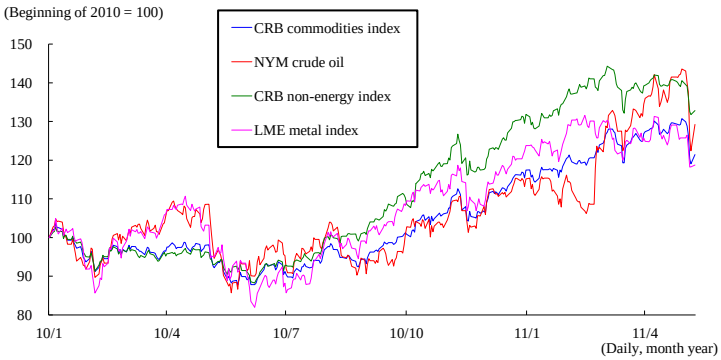
Section 2 Risks Involved in the World Economy

1. The factors and effects of remarkable rise in prices of food and resources

(1) Current situation of prices of major food and resources

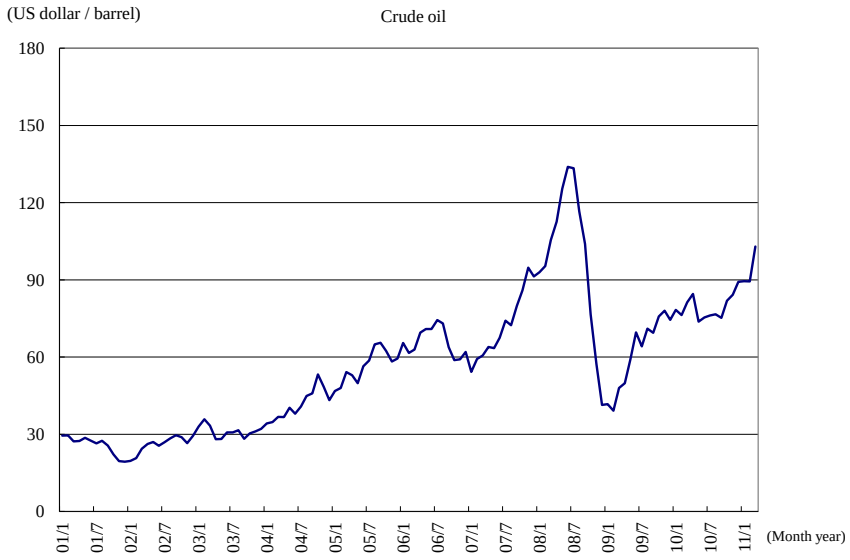
Food and resources prices soar worldwide, and mostly the prices of staple commodities register a greater increase (Figures 1-2-1-1 and 1-2-1-2).

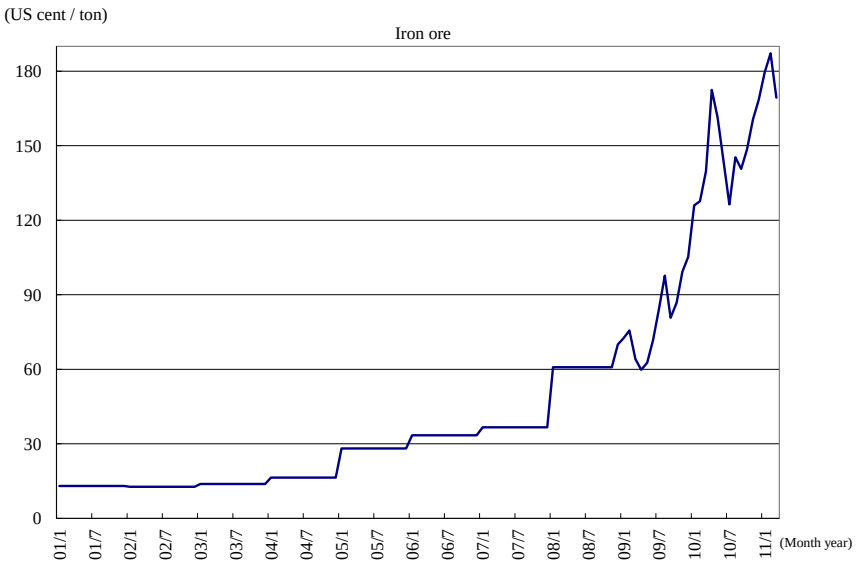
Figure 1-2-1-1 Transition of international commodities market conditions

