangunan Indonesia (Bapindo) , Bank Bumi Daya (BBD), Bank Expor Impor (Bank Exim) and Bank Dagang Negara (BDN) into Bank Mandiri. Thai government cleared off 56 financial companies, purchased 90% shares from 4 (about 1/3 of the overall number) commercial banks that were seriously insolvent and sold it to private corporations, and practiced large-scale M&A of financial institutions. To ease the short-term financing pressure on financial system, Thai Treasury issued THB 300 billion treasury bonds to rescue banks and financial companies. Thai government also reduced the rate for bad debts provision of commercial banks from 7% to 6%, and shortened the foreign exchange deposit of exporters from 180 days to 120 days. To back up export companies, Bank of Thailand allocated THB 20 billion as fund to provide low interest rate loans to major domestic export companies. Thai government later allocated THB 70 billion to companies to solve the problem of fund turnover.

4. Bailout actions in the crisis

Governments and central banks showed great initiative and creativity to cope with the crisis after its breakout. The variety and range of bailout policies and measures were unprecedented, and these bailout actions fell into eight categories as below. **First, inject liquidity to markets.** It involved providing base money, lending out national debt, granting urgent loans to specific institutions, lending foreign currency funds to other countries, intervening in foreign exchange market, and so on. In this crisis, governments innovated vigorously in liquidity injection and deployed a series of new financing tools, which to some extent shortened the time lag of traditional open market operations in term of liquidity

provision, and saved the reputation of institutions that applied for commercial paper discount. **Second, reduce the benchmark interest rates.** Since September 19, 2007, the Fed had cut the federal funds target rate for continuous 10 times. By the end of 2008, the Fed lowered the rate to zero level. The central banks of other major economies also drastically cut down their benchmark interest rates. **Third, promote M&A among financial institutions and increase capitalization.** In the crisis, many financial institutions saw their capital depleted by losses in assets. To stabilize financial system, governments and related institutions encouraged and promoted M&A among financial institutions. Financial institutions were encouraged to accept funding from SWF in early days of crisis, and to conduct market-oriented restructure to be sheltered from bankruptcy. **Fourth, guarantee debts.** Guarantee deposit, bonds, and bonds issues by financial institutions, etc.. For instance, the U.S. government undertook debt risks of Fannie Mae and Freddie Mac; U.S. and European countries raised the cap on deposit insurance amount; U.K. guaranteed bonds issued by banks. **Fifth, purchase non-performing assets.** The governments intervened in reverse auction of ABS and hold until maturity. This action not only increased liquidity supply and eased the debt burden of financial institutions, but also helped confirm the losses of financial institutions and speeded up their asset disposal process. **Sixth, purchase shares and refine capital structure by governments.** After the impact of financial crisis spread to Europe, European countries, such as U.K. and France, came to the rescue by purchasing shares of involved financial institutions. The U.S. government also purchased shares of AIG, Citigroup,etc.. **Seventh, improve accounting standards.** According to fair value accounting standards, the more asset price falls, the less net capital value remains. Hence institutions are more inclined to sell assets, which further cut down asset price. This vicious circle dragged more and more financial institutions into the mire. Due to the harsh circumstances, some countries temporarily relieved fair value accounting

standards to ease the assets selling-off pressure of financial institutions and stabilize asset prices. **Eighth, revise the trading system of financial markets.** The measures included restricting short selling, modifying up/down limit, temporarily close markets, etc..

Box 2.4 Innovation of monetary policy tools in the crisis

The Fed and other central banks in major economies have responded aggressively with interest rate approach to seek balance between price stability and economic growth since the emergence of the financial crisis in 2007. They also transcended traditional roles as the lender of last resort and innovated monetary policy tools, in order to cope with continuous credit crunch, ease liquidity pressure on financial market, and ensure the stability of financial system.

1.Tools innovation of the Federal Reserve

Set up Term Auction Facility (TAF) to supplement discount window. On December 12, 2007, the Fed approved of the establishment of a Term Auction Facility program, which aimed at depository institutions that are judged to be in a sound financial condition. TAF allows the Fed to auction collateral-backed term funds of 28-day or 84-day maturity to depository institutions. Each month, there will be two auctions. Each TAF auction will be for a fixed amount, with the rate determined by the auction process. All securities that are eligible to borrow from the discount window will be eligible for a TAF auction.

Set up Term Securities Lending Facility (TSLF) to help primary dealers replace less liquid assets. TAF only covers depository institutions, while investment banks and hedge funds that were severely impacted could not benefit from this program. To address this issue, on March 11, 2008, the Fed announced the establishment of TSLF. TSLF is

an agreement of asset swap that will offer Treasury general collateral in auction to the New York Fed's primary dealers, mostly investment banks, in exchange for eligible collateral for a 28-day term. TSLF consists of Schedule 1 and Schedule 2 in term of categories of collaterals by primary dealers. Eligible collaterals presently include treasury bonds, Federal agency securities, and MBS issued by Federal agencies in Schedule 1. Schedule 2 includes all eligible collaterals in Schedule 1, and all investment grade bonds.

To increase the flexibility of TSLF, allow more term option to primary dealers, the Fed set up "Term Securities Lending Facility Options Program" on July 30, 2008. Financial institutions endowed with this option may borrow high-liquidity securities from the Fed by collateralizing assets in Schedule 2. The establishment of TSLF not only relieves the liquidity pressure of related financial institutions, but also has no direct impact on reserve level of banking system, and needs no sterilization in open market operation.

Set up Primary Dealer Credit Facility (PDCF) to open discount window to primary dealers. To mitigate the shock of Bear Stearns event on financial market, on March 16, 2008, the Fed set up PDCF to provide the access to discount window, which was traditionally only open to depository institutions, to eligible primary dealers. PDCF mainly offer overnight loans with the maximum of 120 days. The Fed would charge extra fee for loans over 30 days. Compared with open market operation, the range of eligible collateral in PDCF is wider. On September 14,2008, Fed expanded collateral to all collateral eligible for pledge in tri-party repo arrangements.

Set up Asset Backed Commercial Paper Money Market Mutual Fund Liquidity Facility (AMLF) to support commercial paper market by

backup of money market mutual fund. In September 2008, the application for bankruptcy of Lehman Brothers shocked the Wall Street and investors in large amounts withdrew from MMMF. To cope with this issue, the Fed approved the establishment of AMLF on September 19, 2008, providing depository institutions and bank holding companies at discount rate with non-recourse loans, which helped them to purchase Asset Backed Commercial Paper (ABCP) from MMMF. The measure enabled MMMF that hold ABCP to satisfy the withdraw demand of investors, and indirectly ensured the liquidity of ABCP market.

Set up Commercial Paper Funding Facility (CPFF) to directly support commercial paper market. The increasing unwillingness of MMMF under liquidity stress, and other investors to purchase commercial paper (particularly long-term commercial paper) led to the sharp decline of commercial paper issuance and the distinct rise of long-term commercial paper rate. Meanwhile, the amount of refinancing commercial papers as a percentage is continuously rising. As a result, commercial paper market almost lost its financing function. On October 7, 2008, the Fed announced the establishment of CPFF to address this issue. CPFF directly purchased highly rated dollar-denominated three-month unsecured and asset-backed commercial paper from eligible issuers via Special Purpose Vehicles. By doing so, it provided daily liquidity for commercial paper issuers such as banks, corporations, and local governments in the U.S. .The Fed loans will be collateralized by all of the assets of the Special Purpose Vehicles. Special Purpose Vehicles guarantee unsecured commercial paper with pre-paid fees of issuers and other securities that are eligible for the Fed.

Set up Money Market Investor Funding Facility (MMIFF) to ease liquidity stress of money market. On October 21, 2008, the Fed announced the establishment of Money Market Investor Funding Facility

to ease liquidity stress of money market and enhance the ability of money market funds to cope with further redemption. The Fed will provide senior secured funding to a series of special purpose vehicles established by the private special purpose vehicles (PSPVs) to finance the purchase of certain money market bills from eligible investors. Eligible investors include mutual funds and certain other money market investors. Eligible assets include U.S. dollar-denominated large-value transferable certificates of deposit, bank notes and commercial paper issued by highly rated financial institutions. The remaining maturities of eligible assets are no more than 90 days. The Fed loans under the MMIFF will be fully collateralized by all of the assets of the Special Purpose Vehicles. PSPV will finance its purchases of eligible assets by issuing asset-backed commercial paper.

Set up Term Asset-Backed Securities Loan Facility (TALF) and Purchase Plan of related securities to unfreeze credit market. On November 25, 2008, the Fed established TALF, which will offer USD200 billion non-recourse funding, with an effort to unfreeze credit market. The recipient includes institutions holding eligible securities, companies, even individuals. Eligible Collaterals are U.S. dollar-denominated AAA-rated asset-backed securities, which are based on newly granted auto loans, student loans, credit card loans, and small business loans guaranteed by U.S. Small Business Administration. The TALF indirectly extends the financing range of the Fed to other certain credit markets by funding residents and small businesses. On December 19, the Fed revised the TALF. The amendments are: extending the term of TALF from one year to three years, further articulating eligible collaterals, and deciding to offer loans to all eligible institutions rather than distributing funds via auction. Besides, the Fed planned to purchase up to USD100 billion securities issued by Fannie Mae, Freddie Mac and Federal Home Loan Banks, and purchase up to USD500 billion asset-backed securities

guaranteed by Fannie Mae, Freddie Mac and Ginnie Mae.

Pay interest to reserve of depository institutions and improve the flexibility of the Fed's policy operation. In order to improve the flexibility of the Fed's policy operation and allow the Fed to provide infinite liquidity to markets without reducing the federal funds target rate, on October 6, 2008, the Fed announced to pay interests to required and excess reserve of depository institutions. The interest rate paid to required reserve is 10 basis points lower than average federal funds target rate. The interest rate paid to excess reserve is 75 basis points—adjusted to 35 basis points on October 22—lower than the minimum federal funds target rate during the deposit of reserve. On November 5, the Fed again revised the calculating method of interest rate paid to required and excess reserve, with an effort to encourage the market to finance at a rate that is more close to the target rate. The interest rate paid to excess reserve of depository institutions is equal to the minimum of federal funds rate that is actually executed during the deposit of reserve. And the interest rate paid to required reserve is equal to the medium of federal funds rate that is actually executed during the deposit of reserve.

2. Tools Innovation of Other Major Central Banks

The Bank of England launched Special Liquidity Scheme and reformed current rediscount mechanism. To improve the liquidity position of the banking system and restore confidence, on April 21, 2008, the Bank of England launched Special Liquidity Scheme. The scheme allowed banks to swap their less liquid and high quality mortgage-backed securities for U.K. treasury bonds with the BOE (provided by U.K. Treasury to BOE) by paying certain fees. The swap term is one year, and can be extended to three years. The expiration date of the scheme was extended to January 30, 2009. On October 20, 2008, Bank of England reformed its current rediscounting mechanism. The original standing facilities are replaced

with Operational Funding Facility, and Discount Window Facility is established. The function of Operational Funding Facility is to provide financing to financial institutions that is in shortage of funds for certain technical issues, such as delay in settlements, etc.. Operational Funding Facility helps ease daily fluctuation of market rate, and sustains the market rate 25 basis points above the target rate during the deposit of reserve. The function of Discount Window Facility is no longer to satisfy only the daily liquidity demand of financial institutions. The central bank will practice differential interest rates according to the type of collateral and the degree of urgency. The rate ranges from 50 to 400 basis points plus the target rate.

The Bank of Japan paid interest to excess reserve, and provided financing to companies. On October 31, 2008, the Bank of Japan announced the establishment of the Complementary Deposit Facility, which means to pay interest rate at 0.1% to excess reserve deposited in BOJ account. The facility is to be expired on March 2009. The measure greatly lifted the opportunity cost of hoarding funds by banks, allowed the Bank of Japan to inject liquidity while maintaining the level of interest rate around the benchmark rate, and dismissed the concerns about overnight rate fluctuation. Since Japanese economy continued to worsen, the financing stress of companies intensified, and the Bank of Japan adopted certain amounts of measures to support corporate financing. One is to introduce Special Funds-Supplying Operations to Facilitate Corporate Financing. This operation is to offer infinite funding to financial institutions at an uncollateralized overnight call rate, according to the value of collateralized corporate bond. Another measure is to directly purchase commercial paper temporarily.

European Central Bank held auctions at fixed rate for main refinancing and long-term refinancing operations. On October 8, 2008, European

Central Bank decided to hold fixed rate (main refinancing rate) bid in weekly main refinancing operation from October 15. Financial institutions can be sufficiently financed by providing full collateral. The program is to be expired by the end of March 2009. On October 15, 2008, European Central Bank decided on two measures. First, to expand the range of credit operation collaterals in euro zone, and also to increase the liquidity supply. The measure is to be expired by the end of 2009. Second, to lift the frequency of long-term refinancing operation, to increase the supply of long-term refinancing, and to hold fixed rate bid in all long-term refinancing operations and fulfill the full allotment of funds. The measure is to be expired by the end of March 2009. In a whole, European Central Bank based its operation on regular open marker operations, and applied methods such as unusual fine tuning, expansion of long-term refinancing operation, and Term Auction Facility, etc., to ease the financial strain of financial markets in euro zone.

According to the development of bailout organizations and bailout policies, the bailout process has two phases.

Indirect Bailout (from August 2007 to September 2008). The signal for this stage was that the Fed and ECB jointly injected liquidity to markets. In this stage, the crisis was entirely confined to the U.S. except a few bailouts in U.K. and Germany[36], most large-scaled bailout actions were witnessed in the U.S. and the Fed was in charge. Since September 19, 2007, the Fed lowered the federal funds target rate 7 times consecutively, down from 5.25% to 2%. Meanwhile, the Fed refined discount window and reformed liquidity supplement mechanism, in order to transfer liquidity more effectively to seriously impacted investment banks, and to prevent liquidity shortage and transaction suspension resulted from markets panics. For large financial institutions that trapped in trouble, the

[36] U.K. government nationalized Northern Rock. Germany government injected capitals to IKB, etc.

Fed promoted it to be merged by other financial institutions. (take the acquisition of Bear Stearns by JP Morgan as an example).

Direct Bailout (from September 7, 2008 to today). The signal for this stage is that the U.S. government took over Fannie Mae and Freddie Mae (also referred to as "F&F" as below) on September 7, 2008. Once stable U.S. financial conditions have significantly changed since September 2008. As the real estate sector continued deteriorating, F&F suffered huge losses. Given the importance of F&F in U.S. financial system, the government announced to take over F&F and fully backstop their operation by providing USD 200 billion, extending credit line, and purchasing MBS issued by F&F. Takeover of F&F signalized that U.S. government had fully embarked on bailouts. The Treasury also joined in to be the leading force in bailout actions. On September 17, the Treasury announced the launch of Supplementary Financing Program to help the Fed improve the balance sheet, and to provide funds for open market operations. To eliminate the crisis, the Fed broadened the range of collateral in Primary Dealer Credit Facility (PDCF), and offered non-recourse loans to depository institutions and bank holding companies to help them purchase high-quality Asset-Backed Commercial Papers (ABCP) from money market funds. In addition, the Fed planned to buy Federal agency discount note from primary dealers.