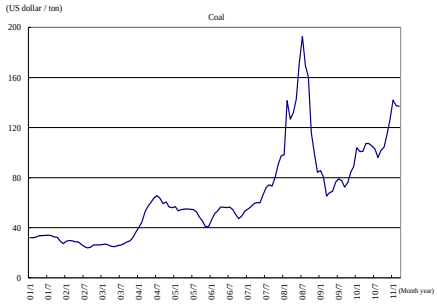


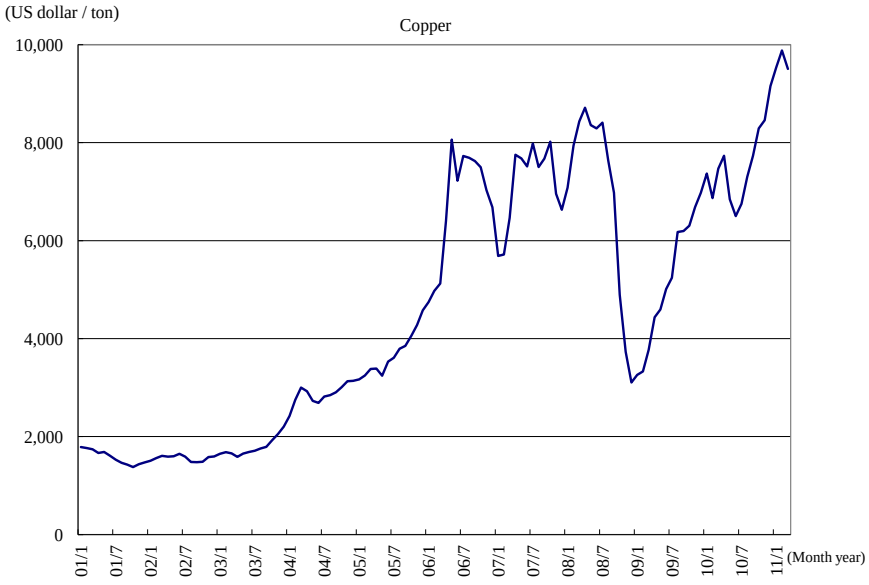
Notes:
1. Composition of Commodities of Commodities Research Bureau (CRB) is 19 items including gold, silver, copper, aluminum, nickel, crude oil, heating oil, unleaded gasoline, natural gas, corn, soy bean, wheat, cotton, beef, pork, cocoa, coffee, orange juice and sugar.
2. New York Mercantile Exchange (NYM) crude oil is WTI futures.
3. Composition of commodities of London Metal Exchange (LME) metal index is 6 items including aluminum, copper, nickel, lead, tin and zinc.
Sources: Bloomberg

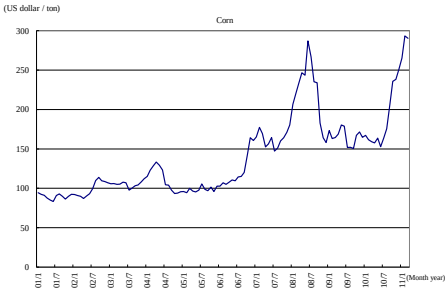
Figure 1-2-1-2 Transition of principal resources and food prices (over the past 10 years, monthly)

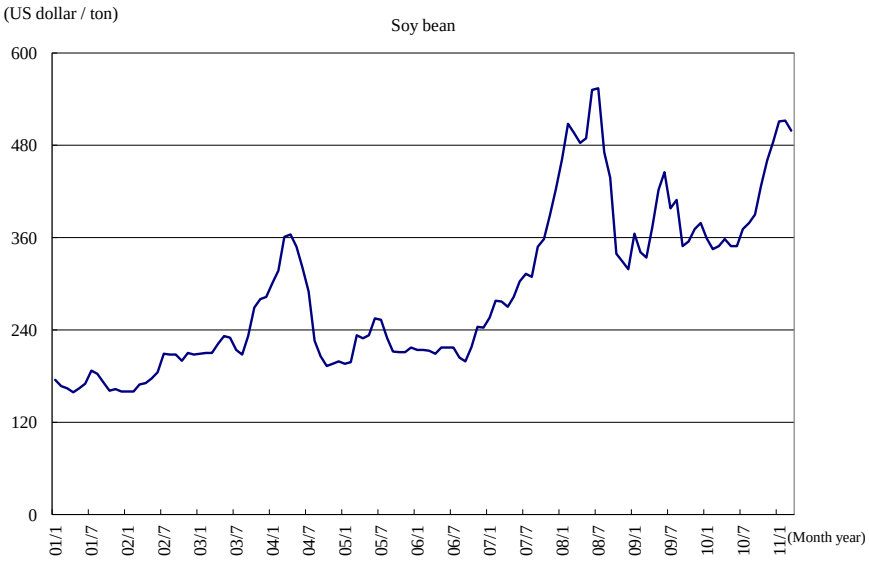


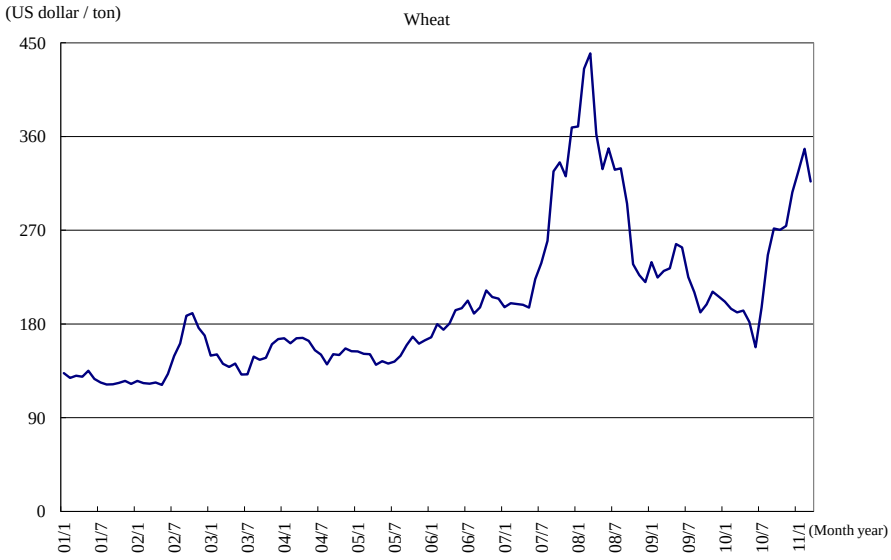


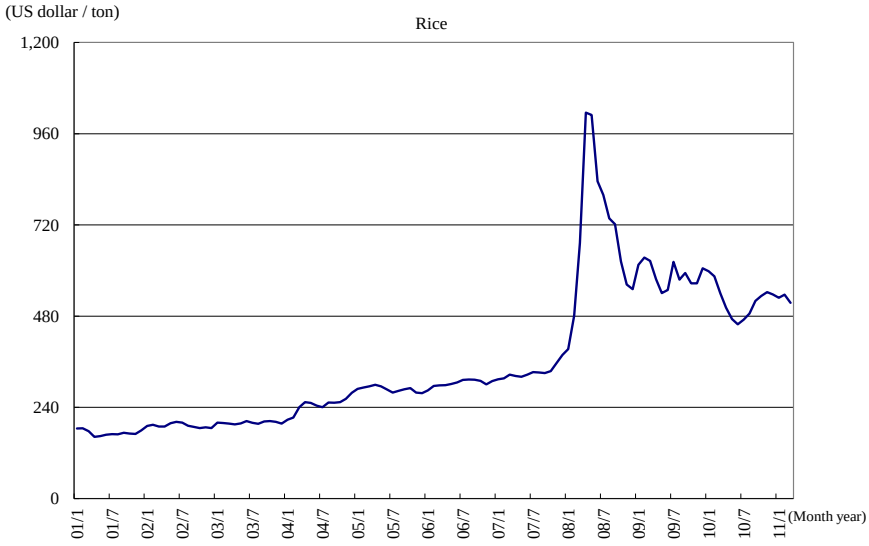

(US dollar / ton)
Coal
200
160
120
80
40
0
01/1
01/7
02/1
02/7
03/1
03/7
04/1
04/7
05/1
05/7
06/1
06/7
07/1
07/7
08/1
08/7
09/1
09/7
10/1
10/7
11/1
(Month year)


(US dollar / ton)
Copper
10,000
8,000
6,000
4,000
2,000
0
01/1
01/7
02/1
02/7
03/1
03/7
04/1
04/7
05/1
05/7
06/1
06/7
07/1
07/7
08/1
08/7
09/1
09/7
10/1
10/7
11/1
(Month year)


(US dollar / ton)
Corn
300
250
200
150
100
50
0
01/1
01/7
02/1
02/7
03/1
03/7
04/1
04/7
05/1
05/7
06/1
06/7
07/1
07/7
08/1
08/7
09/1
09/7
10/1
10/7
11/1
(Month year)


(US dollar / ton)
Soy bean
600
480
360
240
120
0
01/1
01/7
02/1
02/7
03/1
03/7
04/1
04/7
05/1
05/7
06/1
06/7
07/1
07/7
08/1
08/7
09/1
09/7
10/1
10/7
11/1
(Month year)



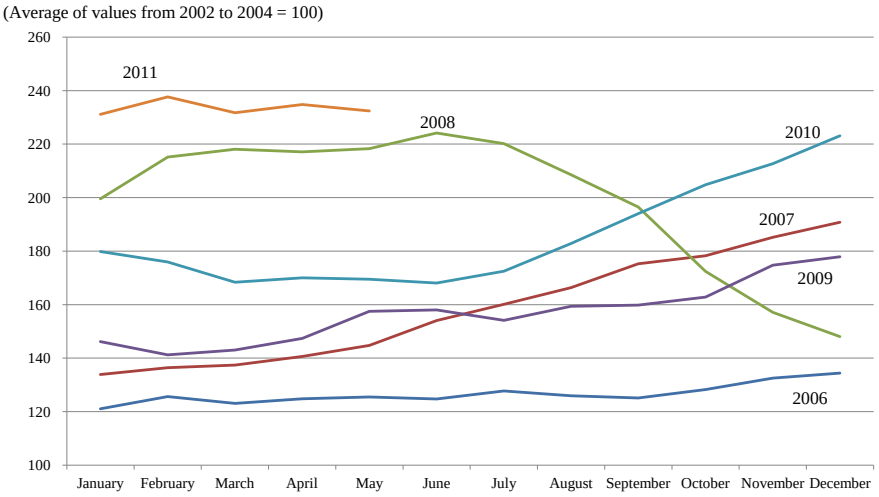


Notes: Crude oil (WTI spot price); Iron ore (Brazilian products, contract price for Europe); Coal (Australian products, general coal spot price); Copper (Spot price at London Metal Exchange); Corn (US products, US Gulf of Mexico); Soy bean (US products, Rotterdam Futures Transaction); Wheat (US products, US Gulf of Mexico); Rice (Thailand products, Bangkok)
Sources: IMF

In summer of 2010 and later, all the resources prices suddenly rose. In November 2010, there was a situation in which the products market conditions were largely adjusted, but it did not reach such a situation to turn the tide of rising prices of resources. As of the crude oil price, in addition to increased demands especially in the emerging economies, as the inflow of funds into the crude oil market aided by global monetary easing policies, and tightening of supply due to political instability in the Middle East and North Africa and other concerns in the crude oil markets pushed the WTI[1] crude-oil futures (short maturities) temporarily over US$100 for 1 barrel in February for the first time in 2 years and 5 months. The crude oil price continued increasing thereafter, but after having largely fallen in early May, violent ups and downs continued, and the price hovered around US$100 for 1 barrel.