Besides, the Fed extended currency swap lines with major central banks such as ECB and BOJ to consistently provide liquidity to the market. Out of the concern that the bankruptcy of AIG might wreak havoc on financial markets, particularly the market of credit default swaps, the Fed offered $85 billion emergency loan to AIG. To stabilize the stock market, SEC enacted 3 new regulations on September 17 to restrain "naked short selling"[37] and suspend short selling of financial stocks.

[37] Naked short selling is the operation of short selling without holding stocks.

Other countries and regions including Japan and European countries adopted similar measures in well-sequenced order. Due to the excessive volatility of stock market, countries like Russia and Indonesia once suspended stock market transactions, while Pakistan and Russia tightened the price limit of stock market. In order to shore up confidence and strengthen the risk resisting capacity of financial institutions, on September 20, the U.S. Treasury set forth a Troubled Asset Relief Program (TARP), which provided USD700 billion to purchase troubled assets. The revised version of TARP was finally passed on October 6. As the crisis spilled over across the globe, other countries proposed policy responses of their own. In European countries, such as U.K. and France, governments took over shares of financial institutions, and fully guaranteed debts of banks. After October, the U.S. government purchased preferred stocks of several financial institutions that carried no voting rights. Besides directly holding shares of listed financial companies, and providing funds to other non-depository financial institutions, the U.S. government shifted bailout emphasis to consumer credit. The government planned to loosen standards in credit card loans, auto loans, and student loans, and reduced the amount of foreclosures. Meanwhile, the Fed switched its focus to money market. Besides cutting the federal funds target rate to 1%, and increasing the scale of bank loans auction up to USD900 billion, the Fed authorized five Special Purpose Vehicles to purchase up to USD540 billion Certificates of Deposit and Commercial Paper held by monetary funds. The Fed also structured Commercial Paper Funding Facility to directly purchase 3-month Unsecured Commercial Paper and Asset-Backed Commercial Paper from eligible issuers.

On October 14, Federal Deposit Insurance Corporation announced that it would guarantee up to USD2 trillion U.S. banks' debt and savings deposits, remove the current USD250,000 insurance limit on

non-interest-bearing transaction deposit accounts, and provide full deposit insurance coverage for all non-interest-bearing accounts. On November 22, FDIC approved a bank-debt guarantee program to guarantee USD1.4 trillion in banks' senior uncollateralized debt.

The run on the U.K. bank Northern Rock exposed the deficiency in British deposit insurance system. Thanks to the sound deposit insurance system, U.S. economy and euro zone economies avoided severe depositor runs against the backdrop of financial crisis. As the crisis permeated the globe, international cooperation in financial rescue strengthened. More and more countries signed or extended currency swap agreement, and held conferences to coordinate bailout actions. The IMF and the World Bank also joined in financial rescue. The IMF created Short-Term Liquidity Facilities to establish quick-disbursing financing for countries like Ukraine, Hungary, Iceland and Pakistan. As more and more governments, central banks and international financial organizations joined in, the financial rescue strengthened across the globe.

As a whole, global bailout actions have achieved certain progress and saved financial system from collapsing. However, we still confront tough tasks. Though tons of measures have been taken, the crisis still deepens and spills to the severely impacted real economy. Confidence is still fragile, and the economic and financial outlook is highly uncertain.

Box 2.5 Sovereign Wealth Funds in the financial crisis

In recent years, due to the huge trade surplus and the soaring prices of raw materials such as crude oil, East Asian and OPEC countries accumulated large-scaled foreign exchange assets. Sovereign Wealth Funds (SWFs) of these countries also experienced striking increase.

For that the SWFs of most developing economies held little subprime mortgage products, the bursting of subprime mortgage crisis in 2007 didn't attach severe negative impact on them. The SWFs performed actively by purchasing equities of many world-renowned financial institutions before the subprime mortgage crisis evolved into global crisis. However, as the negative impacts of the crisis expanded, the willingness of SWFs declined with regard to investment. Certain SWFs even shifted the focus back to home markets.

1. In the early stage of the crisis, SWFs acted vigorously

Since the bursting of the subprime mortgage crisis in 2007, major financial institutions in U.S. and the Europe suffered more and more losses as well as the enlarged urgency in capital supplement which softened the attitude of U.S, and EU towards SWFs. During this period, SWFs actively invested in equities of financial institutions, helping them quickly restore the capital and keeping them away from financial crisis. It was estimated that, from the second half of 2007 to the first 6 months of 2008, the financial equities in advanced economies purchased by global SWFs reached approximately USD 50 billion (see table 2.2).

SWFs played a positive role in stabilizing confidence and strengthening the risk resisting capability of financial institutions. In general, the minority equities held by SWFs would not lead to the shift in control of financial institutions, and would not intervene in daily operation of financial institutions. For these reasons, SWFs were popular among financial institutions and original shareholders.

Table 2.2 The capital injction of SWFs in U.S. and european financial institutions in the early stage of the crisis

Recipient Institution	SWFs	Percent of Shares	Amount (USD100 million)

Citigroup	Abu Dhabi Investment Authority	4.9	75
Citigroup	The Government of Singapore Investment Corporation	3.7	68.8
Citigroup	Kuwait Investment Authority	1.6	30
Merrill Lynch	Kuwait Investment Authority	3.0	20
Merrill Lynch	Korea Investment Corporation	3.0	20
Merrill Lynch	Temasek Holdings	9.4	44
Morgan Stanley	China Investment Corporation	9.9	50
Barclays Capital	Temasek Holdings	1.8	20.05
UBS	Qatar Investment Authority	1.0	6.03
UBS	The Government of Singapore Investment Corporation	9.8	97.5
UBS	Saudi Arabian Monetary Agency	2.0	18
Total Amount			449.38

Source: Sovereign Wealth Fund Institute. Update to April 1, 2008.

2. In the fully breakout- stage of the crisis, SWFs acted cautiously.

As the financial crisis continued deteriorating in the second half of 2008, the investment of SWFs tended to be more prudent with lower willingness. Certain SWFs shifted the direction back to home countries. The underlying reasons are:

First, the huge losses resulted from precedent investment put SWFs under significant financial stress. In the second half of 2008, with aggravation of credit subprime mortgage, financial institutions announced losses in huge amounts, and their market value sharply shrank. SWFs' balance sheets were severely impacted, triggering public pressure from home countries. For this reason, SWFs currently acted more cautiously.

Second, the change of macroeconomic scenario in home countries made

SWFs switched their investment directions. As the financial crisis spread to real economy, major advanced economies stuck in recession. Global market demand shrank. The export of East Asian countries slowed down. Prices of major commodities significantly declined. All resulted in a decrease in the trade surplus of SWFs' home countries. Furthermore, short-term capital fled back to the U.S. out of risk aversion. In this circumstance, most home countries of SWFs were no longer highly capitalized. Certain amounts of SWFs chose to switch their focus back to home countries to ease current economic difficulties.

Third, the uncertainty of international macroeconomic conditions and systematic environments also declined the willingness of SWFs to invest.

5. Behavior criteria of international financial markets

5.1 Compensation system of Wall Street financial institutions[38]

The compensation stimulation mechanism, where trade-off between the risks and returns is skewed, is easy to strengthen risk preference of top executives and traders in financial institutions, who often pursue short-term interests while neglecting long-term risks and even moral hazards.

5.1.1 Compensation system of Wall Street financial institutions intensified risk preference of these institutions

In compensation system of Wall Street, the compensation of top executives includes basic salary, bonuses, shares, options and other company benefits. Among them, bonuses are linked directly to current profits, accounting for 22% of the compensation; shares and options are decided by stock prices of the company, accounting for 63%; basic salary

[38] Compensation system of Wall Street represents compensation system of financial institutions in Western developed countries.

only accounts for 15%. The compensation of traders is connected with performance of the current year as well. According to statistics, the five biggest security companies of Wall Street paid USD 39 billion to all employees, USD 210,000 per capita, accounting for 60% of the five companies' profits.

The reasons for high executive compensation given by boards of Wall Street are: firstly, financial sector with highly competitive nature heavily relies on human resource and must give employees incitement of high levels; secondly, in order to gain more repayment of stock equity, the company shareholders must share the profits with top executives so the interests of shareholders and managers can coincide; thirdly, with decentralized stock ownerships, it is easy for management in powerful position to obtain excessive compensation in negotiation. Profits sharing mechanism distorts risk preference of Wall Street companies, and will lead to potential moral hazards.

According to current stimulation model, the compensation of executives, traders and common employees of Wall Street companies are connected to current profits and stock prices. Therefore executives, traders and common employees think highly of short-term profits and pay insufficient attention to long-term risks. On the occasion that the company takes risks and makes profits, executives, traders and common employees can acquire highly returns. While risks leak out and make loss with financial institutions, the losses of employees are limited. So executives and common employees of Wall Street companies possess strong motivation to engage in high-risk businesses. Some of them even hide the risks and violate regulations, which poses potential threats to financial system.

5.1.2 Introspection on compensation system of Wall Street financial

institutions

International community expresses the concern about disequilibrium between risks and rewards of Wall Street compensation system and requests to limit excessive executive compensation.

Executive compensation must be implemented after passing risks assessment of supervisory authorities. Executive compensation system of financial institutions, relating to incentive and restrictive mechanism, has significant influence on controlling of financial risks. In recent years, international financial institutions have introduced stock incentive system. It is common for financial executives to have excessive compensation and too much incitement, which brings hidden dangers to stable management of financial institutions. Hence, supervisory authorities should regulate financial executive compensation system and prevent insufficient stimulation as well as excessive incitement that will make executives take too many risks.

Executive compensation should be carried out after complete release of business risks. Before that, parts of compensation should be frozen as collateral. Because of more complex financial trades and secluded risks of financial products, on several occasions, risks emerge and financial institutions suffer from losses after top executives attaining high repayment. The reason is that executive compensation mainly depends on prompt achievement not long-term performance. Management of financial institutions has motivation to cover risks and losses. Before complete release of business risks, parts of compensation should be frozen as collateral to unify the long-term interests of company with interests of employees.

Financial institutions should intensify internal risk-control while

implementing compensation stimulation. Firstly, improve corporate governance mechanism of financial institutions, enhance authoritativeness and independence of risk-control department and strengthen internal audit and external regulation system. Secondly, adopt job rotation and double-auditor system in order to prevent internal risk-control to be a mere formality. Thirdly, avoid excessive and unlimited power of a few managers. Fourthly, limit jurisdiction of traders, build up effective afterwards supervision system and improve risk-control and management system.

5.2 Behavior criteria of credit rating agencies

5.2.1 The independence, transparency and credibility of credit rating agencies were called into question

In April 2007, the U.S. subprime mortgage crisis broke out. Afterwards, the crisis extended to the U.S. and global financial markets and evolved into global financial and economic crisis. The irresponsible rating on mortgage-related products of rating agencies was one inducement of the crisis. The Bloomberg statistics indicated that about 75% mortgage-related securities received AAA ratings. Pension funds, insurance companies and other conservative institutional investors all purchased this kind of products. Obviously rating agencies underestimated default risks of mortgage-related securities and those investors with blind faith in relevant rating results suffered great losses. The eruption of subprime mortgage crisis exposed the systematic bias of rating outcomes. The independence, transparency and reliability of three biggest rating agencies, including Moody’s, Standard & Poor’s and Fitch Ratings, were generally questioned.

Since September 2007, the U.S. Congress and relevant departments including the SEC carried out deep investigation on three biggest rating

agencies about their role in the formation of subprime mortgage crisis. In July 2008, the examination report of SEC declared that the three biggest rating agencies disobeyed internal procedures during rating mortgage-related products with high risks and failed to avoid conflicts of interests. SEC found that some rating agencies allowed analysts who rated the issues to participate directly in fee discussions and two rating agencies' staff increases did not appear to match their percentage increases in MBS volume. Besides, the rating agencies did not always disclose or document the process of rating complex ABS.

5.2.2 Existing problems of credit rating agencies

The query on independence, transparency and credibility of rating agencies has a long history. For example, in December 2001, Enron Corporation, the U.S. largest energy company, filed for bankruptcy protection. But the three biggest rating agencies did not give adequate cautions about credit quality of Enron Corp. before. The systematic bias of rating outcomes of mortgage-related securities was the concentrated expression of the existing problems on current credit rating system.

Current charging system of credit rating industry brought about conflicts of interests. Under current charging system, the security issuers pay credit rating agencies for the rating according to size or market value of the security. This charging system converts credit rating agencies from independent third party to interested parties associated with security issuers and leads to conflicts of interests. The connection of interests manifests in two ways. On one hand, on the purpose of pursuing businesses from large companies, credit rating agencies may adopt improper competition such as pre-rating[39] and give rise to rating inflation. On the other hand, small company that just can afford one rating and

[39] Pre-rating: Before security issuer makes its choice, the rating agency discloses the possible rating to the issuer. Obviously issuers will choose the agency with highest rating. For it is a long-term process of repeated games, all credit rating agencies will provide ratings exceeding real level finally.

therefore can only choose one rating agency usually takes an absolute weak position during the game with credit rating agency. In recent years, rating agencies have developed extensive consulting businesses relating to credit rating, such as judging whether M&A will result in adjustment of credit ratings. The trend has attracted new attention to conflicts of interests in credit rating industry as people concerned that conflicts of interests in accounting firms will appear in credit rating agencies.

The interest appeals of investors and regulators of credit rating agencies are inconsistent. At first, the function of credit rating agencies was just to provide useful information about credit risks to investors. Afterwards, regulators promoted these ratings as regulation standards for financial institutions to make sure that certain investors can invest in a specified class of financial products and some investors cannot buy particular classes of securities. Inherent contradiction occurs because when the interest appeals of investors and regulators are inconsistent, it is hard for rating agencies to keep neutral and objective.

The oligopoly pattern of international credit rating market results in systematic bias of rating results. Current competition pattern of international credit rating market is that the three biggest rating agencies almost monopolize global major rating markets. Local rating agencies of other countries and regions only share a certain portion in local and specified markets and are not able to compete with the biggest agencies. Besides, the oligopoly pattern easily leads to systematic bias of rating results[40]. This is profoundly manifested in the following aspect: the sovereign and security ratings of major developed countries are overestimated meanwhile those ratings of other countries are

[40] After Enron scandal, the U.S. Congress and relating departments carried out a series of examinations on rating agencies. SEC submitted the research about the positions and functions of rating agencies according to *Sarbanes-Oxley Act*. In June 2006, the U.S. House Financial Services Committee passed *Credit Rating Agency Duopoly Relief Act of 2006,* hoping that act can relieve the monopoly pattern of international rating market. But the act was not passed by the Senate and did not come into effect.

underestimated. The three biggest rating agencies may adopt varied rating standards in different markets and give rating with systematic bias for political, ideological and self-interested reasons.

5.2.3 Existing problems of supervision system of rating agencies

In 1975, for its own supervisory purpose, the SEC adopted NRSRO[41] system to regulate credit rating agencies and designated the three most famous rating agencies, Standard & Poor's, Moody's and Fitch Inc., as NRSROs. As important indicators for regulating liquidity and credit level, the ratings of NRSROs are widely applied in SEC supervisory legislation.

Though NRSRO system has been carried out since 1975, at the beginning, SEC did not define the term “NRSRO” clearly. The SEC staff summarized a series of designation criteria from years of practices.