In addition, according to the food price index[2] announced by Food and Agriculture Organization (FAO), the world food prices increased consecutively for 8 months from July 2010 and recorded a historic high in February (Figure and Table 1-2-1-3).

Figure 1-2-1-3 Transition of FAO food price index



Sources: FAO

[1] West Texas Intermediate (WTI) Crude oil produced around the State of Texas, U.S.A. The futures are sold and bought in New York Mercantile Exchange (NYMEX). The WTI crude oil futures price has close relationship with the domestic demand of the Unite States of America, which is the world's largest consumption market. As the largest transaction volume is fund in the futures market and transparency to decide prices is higher, WTI is a dominant indicator of the international price of crude oil.

[2] FAO Food Price Index (http://www.fao.org/worldfoodsituation/wfs-home/foodpricesindex/en/)

(Average of values from 2002 to 2004 = 100)

	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
2006	121.1	125.6	123.1	124.8	125.5	124.7	127.7	126.0	125.1	128.3	132.5	134.4
2007	133.8	136.4	137.4	140.6	144.7	154.0	160.1	166.4	175.3	178.2	185.1	190.8
2008	199.6	215.2	218.1	217.1	218.3	224.1	220.2	208.6	196.5	172.4	157.1	148.0
2009	146.2	141.2	143.0	147.4	157.5	158.0	154.1	159.4	159.8	162.8	174.7	177.9
2010	179.8	175.9	168.4	170.0	169.5	168.1	172.5	182.8	194.0	204.8	212.7	223.1
2011	231.1	237.7	231.7	234.8	232.4	－	－	－	－	－	－	－

Sources: FAO

As for the international market for the main food grain, unpredictability continued due to unseasonable weather conditions in the main production areas around the world. Furthermore, the upward movements of some specific domestic food prices in the emerging economies were controlled in many countries by revision of the monetary policy and implementation of control measure.

(2) Factors caused sudden raises in prices of food and major resources

The factors causing inflationary pricking of food and resources were; (a) increased actual demand, especially in the emerging economies; (b) unsteady supply caused by unseasonable weather conditions; (c) uneasiness in the political situations in exporting countries; (d) funds inflow from the monetary markets. It can be considered that these factors had an effect on the inflationary trends in prices backed by the monetary easing environment[3] worldwide.

(A) Analysis of factors leading to fluctuations of food and resources prices

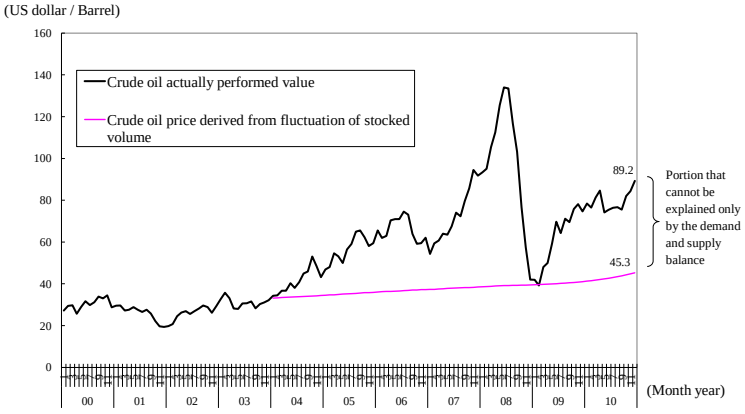
In the section below, in order to analyze factors causing fluctuations of food and resources prices, the stocks of crude oil, non-ferrous metal (copper), grain (wheat and corn) for which data were available as international commodities, were selected and surveyed[4].