According to the Concept Release in 1994 and Proposed Rule in 1997, a rating agency must meet the following requirements and then can be designated as NRSRO: (1) the ratings of the agency are nationally recognized as credible and reliable; (2) the staff, financial resources and organizational structure of rating agency ensure the credibility and reliability of ratings; (3) the systematic rating procedures are designed to produce credible and accurate ratings; (4) the rating agency keeps independent from the companies it rates; (5) internal procedures are followed to prevent the misuse of non-public information. The most important criterion is that the rating agency is in fact nationally recognized by the users of ratings in the U.S. as an issuer of credible and reliable ratings. Therefore, NRSRO system constitutes a barrier for the new rating agencies[42]. Except NRSRO system, the SEC has no relatively

[41] Nationally Recognized Statistical Rating Organization.

[42] It is noticeable that NRSRO system has played an active role in regulating and prompting development of U.S. rating industry. It purifies competitive environment by avoiding hostile competitions and enhances credibility of ratings as well as the breadth and depth of rating market.

perfect regulation system on credit rating agencies.

5.2.4 Suggestions about reconstructing behavior criteria of rating agencies

At present, the discussion about reconstructing behavior criteria of rating agencies and strengthening routine supervision has caught worldwide attention. Besides, relative supervisory authorities including SEC put forward with several reform schemes to enhance regulation on rating industry.

To reconstruct behavior criteria, firstly, reform current charging system of rating industry under the principle of reducing conflicts of interests; secondly, outline the functions of rating agencies from the perspective of legislation so as to resolve inconsistency between the interest appeal of investors and that of regulators; thirdly, renew NRSRO system and ease the access requirements in order to break monopoly and avoid systematic bias of ratings; lastly, improve supervisory system especially on the routine business of rating agencies.

Specifically speaking, first, prohibit rating agencies from providing rating and consulting services to issuers simultaneously and forbid rating agencies to rate securities that they participate in designing. Second, expand information disclosure of rating agencies and intensify its transparency. The content can include assets of mortgage issuers, mathematics model used in rating and so on. Third, reveal ratings and the process together with potential conflicts of interests for reliability of rating. Fourth, introduce competition mechanism and create fair environment by making sure that all rating agencies can get basic information for their rating.

5.3 Fair value accounting standards

The eruption of subprime mortgage crisis brought about the worldwide debate on fair value accounting (FVA). There are two methods of FVA, one is value-to-market, and the other is value-to-model. Value-to-market is usually adopted by assets of high liquidity and value-to-model is for that of low liquidity. The two methods complement each other. The problem for value-to-market lies in procyclicality of assets while value-to-model gives companies freedom to revise financial statements.

5.3.1 Procyclicality of fair value accounting

Fair value accounting is procyclical. FVA is based on active and orderly market while its adaptability weakens in inactive and disorderly market. When prices surge up, values of relevant products will easily be overestimated and promote the hike; when prices turn down, the values will be underestimated. Especially when trades are far from brisk, the utilization of value-to-model may cause market panic.

Procyclicality of fair value accounting is unfavorable to risk defending and defusing. When market is prosperous, financial products measured by fair value receive more returns and income statements of financial institutions witness a lot of profits. Consequently the blind optimism of management and traders as well as shareholders' impulses of sharing bonuses reduces the consciousness of risk defending. When economy turns down and values of relevant financial products are underestimated, financial institutions draw provisions according to different characters of assets or cut down the owners' equity hence reducing capital adequacy ratio and profit. To avoid negative influences, financial institutions will surely enlarge assets selling-off. As a result, the market falls into a vicious circle: turndown of trading prices→drawing provision and reducing equities →panic selling-off→further decline of prices→increasing provision and reduction of equities. Finally, the

financial institutions go bankruptcy, as they cannot solve problems of liquidity and capital adequacy. Besides, the procyclicality of FVA will lead to procyclical credit ratings.

5.3.2 Adjustment of fair value accounting standards

When subprime mortgage crisis became severer, the SEC required to suspend application of fair value measurement. *SEC Office of the Chief Accountant and FASB Staff Clarifications on Fair Value Accounting* was released on September 30, 2008 and said that enterprises can measure financial assets by “internal pricing” under the circumstance of inactive and non-ideal market. International Accounting Standards Board (IASB) released Amendments to IAS 39 (*Financial Instruments: Recognition and Measurement*) and IFRS 7 (*Financial Instruments: Disclosures*) in October. In light of these documents, trading and available-for-sell financial assets can be reclassified as financial assets measured by amortized costs. On October 15, the EU decided to accept the Amendments of IASB and was supported by European Parliament and all member states. The revised accounting standards permit institutions to reclassify some financial assets and move them from trading accounts. On October 16, Accounting Standards Board of Japan declared to relieve fair value accounting standards and planed to propose amendment within FY 2008.

IMF discussed FVA in *Global Financial Stability Report* issued in October 2008. It said that “FVA is the appropriate direction forward and a key challenge is to enrich the FVA framework in order to promote market discipline and financial stability”. In future, FVA should be refined at operational level and flexible measurement methods should be established in abnormal market.

5.4. Clearing mechanism, pricing transparency and risk control of OTC products

5.4.1 Development of the OTC market

The OTC stands for trading outside the exchanges and quoting by one-to-one means not through clearing house. Though some OTC derivatives contracts are settled on the clearing system, for example, the LCH.Clearnet offered clearing and risk management services for the OTC interest rate swap since 1999. Compared to exchanges, the OTC has following distinguished characters: one-to-one trading method; non-standardization and individuation of contracts; non-concentrated settlement and clearing; performance guarantee mechanism of appointing margins one-to-one.

In the 1970s, after the collapse of Bretton Woods System, the fluctuation of major currencies' exchange rates and interest rates rose sharply. Financial institutions carried out forward trades in order to avoid risks. In the 1980s, the off-balance sheet of western commercial banks increased rapidly[43] and one important part was interbank OTC derivatives. Until the 1990s, the OTC market developed distinctly. The innovation went further than that of exchanges and more complex products were introduced, with violent increasing of credit derivatives especially CDS[44] trades. According to BIS statistics, from 2004 to 2007, the nominal values of CDS contracts increased almost ten times.

5.4.2 Clearing mechanism, pricing transparency and risk control of OTC products

Different from exchanges market, the OTC market has no independent

[43] The off-balance sheets of 28 famous large commercial banks including Citigroup and Bank of America accounted for 76.8% of total in 1998,up from 48.5% in 1982. That of commercial banks of Japan increased at an annual rate of 40% in the 1980s. The profit of German commercial bank from off-balance sheet accounted for over 45% of total. And that of Swiss banks was 60%~70%.

[44] In CDS trading, the purchasers of CDS regularly pay sellers a fixed charge (CDS spread). On occasion that the issuers of securities cannot pay, the purchasers have rights to return securities to sellers at their face value so as to avoid credit risks.

third party of settlement. The subprime mortgage crisis exposed the key weakness of the OTC market, that is, lack of central counterparty guarantee and mark-to-market clearing system on a daily basis.

In the OTC market, the information is incomplete and asymmetric. Profound secondary market and clearing center are absent. The liquidity of products is insufficient. Trades cannot be concentrated. Pricing transparency is inadequate and pricing of derivatives may deviate from normal level.

The more outstanding problem of risk control in OTC market is embodied in margin payment within product duration and disposal mechanism of default risk. First, it is very difficult for purchasers of default risks to determine rational level of margin that can recover the possible loss of default. One reason is that the duration of OTC derivatives, especially CDS, lasts for a long period. Under this circumstance, the absence of central counterparties makes it difficult to evaluate and adjust margins. The other reason is that the information of both trading parties is asymmetric. Second, individuation of OTC products develops into high level and liquidity is insufficient. As a result, the compensation for risks absolutely depends on financial and credit conditions of counterparties. Once one party of trade faces liquidity problem or bankruptcy, the chain reactions happen easily.

5.4.3 Regulation on the OTC derivative market should be enhanced

Given current situations, the OTC derivative market including CMO, CLO, CBO and CDS has seldom been supervised and no public documents can show the liquidity of defaulters. Under this circumstance, there are huge default risks of counterparties in the OTC market inspired by large positions among traders. And the non-transparency of the OTC

market prompted the development of subprime mortgage crisis. For all above reasons, regulations and controls should be carried out on the OTC market.

On October 2008, the U.S. President's Working Group (PWG) issued its quarterly *Policy Statement on Financial Market Developments*. PWG made several recommendations to improve regulations on OTC derivative market and enhance the OTC market infrastructure. PWG also urged the industry to set strict standards for the accuracy and timeliness of trade data submission and to amend standard credit derivative trade documentation in order to provide cash settlement of obligations stemming from a credit event. G20 Summit in November 2008 issued a Joint Declaration, saying that IMF and the expanded FSF should advance suggestions on reducing systematic risks of CDS and OTC derivatives prior to March 31, 2009.

Box 2.6 CDS market and its centralized settlement

1. The status quo of CDS market

Credit default swap (CDS) is a kind of financial contract similar to insurance policy. The sellers of CDS are usually financial institutions such as banks and insurance companies. By purchasing the contract (similar to paying insurance premium), the creditors transfer default risks. If a bond issuer goes bankruptcy and cannot repay debts, the bond buyer will receive a payoff from the CDS seller. CDS contracts came into being in 1988 and recent years have witnessed fast development of CDS market.

According to the statistics of BIS, by the end of June 2008, the size of CDS market had grown from USD 22.57 trillion at the end of 2006 to USD 45.82 trillion. As estimated by International Swaps and Derivatives

Association (ISDA), by the end of June 2008, the size of CDS market had reached 54.6 trillion USD. According to the statistics from the Depositories Trust and Clearing Corporation (DTCC), by the end of November 2008, the CDS products on government bonds, corporate bonds and ABS totaled USD 33.6 trillion in the world.

As CDS is traded over the counter without a centralized settlement platform, its trade information lacks transparency and supervisors have no access to trade details. Therefore, debt relationship might get very complex among large financial institutions. Once a large trade counterparty goes bankruptcy, the CDS market will get disrupted and credit market panicked. In addition, when default occurs to the reference bond, there will be a leverage effect of the loss. As counterparties do not have to own the reference bond and may decide the insured value at will without knowing how many CDSs have referenced the bond, the insured value might far surpass the outstanding value of the reference bond. Once bond default occurs, the compensation will be higher than the real value of bonds.

After the subprime mortgage crisis occurred, Bear Sterns were taken over by J.P.Morgan Chase, Fannie Mae & Freddie Mac were taken over by the government, and Lehman Brothers applied for bankruptcy. The huge CDS market risks were revealed one after another, which was an important factor incurring the current global financial crisis.

2. Discussions of establishing centralized settlement for OTC derivatives including CDS

To face up to the credit and systematic risks incurred by scattered settlement of OTC market, lack of information transparency and supervision problems, the supervisory and regulatory bodies in the U.S.

and Europe discussed the issue of establishing centralized settlement mechanism for CDS market to control risks and improve market efficiency.

In July 2008, the Fed reached an agreement with major market makers to establish a centralized settlement center by the end of 2008. In October 2008, the Federal Reserve Bank of New York (FRBNY) had a meeting with several market makers and discussed about the plan to set a central counterparty for the CDS market. In November 2008, ECB had a discussion with regulatory bodies, banks and investment institutions about how to enhance transparency of the European CDS market. The discussion ended with an approval of establishing a central counterparty.

Market participants also realized that the CDS market is faced with huge risks without centralized settlement system, reserve requirements, supervision from the counterparties as well as transparent and symmetric information. After the bankruptcy of Bear Sterns, Greenwich Associates, an American consulting firm, conducted a poll among 146 institutional investors located in North America and Europe, and found that 75% of them were for the establishment of a settlement center, believing it was conducive to mitigating counterparty risk.

In fact, not only CDSs but also other OTC financial derivatives need centralized settlement mechanism. On October 31, 2008, major market participants including tens of important financial institutions, ISDA, Managed Funds Association (MFA), the Securities Industry and Financial Markets Association (SIFMA) wrote a letter to FRBNY, proposing strengthening basic rules and procedures for the OTC trade of financial derivatives and establishing central counterparty settlement mechanism worldwide.

Establishing centralized settlement mechanism for OTC derivatives including CDS will effectively mitigate credit and systematic risks, and enhance market transparency and efficiency. The roles of centralized settlement mechanism are as follows. Firstly, it manages counterparty credit risk and prevent credit crisis. Secondly, it reduces counterparty credit risk exposure and nominal net position, thereby mitigates systematic risk relevant to credit exposure. Thirdly, it is conducive to enhancing transparency of market price and volume, thereby promoting a fair trading environment. Fourthly, it helps to improve trade cycle management and the connection between trading & confirming platform and settlement & clearing system. Fifthly, it simplifies the manual payment and adjustment process and reduces operational risk. Sixthly, it provides comprehensive and precise market data and information, thereby promoting effective oversight over the market.

3. The settlement mechanism arrangements for CDSs and other OTC financial derivatives

Before the eruption of subprime mortgage crisis, CDS settlement was mainly bilateral. That is to say, within the CDS contract period, counterparties or an entrusted third party managed the collateral. Upon settlement, the counterparties made cash or physical delivery either by trade-by-trade or bilateral netting settlement.

In terms of settlement for other OTC derivatives apart from CDS, there are not only bilateral settlement, but also settlement by exchange derivatives clearing institutions and by securities custody & settlement institutions. Settlement by exchange derivatives clearing institutions means the clearing institutions[45]that used to serve exchange derivatives

[45] In terms of institutional organization, these institutions can be independent derivatives clearing corporations or clearing institutions affiliated to derivatives exchanges.

market only extends the service to OTC derivatives, providing central counterparty and multilateral netting settlement, etc. Examples of this type of clearing institutions are Canadian Derivatives Clearing Corporation (CDCC), LCH. Clearnet Ltd and Eurex Clearing affiliated to Eurex. Settlement by securities custody & settlement institutions means the institutions provide not only centralized disposal after trading, but also automatic confirmation, netting settlement, payment and delivery services for OTC derivatives clearing. DTCC is a typical example of this type of institutions.

Since the crisis broke out in CDS market, there have been increasing calls for establishing centralized settlement mechanism. At the moment, quite a few settlement institutions are actively preparing for CDS centralized settlement mechanism, planning to be the service provider. So far, there have been four institutions located in the U.S. and Europe qualified for the business. Among them, NYSE Euronext, CME and Eurex are exchange derivatives clearing institutions. While securities custody & clearing institutions offering CDS centralized settlement means DTCC cooperates with the Clearing Corporation (Ccorp) by connecting DTCC's trade database with Ccorp's CDS clearing system, thereby providing CDS central counterparty settlement service.

Part III. Connection between China’s Financial Markets and the International Financial Markets

Faced with the challenges posed by international financial crisis in 2008, China responded in a decisive manner and got involved in international and regional economic and financial cooperation, going to great lengths to offer a variety of assistance to other countries.

With the ever-expanding participation of foreign capitals in China’s financial market, China continued to participate in the international financial market in an active and prudential way. The degree of marketization of China’s foreign exchange market and the flexibility of RMB exchange rate continued to improve. China’s financial reform and development has laid a solid foundation for the opening-up of financial market with the result that positive impact continued to expand.

China will continue to bolster market development and innovation, establish the central settlement mechanism for OTC-traded bonds and derivatives, further optimize the structure of participants in China’s financial market by appropriately expanding the participation of overseas investors, take an active role in international regulation cooperation to promote the adjustment of international financial order, pave the way for Chinese financial institutions and institutional investors to participate in international financial market, and proceed with the opening-up of China’s financial market actively and steadily.

1. Challenges posed to China by the international financial crisis and China's response

1.1 Grim challenges posed to China by the international financial crisis

As the ever-aggravating U.S. subprime mortgage crisis evolved into the international financial crisis in 2008, Chinese economy and finance have been confronted with increasingly intense shocks and challenges.

Firstly, the shrinking external demand gave rise to increased downward pressure on China's economic growth. Affected by the ever-expanding international financial crisis, the slowdown of global economy and the recession of major advanced economies, China witnessed a sharp decline in external demand, decreasing orders from abroad, excessive production capacity of some industries, enterprises afflicted by operation difficulties, and rising unemployment. The downward pressure on China's economy grew tremendously. In 2008, the GDP growth rate decreased quarter by quarter and precipitated in the second half of the year. From the first quarter to the fourth quarter, the year-on-year GDP growth stood at 10.6%，10.1%，9% and 6.8% respectively. The industrial production and enterprise profits decelerated. In 2008, the statistically large industrial added value grew 12.9% year on year, down 5.6 percentage points compared with that of last year. The year-on-year growth of export and import registered 17.8% and slowed down considerably in the fourth quarter with the import declining 8.8% and the export rising 4.3% year on year. The investment and consumption still maintained relatively fast growth. In 2008, Chinese economy grew approximately 9%, the lowest in the past six years.

Secondly, the turmoil in the international financial market partly transmitted to China's financial market, as a result, China suffered certain

losses in the overseas investment. On one hand, since the outbreak of international financial crisis, major stock markets around the globe kept on slumping and the prices of bulk commodities like oil and non-ferrous metals had fluctuated by a large margin. The turmoil in the international financial market partly transmitted to China's financial market. On the other hand, the overseas investment by Chinese financial institutions suffered certain direct losses, mainly including losses from investing in subprime mortgage-related products, book losses from the investment in equity of overseas financial institutions and losses from overseas investment by qualified domestic institutional investors. As the scale of subprime mortgage-related losses was limited, it did not exert much impact on the balance sheet and profitability of banks. Moreover, the overall scale of direct losses was also limited. Thus, China's entire financial system would not undergo any big shock.

Last but not the least, the international financial crisis has exerted a certain negative impact on the confidence of domestic consumers and investors.

1.2 Decisive measures taken by Chinese government to actively meet the challenges of financial crisis

Since the wide outbreak of financial crisis, Chinese government has been watching closely the development of the crisis and taken a variety of decisive measures so as to actively meet the challenge of financial crisis. As external demand shrank remarkably and the downward pressure on economic growth increased, Chinese government made timely adjustment to the macroeconomic control policy, shifting the primary policy goal from preventing economic overheating to maintaining steady and relatively fast economic growth. Besides, it was proposed that boosting effective domestic demand, consumer demand in particular, should be the

basic way for promoting economic growth. Chinese government adopted decisively a proactive fiscal policy and a moderately easy monetary policy, put forward promptly ten measures aimed at expanding domestic demand, and formulated and implemented a series of policies, all of which contributed to a systematic and complete package for promoting steady and relatively fast economic growth.

The proactive fiscal policy included a large increase in government expenditures and structural tax cuts. Chinese government put forward with a two-year investment program totaling RMB 4 trillion, equivalent to 16% of the GDP of 2007. The investment mainly focuses on government-subsidized housing projects, projects related to the well-being of rural residents, infrastructure construction including railway transportation, the ecological and environmental-friendly projects, and the reconstruction of earthquake-stricken regions. It covers not only projects to be implemented at faster pace within the 11th Five-Year Plan period, but some new ones. According to the investment program, the central government planned to invest RMB 1.18 trillion and involved both local and social funds in the program. In addition, Chinese government came out with a wide-ranging tax cut program, mainly including completely transforming value added tax, putting forward with preferential tax policies for small and medium-sized enterprises and real estate transactions, eliminating and suspending a hundred administrative fees. All of this could reduce the burden on enterprises and households by approximately RMB 500 billion.

The moderately loose monetary policy includes highly frequent interest rate cuts and the liquidity increase in the banking sector. In 2008, the PBC lowered the deposit and lending rates of financial institutions five times in a row from September to December. In particular, the one-year benchmark deposit and lending rates were cut cumulatively by 1.89 and

2.16 percentage points, which greatly reduced the financial burden of enterprises. The reserve requirement ratio was lowered four times consecutively, a cumulative two-percentage-point cut for large financial institutions and four-percentage-point cut for small and medium-sized financial institutions, releasing a total liquidity of RMB 800 billion. Besides, PBC established term auction facility to shore up financial institutions facing potential short-term liquidity squeeze.

On December 13, 2008, the General Office of the State Council promulgated *Several Opinions on Providing Financing Support for Economic Development*, proposing to strengthen the supportive role of finance in economic development, increase aggregate credit supply, optimize the credit structure, enhance financial support for agriculture, the rural area, farmers and the small and medium-sized enterprises, accelerate the building of a multi-level capital market and give play to the market in allocating resources.

Apart from the above, Chinese government formulated a stimulus package aimed at promoting steady and relatively fast economic growth. First, a wide-ranging industry reinvigoration plan is implemented. A comprehensive industrial restructuring and upgrading are in full swing. The adjustment and reinvigoration plans for key industries like automobile and iron and steel are formulated so as to carry forward the mergers and restructures of enterprises, eliminate backward production capacity, develop advanced productive forces and increase the level of industry concentration and the efficiency of resource allocation. Enterprises are encouraged to engage in technological progress and renovation, extensively apply new technology, techniques, equipment and materials, adjust product structure, develop marketable products and improve the level of production and management. Supportive financial policies are continuously improved and implemented, credit guarantee

system is improved and the threshold of market access is lowered. All of this aimed at supporting the development of small and medium-sized enterprises. Second, technological innovation and upgrading are carried out vigorously. The implementation of National Program for Medium and Long-Term Scientific and Technological Development is accelerated to provide technical support for achieving sustainable economic development at a higher level. Efforts are made to develop new high-tech industrial conglomerates, create new social demands and foster new sources of economic growth. Third, social security improves remarkably. The improvement of social security system quickens, the basic pensions for enterprise retirees continue to grow, and the unemployment and work injury insurance increases. Medical and health care regime reform is pushed forward actively to establish a nationwide fundamental medical and health care system covering both urban and rural areas. The National Program for Medium and Long-Term Educational Reform and Development is drafted to further promote education equality and optimize educational structure. More proactive employment policies are implemented to buffer the impact of financial crisis on employment, including measures to promote the employment of college graduates and migrant workers and the creation of more charity-related work opportunities.

1.3 Concerted efforts by China and the international community to tide over difficulties

After the complete outbreak of the international financial crisis, China took an active presence at global and regional meetings and deepened the regional cooperation so as to tide over the financial crisis through concerted efforts of the international community. On one hand, China actively participated in international conferences including the Asia-Europe Meeting, the G20 Summit on Financial Markets and the

World Economy and the APEC meeting, etc. to discuss with parties concerned a variety of topics on the international financial crisis and make suggestions or policy proposals. On the other hand, Chinese government kept on adjusting domestic economic and financial policies in accordance with the latest development of financial crisis. Meanwhile, China went to great lengths to provide various forms of assistance to other countries and took part in both international and regional economic and financial cooperation.

During the informal meeting of finance ministers on the sidelines of the G20 Summit on Financial Markets and the World Economy, China, Japan and South Korea reached a consensus that strengthening cooperation was crucial for effectively combating the international financial crisis. Finance ministers from the three countries agreed that it was the most urgent that the multilateralization of Chiang-mai Initiative should be sped up through joint efforts of ASEAN+3 members and the consensus should be reached on all factors relevant to the multilateralization.

On December 13 2008, China, Japan and South Korea signed the *Joint Statement on International Financial and Economic Issues* in Fukuoka, indicating that the three sides welcomed the decision to expand the scale of bilateral currency swap to address the ever-worsening financial crisis. Prior to this, China, Japan and South Korea had already announced to establish a mechanism for meetings of central bank governors. PBC and Bank of Korea signed a currency swap agreement totaling RMB 180 billion (KRW 38 trillion). It embodied the implementation of G20 Summit initiatives and played a positive role in safeguarding regional financial stability and promoting the facilitation of regional trade and investment. Besides, PBC said it would actively research establishing similar currency swap arrangements with central banks and monetary authorities from other countries and regions under mature circumstances

in an attempt to maintain regional and global financial stability.

2. General situation of China's balance of payments (BOP)

2.1 General situation of China's BOP in the first half of 2008[46]

The size of China's BOP rose continuously and the economic relations with other countries continued to maintain relatively fast development. In the first half of the year, the total size of China's BOP grow 25% year on year to USD 2.4 trillion. The ratio of aggregate BOP to GDP of the corresponding period stood at 131.5%, down 9.5 percentage points as compared with that of 2007. The ratio still stayed at a high level despite the fact that it declined somewhat due to the international financial crisis. Chinese economy still inextricably correlated with world economy and the international financial market.

China's BOP continued to maintain a dual surplus in the first half of 2008; BOP surplus decelerated somewhat. In particular, the surplus of current account increased 18% year on year to USD 191.7 billion, 60 percentage points lower than the same period of 2007; the surplus of capital and financial accounts dropped 20% year on year to USD 71.9 billion.

2.2 Features of China's BOP in the first half of 2008[47]

In the first half of 2008, China's BOP took on the following features: under the current account, the surplus of trade of goods declined whereas the surplus of income account rose rapidly; under the capital and financial accounts, both foreign direct investment (FDI) and China's direct overseas investment expanded sharply, and the securities investment account witnessed a tendency of net inflows.

[46] Source: SAFE.
[47] Source: SAFE.

The surplus of trade of goods decreased. According to BOP statistics, in the first half of 2008, the export and import of goods increased 22% and 31% year on year to USD 670 billion and USD 537.5 billion respectively with a surplus of USD 132.5 billion, declining 2% year on year.

The surplus of income account rose rapidly. In the first half of 2008, China's overseas asset size expanded further. Returns on investment in the form of profits and interest grew significantly and the income of Chinese working overseas also soared, contributing to an income account surplus of USD 38.3 billion, a twofold increase year on year.

Both FDI and China's direct overseas investment increased considerably. According to BOP statistics, in the first half of 2008, FDI saw a net inflow of USD 74.1 billion, a year-on-year increase of 27%. In the meantime, Chinese enterprises sped up the overseas investment with the direct overseas investment witnessing a net outflow of USD 33.3 billion, 3.5 times that of the same period of 2007.

The securities investment account showed a tendency of net inflows. Due to the withdrawal by domestic institutions (mainly the banking sector) from overseas securities investment, China's securities investment account had experienced net inflows since the second half of 2007, which lasted till the first half of 2008 when the net inflow reached USD 19.8 billion whereas the same period of 2007 saw a net outflow of USD 4.8 billion.

2.3 The overall sound performance of China's BOP in 2008

In 2008, China's BOP still maintained a dual surplus while overall surplus surged at first and then stabilized, showing a sound performance. In the first half-year, foreign funds continued to flow in significantly with the new foreign exchange reserves reaching USD 280.6 billion; in the second half, affected by the ever-aggravating international financial crisis, the net inflow of foreign exchange slowed down with the new foreign exchange reserves standing at USD 137.2 billion, about half that of the first half year. The preliminary estimate revealed that the current account saw a surplus of around USD 440 billion across 2008, up 20% over the previous year, 27 percentage points lower than the same period of 2007. Current-account-surplus-to-GDP ratio declined to about 10%[48] from 11% in 2007.

3. Participation of foreign capitals in China's financial markets

3.1 The establishment of new foreign-funded banking institutions, and the share-holding and the performance of foreign-funded banking institutions

In 2008, the opening-up of China's banking sector deepened. With the limited damage of global financial crisis, foreign-funded banking institutions in China fundamentally performed in good state. It was reflected in adequate capitals and reserves, good asset quality as well as robust liquidity and profits. At the end of 2008, the assets of foreign-funded banks in China totaled RMB 1.35 trillion, up 7.37% compared with the previous year, accounting for 2.16% of the total assets of all financial institutions across China. In particular, outstanding loans reached RMB 730.5 billion, increasing 5.09% from the same period of

[48] Source: Xinhua News Agency, "Address made by Deng Xianhong, Deputy Administrator of SAFE at the press conference held by the State Council Information Office on February 18, 2009".

2007, taking up 2.3% of the total across all financial institutions; outstanding deposits reached RMB 597.4 billion, up 34.82% compared with that in 2007. The average CAR of incorporated foreign banks was 18.45% while the core capital adequacy ratio was 17.83%.

By the end of 2008, 196 foreign banks from 46 countries and regions had set up 237 representative offices; banks of 12 countries and regions had established 28 wholly foreign owned banks and 2 joint-venture banks; there were 2 wholly foreign owned financial companies. In 2008, through the active guidance of China Banking Regulatory Commission (CBRC), over 60 percent of foreign-funded banks established their branches in the northeastern and central and western areas, where there are few or none operational institutions of foreign-funded banks, and optimized their distribution in China.

In 2008, CBRC approved 7 incorporated foreign banks to do RMB retail business, and qualified incorporated foreign banks can launch treasury bonds underwriting as well as credit card issuance. At the end of 2008, 58 branches of foreign-funded banks and 27 incorporated foreign banks got permission to do RMB businesses while 51 foreign-funded banking institutions had approval of engaging in financial derivatives trade.[49]

3.2 Continuously active participation of foreign-funded securities institutions in China's securities market

In 2008, China Securities Regulatory Commission (CSRC) gave approval to Credit Suisse Founder Securities and Zhong-de Security Co., Ltd. to set up jointly-funded securities companies. Changjiang BNP Paribas Peregrine Securities Co., Ltd, a joint venture established by Changjiang Securities and BNP Paribas, was terminated. At the end of 2008, there

[49] Source: CBRC.

were seven Sino-foreign-funded securities companies with assets and net capitals totaling RMB 74.1 billion and RMB 19.8 billion respectively, each of which accounted for about 6% and 7% of the total securities industry.

In 2008, five jointly-funded fund management companies (JFFMCs) were established with the approval of CSRC. At the end of 2008, the number of JFFMCs reached 33, managing 220 funds in total. In particular, the foreign equity of 16 JFFMCs hit 49%. JFFMCs utilized RMB 2.08 billion of foreign capitals altogether. In particular, foreign investment in fund management companies increased RMB 166 million.

In 2008, approved by CSRC, 13 overseas securities institutions set up representative offices in China. London Stock Exchange and Deutsche Bourse were also approved to set up representative offices in China[50].

3.3 Continuous active equity participation of foreign capitals in China's insurance companies

By the end of 2008, a total of 51 foreign-funded insurance companies (including three under establishment) from 15 countries and regions had set up 195 business agencies (including 16 under establishment) in China. A total of 143 foreign-funded insurance companies from 21 countries and regions set up 195 representative offices in 14 cities across China.