First, fluctuations in crude oil and copper prices were divided into two portions; one was explicable by the supply-demand balance (prices from fluctuation of stock volume), which was obtained from the inventory, and another was inexplicable by the supply demand balance (Figure 1-2-1-4). From this figure, it is understood that from early 2009, the increase of performed price (real price) largely exceeded increase of the price from the change of stock volume (in this Figure, the part of "inexplicable portion only is affected by the supply-demand balance"). In addition, when the grain (wheat and corn) was divided in the same way (Figure 1-2-1-5), the increase of performed price largely exceeded increased of the portion, which was explicable by supply-demand balance obtained from the inventory (price from fluctuation of estimation of the world ending inventory). And during the summer of 2010 and thereafter, the force became stronger.

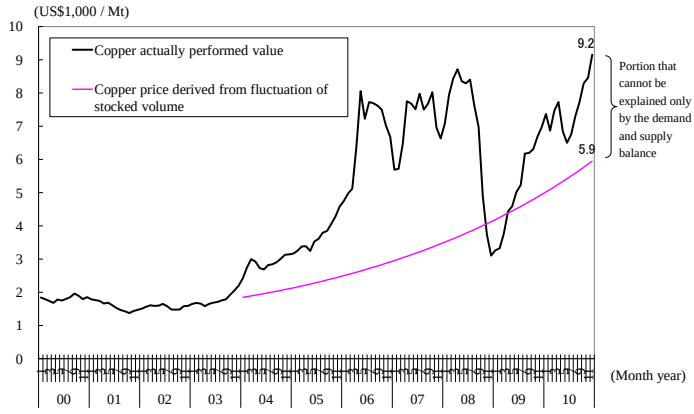
[3] Refer to Chapter 1, Section 1, 1. (3) Monetary easing by the advanced economies and international financial flow

[4] On estimation method, refer to “Note 1; Estimation of fluctuation factors of prices of crude oil, copper, wheat and cone”. The same analysis was carried out in the Chapter 1, Section 1. 3. of “White Paper on International Economy and Trade 2008”, Ministry of Economy, Trade and Industry

Figure 1-2-1-4 Decomposition of factors causing price fluctuation (crude oil and copper)

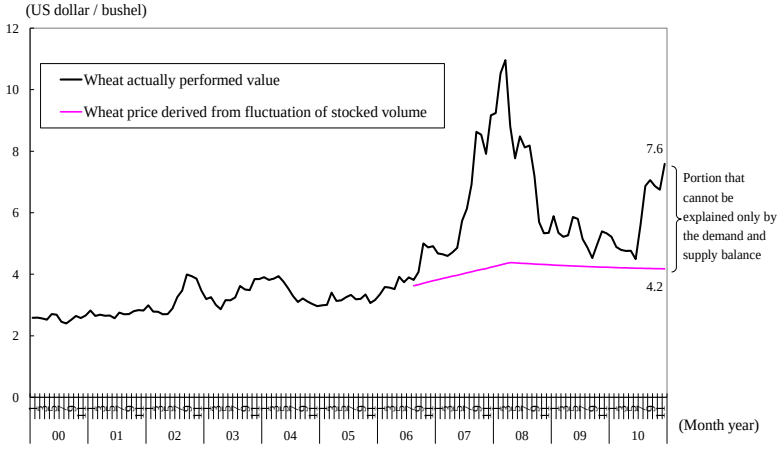


Notes: Refer to appendix note 1 on details of estimation.
Sources: New York Mercantile Exchange; API "Monthly Statistical Report"; DTI "Energy Trend"; BAFA "Amitliche Mineralolodaten"; IEA "Monthly Oil & Gas Survey"

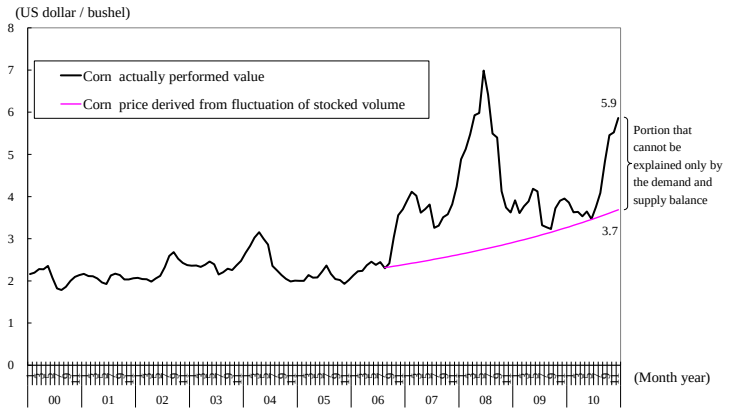


Notes: Refer to appendix note 1 on details of estimation.
Sources: London Metal Exchange