At end-September 2008, a total of over 40 foreign companies took stakes in 23 China's insurance companies with the total utilized foreign capitals exceeding RMB 76 billion, including three companies listed on the H-share market, namely, Ping An Insurance (Group) Co., Ltd., PICC Property and Casualty Co., Ltd and China Life Insurance Co., Ltd. with H

[50] Source: CSRC.

shares accounting for 34.8%, 31% and 26.3% respectively. Major global insurers like HSBC, Zurich, ACE, Tokio Marine, etc all entered China's insurance market.

Foreign-funded companies that take stakes in China's insurance institutions fall into two categories, namely, strategic investors and finance investors. At present, most foreign companies fall into the first category. For instance, Winterthur Life Insurance subscribed 133 million or 15.6% of the total shares from Taikang Life Insurance, ACE subscribed cumulatively 295 million or 21.33% of the total shares from Huatai Life Insurance Co., Ltd, and the Carlyle and the Prudential subscribed 1.333 billion shares from China Pacific Insurance Group's additional share issue, accounting for 17.3% of the total. One example of finance investor is International Finance Corporation. It subscribed 4.8 million shares from Xinhua Life Insurance, taking up 0.4% of the total share.

By the end of 2008, there had been 8 insurance groups, 112 insurance companies and 10 insurance asset management companies across China. In particular, there were 48 foreign-funded insurance companies, including 16 property insurance companies, 26 life insurance companies and 6 reinsurance companies.

By the end of 2008, the total asset of insurance companies had reached RMB 3,341.8 billion, up 15.22% from the beginning of 2008. In particular, that of foreign-funded insurance companies increased RMB 26.8 billion or 21.37% from the beginning of 2008 to RMB 152.5 billion, accounting for 4.56% of the total assets of all insurance companies.

In 2008, the national premium income rose 39.06% to RMB 978.4 billion. In particular, the premium of property insurance and life insurance rose

16.97% and 47.82% respectively to RMB 233.7 billion and RMB 744.7 billion. The premium of foreign-funded property insurance companies stood at RMB 2.9 billion with a market share of 1.18% while that of foreign-funded life insurance companies reached RMB 36.1 billion with a market share of 4.92%, down 3.08 percentage points from the same period of 2007. In areas like Beijing, Shanghai, Shenzhen and Guangdong where foreign-funded insurance companies concentrated, the market share of foreign-funded insurance companies was 12.73%，16.62%，9.33% and 8.75% respectively[51].

3.4 Relatively active mergers and acquisitions (M&A) of domestic enterprises by foreign capitals

As the non-tradable share reform deepened and the range of fully tradable shares expanded, a new feature appeared, that is, foreign capitals began acquiring listed companies in the secondary market, merging and acquiring listed companies through designated additional share issue. The combination-based and market-based approaches became the most important way for M&A by foreign capitals which mainly targeted listed companies with high quality assets, renowned brands, stable customer bases and relatively sound corporate governance structure, specializing in industries related to resources, assets, manufacturing and financial services.

By the end of 2008, listed companies held and shared[52] by foreign capitals had reached 37 and 252 respectively, accounting for 17.8%[53] of all listed companies.

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[51] Source: China Insurance Regulatory Commission.

[52] Listed companies shared by foreign capitals are those whose equity includes B shares, H shares, overseas institutional shares and shares held by overseas natural persons.

[53] Source: CSRC.

3.5 Ever-expanding participation of foreign capitals in China's gold market, futures market, foreign exchange market, money market and bond market

3.5.1 Foreign-funded financial institutions traded in Shanghai Gold Exchange

In 2008, approved by PBC, Shanghai Gold Exchange acknowledged the membership of HSBC (China) Co., Ltd., Standard Chartered (China) Co., Ltd., Bank of Nova Scotia Guangzhou Branch and Australia and New Zealand Banking Group Limited Shanghai Branch; among them, the first three had already officially embarked on trading at Shanghai Gold Exchange by the end of 2008[54].

3.5.2 Jointly-funded futures companies effectively drove and improved the management capabilities and risk control of mainland futures companies

In line with the *Supplement to Mainland and Hong Kong Closer Economic Partnership Arrangement*, CSRC approved the establishment of three futures companies partly funded by Hong Kong till the end of 2008. Jointly funded futures companies operated by compliance and performed soundly with good profitability, and the customer rights and interests grew steadily since establishment, effectively driving up the operation and management capabilities and the risk control of mainland futures companies[55].

3.5.3 Foreign-funded banks saw a continuous growth of trading volume in the inter-bank RMB/foreign exchange market and remained a major player in foreign currency pair market

In 2008, the trading volume of foreign-funded banks (FFBs) in the inter-bank RMB/foreign exchange market continued to rise whereas the

[54] Source: Shanghai Gold Exchange.
[55] Source: CSRC.

market share declined somewhat. FFBs played a relatively active role in the RMB/foreign exchange market with trading volume rising 56% year on year, lower than the overall market growth; thus, their market share dropped 4 percentage points to 32%. In particular, the market share of foreign-funded market markers decreased 3 percentage points to 26%. On the RMB/foreign exchange swap market, the market share of FFBs rose 4 percentage points to 52%. By the end of 2008, foreign members of the inter-bank RMB/foreign exchange market had hit 131, accounting for 49% of the total, down 3 percentage points from the end of 2007.

FFBs maintained the leading position in foreign currency pair (FCP) market. In 2008, FFBs took up 72% of the FCP market. They still played a major role in the FCP market despite a year-on-year decrease of 8 percentage points in market share. By the end of 2008, foreign members of the FCP market had reached 30, accounting for 43% of the total[56].

3.5.4 Foreign-funded financial institutions continued to get actively involved in the inter-bank money market and bond market

In 2008, foreign-funded financial institutions (FFFIs)[57] maintained an active role in the inter-bank local currency market[58] with a trading volume of RMB 17.66 trillion, accounting for 7.94% of the total trading in 2008, a year-on-year increase of 62.69%. In particular, the trading volume of FFFIs in the bond market saw the fastest growth of 116.32%, followed by a 42.56% increase in the interest rate derivatives market and a 36.13% growth in the money market. FFFIs' share of credit-based lending market and forward rate agreement transactions went up 3.26 and

[56] Source: China Foreign Exchange Trade System (CFETS).

[57] Foreign-funded financial institutions include foreign-funded or jointly-funded insurance companies, finance companies, funds, other investment products, enterprise annuities, auto finance companies and securities companies and foreign-funded banks.

[58] The inter-bank local currency market includes money market, bond market and derivatives market. The money market comprises of three sub-markets, including credit-based lending market, pledged repo and outright repo markets. The interest rate derivatives market is made up of bond forward market, interest rate swap market and forward rate agreement market.

6.12 percentage points respectively whereas that of other sub-markets decreased slightly, among which the interest rate swap transactions dropped most considerably, down 8.74 percentage points (see table 3.1). By the end of 2008, there had been 79 foreign-funded banks in the inter-bank local currency market with 16 new members. 22 of them passed the institutional archival filing of RMB interest rate swaps and 13 of them passed institutional archival filing concerning RMB forward rate agreement.

Table 3.1 Changes in the trading volume of foreign-funded financial institutions from 2007 to 2008

Trading Types	2007		2008		2007-2008	2007-2008
	Trading volume of FFFIs(RMB 100 million)	As a percent of the total (%)	Trading volume of FFFIs(RMB 100 million)	As a percent of the total (%)	Changes in trading volume (%)	Changes in market share (%)
Credit-based lending	29672.61	13.94	51757.99	17.20	74.43	3.26
Pledged repo	40317.23	4.57	43430.27	3.85	7.72	-0.72
Outright repo	507.82	3.50	778.84	2.24	53.37	-1.26
Cash bond	35769.69	11.46	77378.49	10.42	116.32	-1.04
Bond forwards	290.58	5.78	266.43	2.66	-8.31	-3.11
Interest rate swaps	1976.96	45.64	2966.21	36.89	50.04	-8.74
Forward rate agreement	0.00105	50.00	0.01275	56.12	1114.29	6.12

Source: CFETS.

FFFIs took up relatively large shares of the interest rate swap market and the forward rate agreement market, reaching 36.89% and 56.12% respectively[59].

3.5.5 Foreign-funded institutions actively participated in the building of benchmark interest rate market

In 2008, foreign-funded institutions got actively involved in the development of benchmark interest rate market. The quotation syndicate for Shibor was composed of 16 commercial banks, including two foreign-funded banks, namely, HSBC (China) Co., Ltd. and Standard Chartered (China) Co., Ltd.; the seven-member OTC quotation syndicate for Shibor also included two foreign-funded banks, namely, Citibank (China) Co., Ltd. and Bank of Tokyo-Mitsubishi UFJ (China) Co., Ltd.; three foreign-funded institutions including HSBC (China) Co., Ltd., Standard Chartered (China) Co., Ltd and Citibank (China) Co., Ltd. joined other 14 institutions in the quotation for the Shibor-based interest rate swap.

On top of that, FFFIs promoted the development of Shibor as the benchmark rate via continuously active participation in the interest rate derivatives market. In 2008, the trading volume of Shibor-based interest rate swap conducted by FFFIs rose 339.75% to RMB 179.7 billion, accounting for 43.51% of the total. In 2007 and 2008, all forward rate agreements were reached on the basis of 3-month Shibor. In particular, the trading volume of FFFIs took up 56.12% of the total in 2008, increasing 6.12%.

[59] Source: CFETS.

4. China's participation in the international financial markets

4.1 Overseas operation and investment by Chinese-funded financial institutions

4.1.1 Overseas operation and investment by Chinese-funded commercial banks

China's banking industry achieved noticeable progress in introducing foreign capitals following the principles of "national sovereign interest, step-by-step advancement, controllable risks, cooperative competition and win-win benefits". Urban and rural small and medium-sized banking institutions and non-banking financial institutions made significant breakthroughs in promoting the introduction of capitals, regulations, expertise and technology.

By the end of 2008, more than 20 small and medium-sized commercial banks had introduced qualified strategic investors, with capitals of more than RMB 30 billion, and attracted over 100 foreign administrators, improving corporate governance, management and risk control as well as quickening the pace of financial innovation. 28 non-banking financial institutions introduced 27 foreign investors, with foreign capitals of USD 1.031 billion.

In 2008, taking the opportunity on pattern adjustment of international banking industry, China's banking financial institutions pushed forward "going out" strategy steadily as well as made great progress in building overseas branches and purchasing shares of foreign banks.

By the end of 2008, 5 large banks had established 78 overseas primary operational agencies, which located in Asia, Europe, America, Africa and Oceania providing services of commercial banks, investment banks and

insurance.

In 2008, Industrial and Commercial Bank of China (ICBC) Dubai Subsidiary, Doha Branch and Hanoi Branch, China Construction Bank London Subsidiary, Bank of China Swiss Subsidiary and Bank of Communications Ho Chi Minh Branch were set up.

In 2008, large commercial banks acquired 5 overseas institutions (or purchased their shares), with a total of USD 7.575 billion. Among them, ICBC acquired Standard Bank of South Africa and Macao Seng Heng Bank, Ltd. one after another.

In 2008, joint-stock commercial banks (JSCBs) achieved noticeable progress in carrying out "going out" strategy. China Merchants Bank almost finished the acquisition of Wing Lung Bank. China Merchants Bank New York Branch officially opened in October, which is the first Chinese bank branch ever since the U.S. issued *Foreign Banks Supervision Enhancement Act* in 1991. China Minsheng Bank purchased 4.9% shares of Wachovia Securities, a total of RMB 680 million.

In January 2008, CBRC approved China Petroleum Finance Co., Ltd. to build Hong kong Subsidiary, the first overseas subsidiary of non-banking financial institutions.[60]

4.1.2 Overseas operation and investment by Chinese-funded securities and futures institutions

In 2008, drawing on the experience of QDII pilot projects, CSRC improved the arrangements of QDII and reviewed comprehensively the issue of product design, trading modes, investment counseling, custodian

[60] Source: CBRC.

business, and accounting and valuation. In 2008, approved by CSRC, another 11 fund management companies and 4 securities companies became qualified domestic institutional investors. By the end of 2008, CSRC had granted QDII business to a total of 26 fund management companies; 10 funds qualified for QDII business had been set up through public placement.

In 2008, with the approval of CSRC, Ping An Securities, Guodu Securities and Guosen Securities established subsidiaries in the Hong Kong Special Administrative Region. By the end of 2008, a total of 12 securities companies including China International Capital Corporation Ltd. (CICC) had been approved to set up subsidiaries in Hong Kong SAR. At present, the subsidiaries of three securities companies such as Ping An Securities are still under establishment while that of other 9 companies perform steadily with businesses running prudently. Among them, the subsidiaries of five securities companies including CICC，Guotai Junan Securities, Shenyin and Wanguo Securities, China Merchants Securities and Citic Securities made relatively handsome profits while that of other 4 companies were still at the initial stage of business expansion, as they had been in existence only for a short period of time.

By the end of 2008, a total of 4 mainland fund management companies had been approved to set up fully-funded or jointly-funded subsidiaries in Hong Kong SAR. Currently, all of them were still under establishment with no business launched. In addition, there were 18 fund management companies offering investment counseling to QFIIs. The opening-up of fund management companies progressed both in depth and width.

By the end of 2008, 6 mainland futures companies were approved to set up subsidiaries in Hong Kong SAR, all of which running smoothly. First, their business size grew steadily. The business of 6 subsidiaries had

progressed smoothly ever since establishment and the customer equity grew steadily. By the end of 2008, 4 of them almost recovered the initial investment cost. Second, capital strength grew continuously. In an attempt to meet the requirements of Securities and Futures Commission (SFC), four companies went through procedures for capital replenishment in 2008, laying the foundation for further business development. Third, risk control remained relatively sound. Financial data released at the end of November 2008 revealed that the current capitals of 6 companies were all up to the standard. Green Futures (Hong Kong) Co., Ltd. obtained the seat in the Stock Exchange of Hong Kong SAR Limited whereas none of the other 5 companies was engaged in long-term investment in Hong Kong. All six subsidiaries formulated and effectively implemented regulations on risk management and attached importance to keeping in touch with local regulatory authorities. CSRC and SFC had already developed the mechanism for sharing regulatory information, giving rise to a resultant in cross-border regulation. By the end of 2008, no severe risk-related events had been reported in the six subsidiaries in Hong Kong SAR[61].

4.1.3 Overseas operation and investment by Chinese-funded insurance institutions

By the end of 2008, 15 Chinese-funded insurance institutions set up 43 operating agencies in 9 countries and regions; 4 Chinese-funded insurance institutions established 8 representative or liaison offices in 3 countries and regions.

Box 3.1 New progresses in the overseas investment of Chinese-funded financial institutions

China Minsheng Banking Corporation (CMBC) invested in UCBH holdings. On March 1, 2008, CMBC was approved by CBRC to take

[61] Source: CSRC.

4.9% of UCBH shares, which could be increased to 9.9% before the year-end. In addition, CMBC had options to increase its share to 20%. UCBH holdings is a specialized bank headquartered in San Francisco, offering a wide range of services to US-based enterprises run by overseas Chinese and the American companies that do businesses in Great China.

China Merchants Bank (CMB) acquired Wing Lung Bank. On May 30, 2008, CMB announced the acquisition of Wing Lung Bank, becoming the first domestic bank to complete a direct acquisition of shareholding rights with over USD 4 billion. On September 30, the acquisition was completed. In line with rules on tender offer stipulated in Hong Kong's *Code on Takeovers and Mergers*, CMB would launch a comprehensive takeover by offer, purchasing the rest at a price of HKD 156.5 per share. The 75-year-old Wing Lung Bank is a renowned family bank in Hong Kong with 35 branches.

Bank of China (BOC) purchased the shares of La Compagnie Financiere Edmond de Rothschild (LCFER) and acquired Heritage Asset Management Company. BOC announced on September 18 that it had purchased 20% shares from LCFER with EUR 236.3 million (or RMB 2.3 billion), becoming its second largest shareholder. It was BOC's first strategic investment in an European bank. LCFER is a Paris-headquartered financial group held by Rothschild family, focusing on private banking and asset management.

China Ping An Group (CPG) took stakes in Fortis. CPG launched its program of equity investment in Fortis in November 2007. In January 2008, CPG invested EUR 2.117 billion in Fortis, taking 4.99% of shares and becoming its largest shareholder. On June 26, 2008, when Fortis issued additional shares, CPG reinvested EUR 75 million, bringing its cumulative investment to EUR 2.19 billion. As the share price of Fortis

declined due to the financial crisis, CPG proclaimed it gave up further equity purchase program that involved the asset management company of Fortis so as to contain investment risk.

China Life Insurance Co., Ltd. took 1% of shares in Visa. On March 20, 2008, Visa went public on the New York Stock Exchange, creating the biggest IPO in American history. China Life Insurance Co., Ltd. became its largest Chinese strategic investor with an investment of USD 300 million.

Affected by the international financial crisis, some Chinese-funded financial institutions suffered certain losses in overseas M&A; however, it well demonstrates that Chinese-funded banks and non-banking institutions are exploring ways for implementing a global strategy.

4.2 Slight decline in the overseas funding of Chinese enterprises

At the end of 2008, a total of 153 domestic limited shareholding companies issued foreign currency-denominated shares on the overseas market, raising USD 112.1 billion. About 87 Chinese-holding companies (red-chip companies) got listed in Hong Kong SAR, as well as 6 overseas listed companies in Singapore. A total of USD 63.8 billion was raised through overseas listing.

Due to the sluggish global financial market, the size of overseas funding of Chinese-funded enterprises declined to some extent. In 2008, 5 companies issued overseas-listed foreign currency-denominated shares for the first time; 6 overseas-listed companies issued additional foreign currency-denominated shares, raising a total of USD 4.556 billion. In 2008, there was no IPO by overseas listed Chinese-holding companies. 2 of them issued additional shares and allotted shares respectively, raising

USD 513 million in total.[62]

4.3 Continuous participation of Chinese-funded financial institutions and enterprises in the international lending market

At end-September 2008, China's outstanding external debt stood at USD 441.95 billion (excluding that of Hong Kong SAR, Macao SAR and Taiwan, also applies to the following data), rising 18.3% over the end of last year.

The registered outstanding external debt was USD 288.2 billion, among which USD 108.2 billion was that of Chinese-funded financial institutions, a year-on-year increase of 47.8%[63], accounting for 37.6% of the total, up 5.2 percentage points year on year; the outstanding external debt of Chinese-funded enterprises reached USD 4.5 billion, taking up 1.6% of the total, down 0.5 percentage point.[64]

4.4 Continuous growth of China's foreign exchange reserves in 2008

At the end of 2008, China's outstanding foreign exchange reserves hit USD 1.95 trillion, increasing USD 417.8 billion over the end of 2007. China adhered to the long-term principle of safety, liquidity and value-increase in managing foreign exchange reserves and adopted a long-term strategic method in identifying reserve currencies, allocating assets and making investment choices by taking account of a variety of factors, including the needs of China's foreign trade and economic development, the needs of international payment, the development trends

[62] Sources: CSRC

[63] The growth in the external debt of Chinese-funded financial institutions was mainly contributed by the fast growing less-than-90-day L/C after sight for imports and the external debt arising from short-term trading financing through the overseas branches of Chinese banks.

[64] Sources: SAFE

of international monetary and financial systems, the potential of financial markets of major countries and the risk-and-return features of different categories of assets.

In the face of ever-worsening international financial crisis and the complicated changing international financial market environment, China launched the crisis management mechanism immediately in managing foreign exchange reserves, took effective countermeasures in a decisive fashion, which included giving top priority to risk prevention and enhancing risk management and internal control. Generally speaking, foreign exchange reserve assets remained sound in 2008[65].

4.5 Prudential investment principles observed by social security fund

At the beginning of 2008, the national social security fund (NSSF) planned to invest in 5 new overseas stock-related products, focusing on overseas stocks, Asia-Pacific stocks (Japan excluded), new emerging market stocks, European stocks and worldwide stocks respectively. NSSF launched a second round of recruitment for overseas investment managers in accordance with the above-listed five products and identified the list of qualifiers.

In the face of severe international financial market turmoil in 2008, NSSF adhered to a more prudential investment guideline, monitored closely the changes in overseas markets and the investment behavior of investment managers and stayed away from high-risk products like collateralized debt obligations, effectively warding off major risks of the international financial market[66].

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[65] Source: SAFE.
[66] Source: the National Council for Social Security Fund.

5. China's financial markets continued to integrate with international financial markets

5.1 The shares of China's bond, equity, futures and gold markets in the world

5.1.1 The rapid growth ranked China's domestic debt securities market the sixth largest market in the world

At the end of June 2008, the outstanding balance of China's domestic debt securities market stood at USD2 trillion, grew 18.7% compared with that at the end of 2007, occupying 3.29% of the world's outstanding balance and was positioned the sixth biggest domestic market in the world[67].

For the product structure of China's inter-bank bond market, by the end of 2008, the proportion of commercial bank bonds and corporate bonds (including short-term financing bills and middle-term papers) had grown 0.04 percentage point and 2.21 percentage points respectively compared with the end of 2007, accounting for 2.57% and 8.39% of the total, which was relatively smaller than the proportion of government bonds and central bank bills together with the policy banks' financial bonds, quite different from the U.S. and other developed countries

5.1.2 The share of China's equity market in the world reduced.

The statistics of WFE showed that the market capitalization listed in Shanghai Stock Exchange (SSE) accounted for USD 1,425.4 billion at the end of 2008, decreasing 61.4% compared with end of 2007. The market capitalization in Shenzhen Stock Exchange (SZSE) accounted to USD353.4 billion, dropping 54.9% compared with the end of 2007. The

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[67] Source：www.bis.org

aggregated market capitalization of the two exchanges amounted to USD 1,778.8 billion with the global share decreased to 5.46% in 2008, down 1.92 percentage points compared that at the end of 2007.

The statistics of WFE showed that in 2008, the turnover (including investment funds, thereafter the same) in SSE was USD2,586.7 billion, down 36.4%, ranking the seventh in the world. The turnover in SZSE was USD 1,241.7 billion, ranking the sixteenth in the world, down 40.9% compared with last year. The aggregated turnover of SSE and SZSE amounted to USD 3,828.4 billion, occupying 3.38% in the world, down 2.77 percentage points compared with 2007.

In 2008, RMB333.6 billion capitals were raised from China's A share market, including RMB103.7 billion IPOs and RMB 229.99 billion refinancing[68], totally 5.71% in world, down 5.75 percentage points compared with 2007.

5.1.3 The turnover of some products in China's futures market ranked ahead in the world

In 2008, the turnover of copper, aluminum and zinc futures in Shanghai Futures Exchange (SHFE) ranked second in the world. The ratios among the turnover of copper futures in SHFE, LME and COMEX were 1:6.4:0.5 (in term of tons, thereafter the same). The ratios for aluminum futures in SHFE and LME were 1:16.3. The turnover of natural rubber futures in SHFE ranked first in the world for the year 2008 and was 7.9 times the volume in TOCOM.

In 2008, the turnover of corn, soybean, soy meal and soy oil futures in Dalian Commodity Exchange (DCE) ranked the second in the world

[68] Source: China Securities Regulation Commission.

respectively. The ratio of the turnover of corn futures in DCE compared with CBOT and Tokyo Grain Exchange (TGE) was 1:12.7:0.3. The turnover ratio of DCE's soybean futures compared with CBOT and TGE in 2008 was 1:4.4:0.07. The turnover ratio for soy meal and soy oil futures trading in DCE and CBOT was 1:1.5 and 1: 1.03 respectively. The turnover of LLDPE futures in DCE was 1,354 times of that in LME, leading the world market. The turnover of palm oil futures of DCE ranked second in the world, with the turnover ratio of DCE and Bursa Malaysia at 1:1.2.

The turnover of white sugar futures of Zhengzhou Commodity Exchange (ZCE) ranked number one in world in 2008; with cotton and rapeseed oil futures number two and wheat futures number three. The turnover ratio of sugar futures between ZCE and Intercontinental Exchange (ICE) was 1.2:1. The ratio for rapeseed oil and cotton futures between ZCE and ICE was 1:2 and 1:5.2 respectively. The ratio for wheat futures turnover among ZCE, CBOT and Kansas City Board of Trade was 1:9.4:1.9. The PTA futures in DCE are in global leading position.

Although the turnover of some products in China's futures market ranked relatively ahead in the world, its international influence was not as big as its turnover as most participants were mainly domestic.

5.1.4 The daily average trading volume of gold in Shanghai Gold Exchange was equivalent to 1.2% of that in LBMA, while the turnover of gold futures in SHFE ranked number five in the world.

Gold spot was the main trading product of Shanghai Gold Exchange (SGE). Overall 4,464 tons of gold were traded in SGE in 2008 with a daily average of 18 tons, up 144.2% compared with that in 2007[69].

[69] Source: Shanghai Gold Exchange

Compared with the daily average volume of gold cleared by LBMA, which stood at 22.31 million ounces (about 694 tons)[70], the trading volume of SGE was equivalent to 2.6% of that of LBMA, up 1.4 percentage point in 2008.

In 2008, the total turnover of gold futures in SHFE were 3,890 tons, ranked number five in the world, with the ratio compared with TOCOM and COMEX at 1:3.9:30.7.

5.2 The relatively strong price correlation between China's financial markets and international financial markets

5.2.1 The yield curve of China's treasury bonds became steeper, similar to that of the international bonds market

The flat yield curves of treasury bonds in major economies had been further modified in 2008. Although the yields of the medium and short-term treasury notes and long-term treasury bonds declined simultaneously in China's inter-bank bonds market, the yield of medium and short-term ones dropped more than long-term ones, which meant a steeper yield curve of treasury bonds (see figure 3.1).

5.2.2 The price trend in China's foreign exchange market was consistent with that of international foreign exchange markets

In 2008, the price trend of major currency-pairs in the inter-bank spot market, such as EUR/USD, USD/JPY and so on, were generally consistent with those in the international markets.

5.2.3 The decline of major stock indices in China's market was one of the most serious ones in the world in 2008, showing the instability as

[70] Source: The website of the London Bullion market Association, http://www.lmba.org.uk.

an emerging market.

As similar as the indices of the global market, China's major stock indices dropped obviously in 2008. At the end of 2008, the SSE Composite Index and the SZSE Composite Index ended at 1821 and 554, down 65.4% and 61.7% respectively compared that in the end of 2007(see figure 3.2). China's stock market witnessed the biggest rise of major indices around the world in 2007. And the decline of major stock indices in Chinese market was one of the most serious ones in world in 2008, showing the instability as emerging market.

5.2.4 The price trend of most future products in China's futures market generally coordinated with those in the international market.

In 2008, the price trend of copper, aluminum and zinc futures of SHFE coordinated with that of LME. Studying on the correlation between the price trends of three non-ferrous metal futures of LME and SHFE, we could see several features. The first was that the variation scope of overnight yields of three major non-ferrous metal futures traded in SHFE was larger than that of daytime yields. It showed that the pricing information of SHFE mainly issued during non-transaction period. The reasons were that part of decision-making information about China's financial markets was issued after close of the market and also because the investors of SHFE absorbed the information of major oversea markets during the night and reflected it on the open price of next trading day. The second feature was that the LME market had faster reaction speed and stronger reaction ability than that of SHFE, judged by the scope and duration of adjustment caused by shocks. The third was that the price fluctuation of LME market was mainly endogenous and the influence of SHFE market was limited, according to the analysis of the price trend of copper, aluminum and zinc futures. As locating in different time zone, the influence of LME prices on SHFE ones was inconspicuous in the short-run. In the long run, LME copper and zinc future prices influence

those in SHFE in the proportion of 50% and 75% respectively, with less notable influence of aluminum futures. The SHFE copper price was influenced by itself and LME price equally. With a relatively short history, the SHFE zinc future price was influenced a lot by LME price. As the export and import limitation in China's aluminum market, the LME aluminum future price had less influence on the SHFE price.

For the difference of demand and supply structure, the price correlation between foreign and domestic market varied in different agricultural product futures. The relationship of soybean, soy meal, soy oil and palm oil prices between Chinese and oversea markets were close and Chinese and oversea corn markets were less connected. The calculation showed that the correlation coefficient between DCE soybean price and CBOT soybean price was 0.966; that between DCE palm oil price and BMD palm oil price was 0.904; and that between DCE corn price and CBOT corn price was 0.703.

On one hand, as all palm oil and 70% of soybean depended on imports as well as 85% of soybean used for pressing was imported, the oversea markets of soybean, soy meal, soy oil and palm oil exert great influences on China's markets. On the other hand, as the major consumer of soybean and palm oil in the world, China's management policies and market variation would attach impact on the international markets. By contrast, China's corn market could supply itself, which was a relatively closed market and had weak connection with the international market. However, for correlation among agricultural products, China's corn market was partly affected by the international market.

The price trend of ZCE wheat, white sugar and cotton futures manifested some differences with the international markets. Because of low proportion of import and the government's minimum purchasing price

policy, the price trend of ZCE wheat futures was relatively independent, which went smoothly through the year with small fluctuations. In the meantime, the CBOT price reached the top of the year in the middle of March and then fell down rapidly with larger fluctuations. The correlation coefficient between two wheat prices was only 0.286. The price trend of ZCE sugar future was generally similar to that of NYBOT, whose fluctuation scope was larger than that of NYBOT. The two prices had a correlation coefficient of 0.558. The price of ZCE cotton futures was highly coordinated with that of the international market. The price of ZCE cotton futures had a correlation coefficient of 0.951 with the NYBOT one.

Box 3.2 China's futures market weathered the turbulence of the international market

As the international financial crisis expanding to the real economy, the international futures market fluctuated violently in 2008, and China's future market was seriously hit. Especially after the holiday of the Nation's Day 2008, the prices of majority products dropped to the daily limit down continuously, influenced by the extremely sharp drop of the international commodity futures prices. After that, the prices of some products turned to the limit up continuously. The acute fluctuations increased the risk sharply.

Facing market turbulence, the CSRC and relevant exchanges took some measures, with some institutional arrangements to control the market risk.

The First measure was to strengthen the market supervision through quantitative analysis. To control the settlement risk, relevant exchanges strengthened the analysis and dynamic supervision on the liquidities of the future companies and their clients. They used the four-step analysis,

which included forehead risk identification → forehead risk assessment → risk supervision and control → reporting and early-warning, to acquire the information of risk in time. Once the hidden risks were exposed, measures would be taken in time. Relevant exchanges would selectively measure the liquidities of key members and clients under the daily limit and improve the supervision on their trading behavior, position holdings as well as the connection between the prices of futures and spot transactions. They assessed the risk in time, providing information and quantitative analysis for supervision.

The second measure was to improve the supervision rules. Relevant exchanges took the forced position-cut measure as the indispensable procedure when the price went for three daily limits continuously (except for deregulation and other unusual behaviors induced), which was clearly anticipated by the participants of the market and played a positive role in the risk control.

The third measure was to enhance the cooperation of supervision to obtain the external information. It became more common that the investors traded in different markets and the capitals flew across the different markets. To assessing the risk precisely and completely, it was necessary to communicate with each other between the exchanges, the margin supervision center and the branches of CSRC, to obtain the information about the members and clients.

With the measures above, the systematic risk transmitted from the international market got released orderly and effectively, and the market confidence resumed quickly. According to the statistics from China Futures Association，by the end of October 2008, total overdrafted margin had been less than RMB 20 million, only as 0.05% compared with the total margin of the market. And most over drafting clients reinforced their

deposits. There was no futures company bankrupted and the industry went smoothly. And China's futures market weathered the test of turmoil in the international market.

5.2.5 The price in China's gold market generally kept consistent with the international market

In most trading days of 2008, the domestic gold price was consistent with the international price, whose average gap with the international market price was RMB 0.67 per gram. From January to September, the gap was relatively small with the absolute value less than RMB 1 per gram. However, the gap extended after September. During November and December, the gold price of China's market exceeded the international market price for RMB 5 per gram. (see figure 3.3).

5.3 The innovations in China's financial markets with reference to the international experiences

In 2008 the innovations in China's financial markets quickened with reference to the international experiences, based on the market situation and the demand of market development.

The first was the innovation of products. The gold futures were introduced by SHFE on January 9 2008. On April 9 2008, as the issuance of *Administrative Rules on Debt Financing instruments for Non-financial Enterprises on the Inter-bank Bond Market* by the People's Bank of China (PBC), National Association of Financial Market Institutional Investors (NAFMII) took the charge of registration for debt financing instruments and of supervision for the self-discipline of the issuance and trading of debt financing instruments. The middle term notes were introduced to the inter-bank bond market on April 15, 2008, with accumulatively 41 issuances, collecting totally RMB173.7 billion, by the

end of 2008. On September 5, 2008, China Securities Regulatory Commission (CSRC) issued the draft of *Provisions on Exchangeable Bonds Issuance by Listed Companies' Shareholders (Draft for Comment)* to collect suggestions from the public. On December 8, 2008, the State Council issued *the suggestions on promoting economy development through finance industry*, which encouraged the innovation of REITs and relative instruments for trading in debt market and for risk management. In the futures market, DCE introduced the cross-varieties arbitration between the soybean and soy meal, as well as soy oil and palm oil contracts. Besides, the preparation for trade of crude oil, steel, grain, raw silk and carbinol futures had been nearly finished. The R&D on fund instrument in equity market was strengthened.

The second was the innovation of trading method. On April 20 2008, the CSRC issued *Guidance Opinion on Transfer of Stock Shares with Terminated Sales Limit of Listed Companies*, which required that shareholders who planned to sell publicly in the succeeding month stock shares with terminated sales limit that exceed 1% of their total issued shares, should transfer their shares through the block trading systems of stock exchanges. As the change of the function, the block trading system had become a brand new market, with the scale and status improved rapidly. SZSE introduced a new platform of comprehensive contract trading to meet the demand of corporate bond and block trading, which was a helpful supplement for the bidding system. The preparation for new generation trading system of SSE was done smoothly and orderly while the construction of the relative infrastructure had been finished.

The third was the innovation of market rules. On January 18 2008, after two-year pilot project, the PBC issued *Notice on Several Matters Concerned about RMB Interest Swap Transaction*, formally launching the interest rate swap. This document further lowered the barrier of the

interest rate swap market, whose participants were expanded from the commercial banks with permit of derivatives trading to all the inter-bank participants. In October, the NAFMII issued *Guidelines of Internal Risk Control of Derivatives Trading in the Inter-bank Market*, aiming to improve the participants' self-discipline when they did derivative-related business and to guide the participants control the risk effectively. On October 5, 2008, the CSRC declared to carry out pilot project on margin transaction or short sale transaction in securities companies. In 2008, China Foreign Exchange Trading System (CFETS) promoted the middle and long-term borrowings through discounting the commission charge of the middle and long-term credit transactions of Shibor quoting bank, which strengthened the foundation of Shibor. Beside, CFETS also introduced a quotation system for the financial instruments based on Shibor, which consolidated Shibor's benchmark position. CFETS further improved the quotation system of RMB interest derivatives and tried to construct a curve of RMB interest swap to provide references for derivatives pricing. SSE and SZSE amended the rules of bonds trading, unifying the rules of corporate bonds and enterprise bonds. SSE also made *Provisional Rules on Trading on SSE Comprehensive Electronic Platform of Fixed Income Securities*, to improve the access system of qualified investors and the rules of platform trading.

Box 3.3 The overseas markets of RMB derivatives

So far, RMB derivatives in the overseas market has mainly included renminbi NDFs in the markets of HKSA, Singapore and Japan, and futures and options of renminbi with other currencies in CME.

In 2008, the overseas markets of RMB derivatives developed in relatively fast pace. It was estimated by many market professionals that the average daily trading volume of renminbi NDF counted for nearly USD4 billion. As the international crisis aggravated, especially after Lehman Brothers'

application of bankruptcy, many hedging funds squared positions and quitted the market. And some market makers stopped market making because of liquidity strain, As a result trading volume of renminbi NDF lowered to some extent. The quotation from the Reuters system showed that the oversea NDFs within one year were traded more actively. For the price tendency, taking the NDF of 3 months as example, the extent of appreciation of NDF for 3 months reduced a lot in 2008, which opened at 7.1790 in the beginning of the year and then went down, with the lowest price at 6.7140. Its price closed at 6.9160 at the end of 2008, down 3.54% comparing with the end of 2007 (see figure 3.4).

In 2008, only RMB/ USD futures were traded in CME, most of which were short-term contracts within 3 months, with monthly average of 1398 lots, valued at USD 200 million, growing more than 100% compared that in 2007. That was relatively low. At the end of 2008, the held RMB/USD futures of CME were only 308 lots, down over 40% comparing with that at the end of 2007, mainly caused by closing positions during the second half of the year. The prices of CME RMB/ USD futures contracts generally coordinated with the oversea NDFs for 3 months. Opened at 7.1685, it swung down to the lowest at 6.7454 on March 13, and swung up after reaching the lowest in July, with the year-ending price at 6.9094, dropping 4% compared with the end of 2007.

Our analysis showed the prices of renminbi derivatives in domestic and overseas markets positively connected and interacted with each other. The renminbi spot price was the core price, which had influence on other prices. The forward prices of instruments with the same duration in domestic and overseas markets coordinated with each other generally.

6. Further improve the international service ability of China's financial markets and open the markets actively and steadily

6.1 Research on building a centralized settlement mechanism for the OTC market of bonds and bond-related derivatives

During the financial crisis, global major supervisory authorities paid attention to the credit and systematic risk of CDS market, which induced by the problems of the CDS market, like separated settlement, non-transparent information, and supervision difficulties. Although the OTC market of bonds and bond-related derivatives including CDS was not so developed in China, it was necessary to research how to build a centralized settlement mechanism for this market. The function of DVP settlement under the linkage between PBC payment system and the current back-office institutions could be used to lower the settlement risk and enhance the efficiency. The duty of collateral management by the back-office institutions could be used to reduce the credit risk of derivatives trade and improve the stability of the market. And the service of providing basic information for evaluation and risk assessment on derivatives and related collaterals by the back-office institutions could help the evaluation of derivatives for centralized settlement. China's securities registration and settlement institutions should improve their core competitiveness to support the innovation and to enhance the efficiency of the market.

6.2 Optimize the participants' structure of China's financial markets

For the exchange market, the foreign institutions could be introduced into CFETS; for the bond market, it was considered to diversify the debt instruments, especial like floating rate and interest rate derivatives, which

could increase the liquidity and efficiency of the bond market as well as attract overseas investors and issuers.

For the stock market, it was necessary to take further study on how to attract the overseas-listed Chinese companies back to the A share market and how to develop the international board, in order to enhance the influence of China's stock market and improve the international competitiveness of China's capital market.

For China's gold market, the overseas participants would continue to play the positive roles in strengthening the linkage between the international and domestic market; for China's futures market, several measures could be taken, including furthers optimizing the participants structure, forming a group of investors with institutional investors mainly, pushing the related enterprises hedging the risk in the futures market, and encouraging the financial institutions participate in the financial futures business.

6.3 Create conditions for Chinese financial institutions and institutional investors to participate in international markets.

China shall actively participate in the cooperation with the foreign financial supervisory authorities to improve the international financial supervision systems, like enlarging the supervisory coverage on the financial market instruments and the participants. China would be quite willing to join the discussions and enactments of international financial rules with the international organizations, aiming to prevent the risk accumulation and expansion, and very willing to participate in the international cooperation of the intervening and rescuing movements for the financial crisis.

China would negotiate with other countries in a bilateral reciprocal way to build a better external environment for the overseas operation of Chinese financial institutions. With the risk under control, China would try to support financial institutions and institutional investors to participate in international markets.

6.4 Push forward China's financial markets opening-up actively and steadily

According to general planning of convertible capital account and with the risks under control, China would loose the limitation on capital account in phases and with choices as well as steadily push forward the convertibility of RMB current accounts, based on the principles of overall planning, developing step-by-step and from easy to difficult as well as allowing for flexibility. Recent researches would be conducted on simplifying the procedures of foreign exchange administration for direct overseas investments by domestic agencies and relaxing the restrictions on cross-border financing, in order to satisfy the foreign exchange needs from domestic enterprises "going out".

The authority would make experiment on RBM trading settlement in several areas including the Yangtze delta, Guangdong province with Hong Kong SAR and Macao SAR, and the provinces of Guangxi and Yunnan with ASEAN. The related policies of foreign exchange administration also would be issued to provide all possible convenience for the importers and exporters.

Moreover, overall planning would be made on constructions of RMB settlement system for cross-border and overseas payments together with the systematic channel for overseas circulation and reflow of RMB notes. China would provide facilities for overseas investors to

hold domestic financial assets and push forward China's financial markets opening-up steadily.

Box 3.4 New patterns of global financial information service market and the financial information platform of Xinhua News Agency

The outbreak of current international financial crisis has given prominence to the role of information services in the financial system. At present, the competition in international financial information service (FIS) market is inadequate, leading to the insufficient transparency of financial information. International financial practices show that the FIS should focus more on the early warning of systemic risks. While paying attention to specific investment decisions and market risks, the service provider should give more weight to monitoring the systemic financial risks of key enterprises, countries and the world as a whole and give early warning.

1. Adjustment in the pattern of international FIS market

In 2008, the merger between the Thomson Corporation with Reuters Group reinforced the original monopoly in the internal FIS market. With the establishment of Thomson Reuters, the international FIS market would see a parallel development of Thomson Reuters and Bloomberg with the market concentration improved further. It was estimated that the size of international FIS market in 2007 approximated USD 14.4 billion, among which the size of Bloomberg, Reuters and Thomson stood at USD 4.7 billion, USD 3.2 billion and USD 1.4 billion respectively, accounting for 32.6%, 22.2% and 9.7% of the total[71]. The merged Thomson Reuters took up almost 32%.

In the meantime, it should be noticed that accompanying the rapid

[71] Source: IMD Reference.

development of information technology and the growth of emerging markets, some new FIS institutions are cutting a conspicuous figure with the FIS market showing signs of a diversified development. The market share of FIS institutions excluding Bloomberg and Thomson Reuters showed a fast development momentum, rising from around 11% in 2005 to more than 35% for the time being[72].

2. Functional expansion of the financial information platform of Xinhua News Agency (XNA)

The diversification of international financial centers has made spacious room for the development of FIS agencies in some emerging countries. In particular, the development of China Finance Corporation (CFC), the financial information platform of **XNA**, captured the attention of global financial market.

On September 20, 2008, CFC and its product, the Xinhua 08 system, was further enriched and improved in terms of content and function after one-year formal operation with the market coverage expanding increasingly to over 3,000 institutional clients. **XNA** has set up financial information collection agencies in world major financial centers, established price information collection outlets in over 350 cities on mainland China and 23 overseas cities, and built up close partnership with financial sub-markets at home and abroad. Mobile phone terminals, video display terminals and the RMB-denominated bond system were all put into live operation while the English version was launched on a trial basis.

On October 20, 2008, XNA and Shanghai Municipal Government (SMG) jointly signed the XNA-SMG Memorandum of Understanding on

[72] Source: Xinhua News Agency.

All-round Strategic Cooperation and established CFC Shanghai Headquarter. In November 2008, XNA and China Executive Leadership Academy Pudong signed a strategic cooperation agreement, according to which both sides would make concerted efforts to build Xinhua 08 financial lab and offer financial curriculum.

3. The growth of CFC is conducive to improving the pattern of international FIS market

When investigating the merger between Thomson and Reuters, U.S. and European regulatory institutions once pointed out that the merger would weaken the competition in fundamental data, profitability expectation data and after-sale market research reports[73], thus exerting a negative impact on the competition in FIS market[74]. Judging from the existing market share, the merger had enhanced the monopoly of Thomson Reuters in current international FIS market, though Thomson and Reuters passed through the investigation by U.S.-European anti-monopoly administrations on the condition that they would sell part of their financial databank. The reinforced monopoly would substantially restrain the effective competition in FIS market and increase the possibility of price hikes in FIS products. The growth of CFC, the financial information platform of XNA, would be conducive to improving the pattern of international FIS market and pushing the market to advance from highly-monopolized to fully competitive, providing services to financial information consumers in a more effective way.

[73] Souce: http://www.usdoj.gov.
[74] Souce: http://www.europa.eu.

Appendix： Highlights of International Financial Market Development in 2008

January

11th The Bank of America declared to acquire the largest commercial mortgage institution, National Finance Corporation (NFC), with the cost of USD4 billion.

22nd The Fed cut the federal funds target rate by 75 basis points to 3.5%, the first time to adjust the rate not through the regular monetary policy commission meeting after "9.11" terrorist attack in 2001.

31st The Fed lowered the fed fund target rate by 50 basis points to 3%

February

7th The BOE cut its benchmark interest rate by 25 basis points to 5.25%.

14th The US President George W. Bush signed a two-year, 168-billion-dollar economic stimulus package, hoping to boost the consumer spending and investment through tax rebates.

18th The British government announced it was moving to nationalize the Northern Rock.

March

11th The Fed announced it would work together with the BOE, the Bank of Canada, the Swiss National Bank and the ECB to inject USD200 billion into the market by using new liquidity instruments, aiming to ease the credit crunch caused by the sub-prime mortgage crisis.

The Fed declared to lend USD200 billion of treasury bonds to banks and investment corporations in exchange for debt, including MBS. It was the first time for the Fed to accept the MBS as collaterals for treasury bonds

lending.

12th The CBOT wheat future price closed at a record high of 1,245 cent/bushel.

14th The emergence meeting of the Fed decided to let FRBNY provide discount loan to the Bear Stearns through JP Morgan Chase to ease its liquidity, which was the first time of the Fed to open the discount widow to the non-savings institutions since the Great Depression in 1929.

The exchange rate of USD against JPY closed below 100 yen/dollar, for the first time in 12 years.

16th The Fed reduced the discount rate by 25 basis points to 3.25% urgently.

17th The London Gold price exceeded USD 1,000 per ounce, the highest in the history.

J.P. Morgan Chase acquired the Bear Stearns with the cost of USD240 million.

18th The Fed cut its target rate by 75 basis points to 2.25%, the lowest since February 2005. The Fed also cut its discount rate by 75 basis points to 2.5%.

April

7th The price of LME copper futures closed at a record high of USD8,730 per ton.

10th The BOE lowered its benchmark interest rate by 25 basis points to 5%, the lowest since November 2006.

22nd The exchange rate of EUR against USD closed at 1.5987 dollar/euro, the highest in the history.

30th The Fed cut its fed funds target rate by 25 basis points to 2%.

May

5th The Standard & Poor's lowered the National Finance Corporation's credit rating to junk status of "BB+".

9th The US House of Representatives passed a bill, which planed to establish a mortgage insurance fund of USD300 billion and to provide billions of dollars to subsidize the house owners, aiming to stabilize the housing market.

June

26th The CBOT corn futures price closed at a record high of 788 cent/bushel.

July

3rd The European Central Bank raised its key-refinancing rate by 25 basis points to 4.25%.

Prices of WTI crude oil futures and Brent crude oil futures hit the historical high at USD 145.2 and 146.1 per barrel respectively.

Price of soybean futures in the CBOT reached its historical high at 1,637 cent/bushel.

11th Price of aluminum futures in LME refreshed its record at 3,317 dollar/ton.

Indy Mac Bank was taken over, which was the second largest financial institution to be closed in U.S. history.

13th In order to rescue the Fannie Mae and Freddie Mac, the US Treasury Department and the Federal Reserve Board carried out a plan, which included a series of measures like providing direct loans and purchasing stocks.

30th The U.S. President George W. Bush signed *The Housing and Economic Recovery Act of 2008.* The act allowed the U.S. Treasury Department to provide sufficient credit to the Fannie Mae and Freddie

Mac and buy their shares if necessary. Moreover, the government would establish a new supervision institution to strengthen the supervision on the Fannie Mae and Freddie Mac.

September

7th The US government announced that the Federal Housing Finance Agency (FHFA) would take over the Fannie Mae and Freddie Mac who were indulged in trouble and the government would hold 79.9% of shares of these two institutions, which was the most influential rescuing activity since breakout of subprime mortgage crisis.

15th The Lehman Brothers filed for bankruptcy protection according to the eleventh chapter of the Bankruptcy Laws of the United States.

The Bank of America announced to acquire the Merrill Lynch through stock swap at a price of USD50 billion, which was half of Merrill Lynch's market value at beginning of 2007.

16th The Federal Reserve Board announced to provide the AIG with loans of USD85 billion, which would be used as collaterals for its asstets of more than USD1 trillion, therefore obtaining 80% shares of AIG.

21st The Federal Reserve Board approved the Morgan Stanley and Goldman Sachs Group Inc. to transform from the independent investment banks to bank holding companies.

24th The Federal Reserve Board announced to sign currency swap agreements with the Central Banks of Australia, Sweden, Denmark and Norway, providing USD30 billion to ease the credit crunch in global financial market.

25th The Federal Deposit Insurance Corporation declared that JP Morgan Chase used USD 1.9 billion to take over part of assets of Washington Mutual Bank, the largest savings bank in America and the largest bank failure in American history.

28th The Governments of Belgium, the Netherlands and Luxembourg

announced that they would inject EUR11.2 billion to partly nationalize the Fortis Group, a joint venture of the Netherlands and Luxembourg.

October

3rd The U.S. House of Representatives passed a bill of USD700 billion for financial rescue and a tax rebate plan of USD149 billion for other areas.

8th The Fed, the European Central Bank, the Bank of England, the central banks of Canada, Sweden and Switzerland cut their benchmark interest rate simultaneously for 50 basis points.

The British Ministry of Finance announced a plan of capital injection to the eight largest banks of U.K.. Meanwhile the U.K. government would provide GBP50 billion to these banks and the BOE would also provide a special liquidity package of GBP200 until the market to be stable.

10th The G7 announced a plan to cope with global financial crisis in Washington D.C.

11th The Group of Twenty (G20) Finance Ministers and Central Bank Governors met in Washington D.C.. The statement of the meeting said that any measures of economic and financial tools would be taken to ensure the stability of global financial market.

12th The 15 members of euro zone stated to launch a set of bank rescue plan which included capital injection and debt guarantee. And all 27 members of EU would join this rescue plan.

14th The US President George W. Bush stated that the government would spend USD250 billion from the rescue plan of USD700 billion to buy shares of the financial institutions directly.

The European Commission approved the rescue plan of British government, totaling GBP500 billion.

17th The German Federal Diet (Bundestag) passed the rescue plan advanced by the government, a total of EUR500 billion, aiming to

stabilize the financial market in crisis.

24th The British government issued an economic stimulus plan of GBP20 billion with the core measure of value-added tax rebate.

27th With the impact of sharp appreciation of yen and the worries of investors on the global economic prospect, the Nikkei 225 closed at 7,162.9, the lowest since October 1982.

29th The Fed cut the fed funds target rate by 50 basis points to 1%.

30th The Japanese prime minister announced an economic stimulus package of JPY26.9 trillion.

31st The Bank of Japan cut its unsecured overnight call rate to 0.3% from 0.5%, which was the first rate reduction since March 2001.

November

6th The ECB cut its target rate by 50 basis points to 3.25%. The BOE cut its benchmark interest rate by 150 basis points to 3%, the lowest since 1955, which was the largest decrease in the past 10 years.

9th The 2-day meeting of G20 Finance Ministers and Central Bank Governors concluded in St. Paul, Brazil.

10th The US Treasury and the Fed announced the plan to purchase USD40 billion of preferred shares of AIG. Furthermore, in order to ease the capital and liquidity stress of AIG, the Fed authorized FRBNY to establish two new independent institutions, which increased total rescue amount to USD150 billion.

15th The first summit of the G20 leaders on financial markets and the world economy was held in Washington D.C., the G20 leaders made a plan of action on the financial and economic problems the world faced currently. The meeting published a declaration on stabilizing the global economy and dealing with the financial crisis positively.

20th The exchange rate of EUR against USD closed at 1.2457 USD/EUR, the lowest in the past 2 years.

The American stock market tumbled down sharply. In particular, the Dow Jones Industrial Average closed at 7,552, the lowest in the past five and a half years; the S&P 500 index closed at 752, record low in the past eleven years; the NASDAQ-100 Index closed at 1,316, the lowest in the past five years.

21st The FTSE 100 Index closed at 3,781, the lowest since 2003.

23rd The US government announced to spend USD20 billion from the rescue plan of USD700 billion to buy shares of the Citigroup. Citigroup would pay the government's stake at a yearly interest rate of 8%. The U.S. Treasury and the Federal Deposit Insurance Corporation (FDIC) would provide protection against $ 306 billion of non-performing loans and securities of the Citigroup.

25th The U.S. Treasury and the Federal Reserve Board announced to plunge together USD800 billion to boost the consumer credit and mortgage-backed securities markets.

26th The European Commission stated a vast economic stimulus plan of EUR200 billion, which aimed to coordinate actions of its members in rescuing real economy.

December

4th Many European central banks took their joint actions to cut benchmark interest rates for the third time in recent two months. The Swedish central bank sharply reduced its main interest rate from 3.75% to 2%. The BOE cut its interest rate by 100 basis points to 2%. The ECB cut the prime interest rate to 2.5% from 3.25%, the largest drop in the history.

12th The Japanese prime minister announced an economic stimulus package of JPY23 trillion, to deal with the problems of liquidity and employment issues.

16th The U.S. Federal Reserve slashed its target interest rate from 1% to a range of between zero and 0.25% and declared to cope with the

recession and crisis with any measures.

Price of LME aluminum futures closed at USD1,471 per ton, the lowest since October 2003.

17th The exchange rate of USD against JPY touched the lowest point in the past 13 years, at 87.31 JPY/USD.

The OPEC decided to reduce daily production by 2.2 million barrels from January 1, 2009 on. Since September 2008, the OPEC had declared to cut daily production by 4.2 million barrels accumulatively.

19th Prices of WTI crude oil futures closed at USD 33.87 per barrel, the lowest since February 10, 2004.

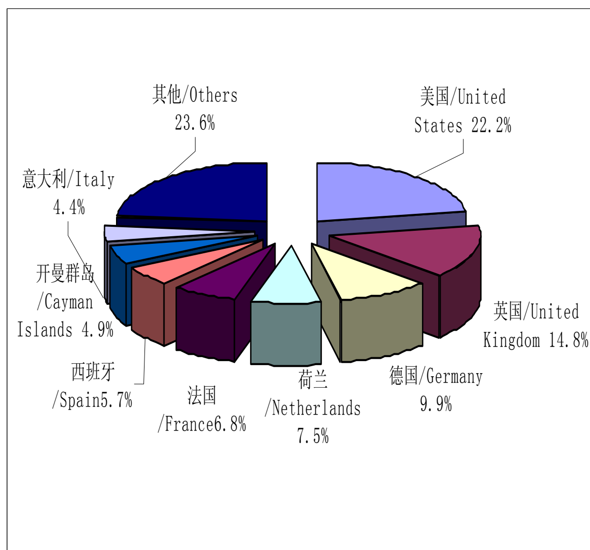
The U.S. President George W. Bush announced to allocate USD17.4 billion urgent loans from its USD700 billion financial rescue plan to the troubled U.S. auto enterprises.

The Bank of Japan announced to reduce inter-bank unsecured overnight call rate from 0.3% to 0.1%. It also decided to help enterprises financing through purchasing their commercial notes and short-term corporate bonds and to inject long-term capitals to capital market through buying government bonds.

24th The price of Brent crude oil futures closed at 36.61 dollar/barrel, the lowest since May 5, 2004. The price of LME copper futures closed at USD2,845 per ton, the lowest since November 2004.

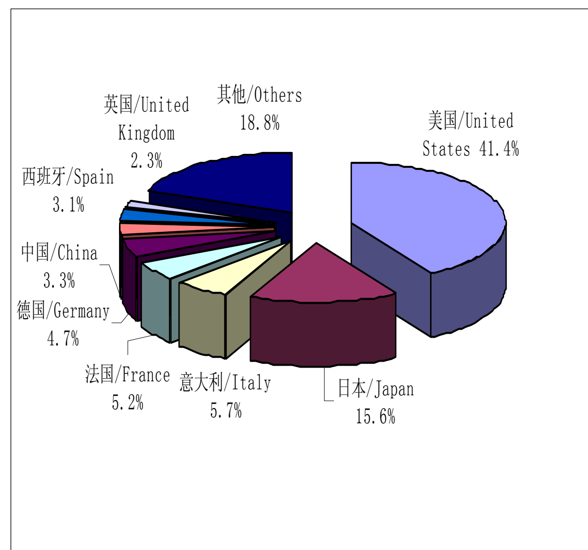
30th The exchange rate of GBP against USD closed at 1.4435 USD/GBP, the lowest point in the past six years.

Figure2.1 Distribution of international bond outstanding (June 2008)



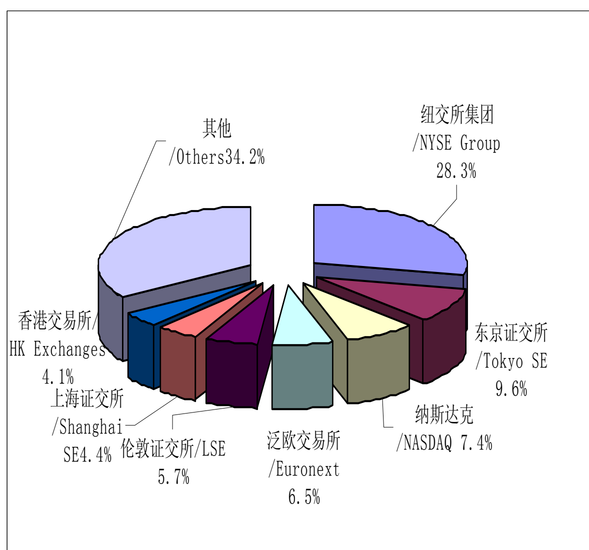
Source: BIS website, www.bis.org.

Figure2.1 Distribution of domestic bond outstanding balance in global bond market (June 2008)



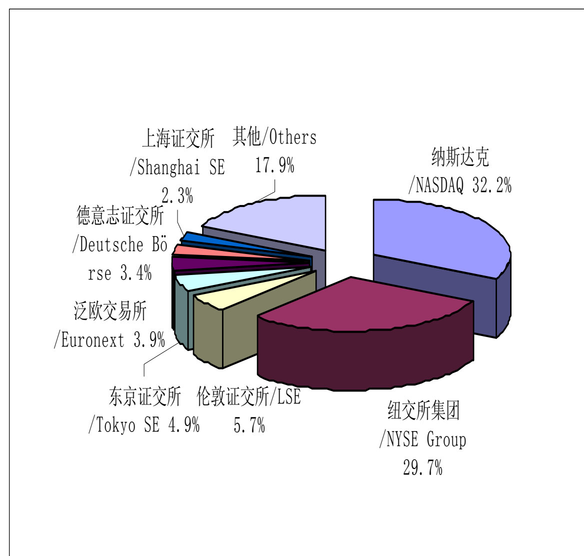
Source: BIS website, www.bis.org.

Figure2.3 Distribution of stock market capitalization in global stock exchanges



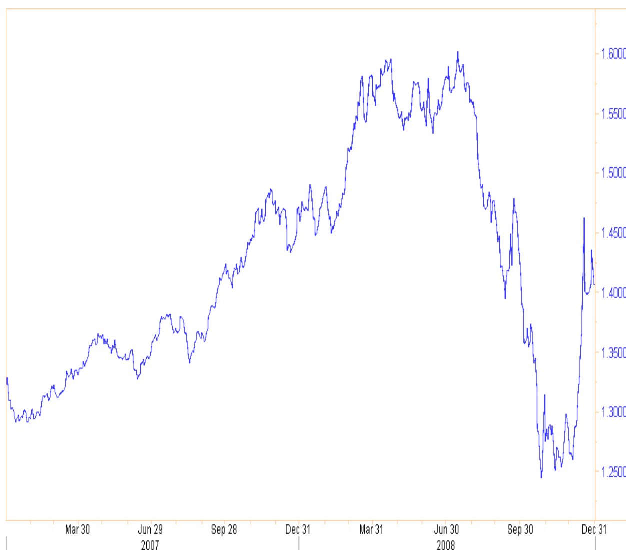
Source: WFE website, www.world-exchanges.org.

Figure 2.4 Distribution of stock trading volume in global stock exchanges



Source: WFE website, www.world-exchanges.org.

Figure 2.5 Exchange Rate of USD/EUR



Source: Xinhua08.

Figure 2.6 Exchange rate of JPY/USD

Source: Xinhua08.

Figure 2.7 Exchange rate of USD/GBP

Source: Xinhua08.

Figure 2.8 CNY one-year NDF

Source: Xinhua08.