Figure 1-2-1-5 Decomposition of factors causing price fluctuation (Wheat and corn)



Notes: Refer to appendix note 1 on details of estimation.
Sources: Chicago Board of Trade; US Department of Commerce "World Agricultural Demand and Supply Estimates"



Notes: Refer to appendix note 1 on details of estimation.
Sources: Chicago Board of Trade; US Department of Commerce "World Agricultural Demand and Supply Estimates"

From these facts, it became clear that the prices increased due only to inexplicable factors in the supply-demand balance.

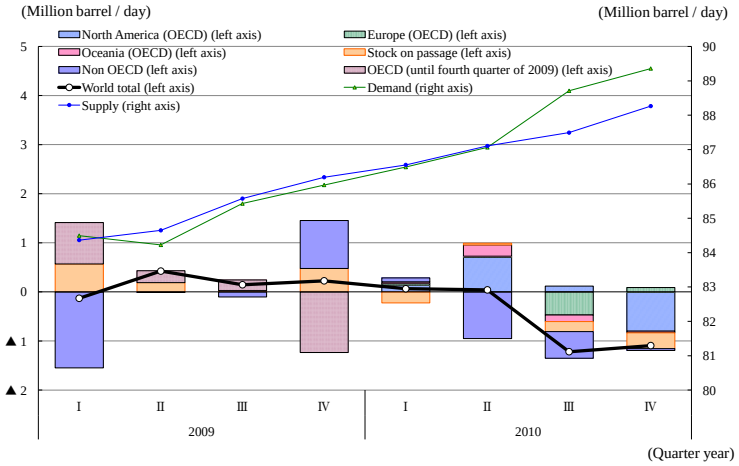
(B) Each factor caused rises in prices of food and resources

Each factor is discussed in the section bellow.

(a) The increase of real demand especially from the emerging economies

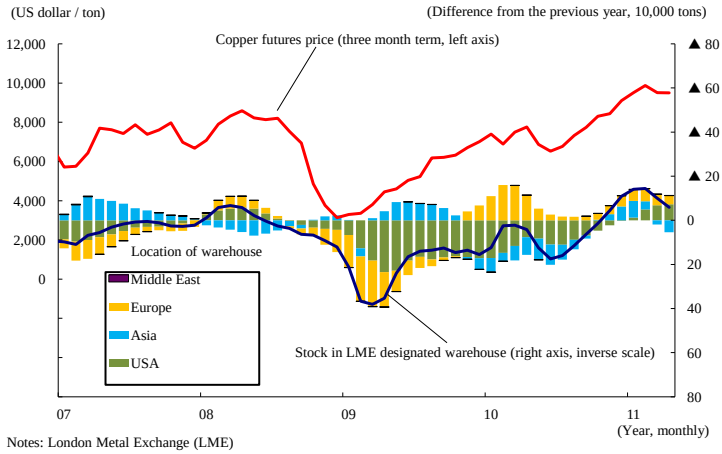
One of the factors causing the remarkable rise of food and resources prices after the summer of 2010 is the feeling of tightening supply-and-demand caused by the increase of actual demand. Demand for crude oil exceeds the supply (Figure 1-2-1-6) with increasing demand from the emerging economies. And also stock of copper is decreasing worldwide (Figure 1-2-1-7).

Figure 1-2-1-6 Transition of crude oil demand and supply (inventory fluctuation)



Notes: Inventory fluctuation in each quarter
Sources: IEA, Oil Market Report (March 2011)

Figure 1-2-1-7 Copper: inventory fluctuation and price movement



Notes: London Metal Exchange (LME)
Sources: Bloomberg

(b) Unsteady supply caused by unseasonable weather conditions

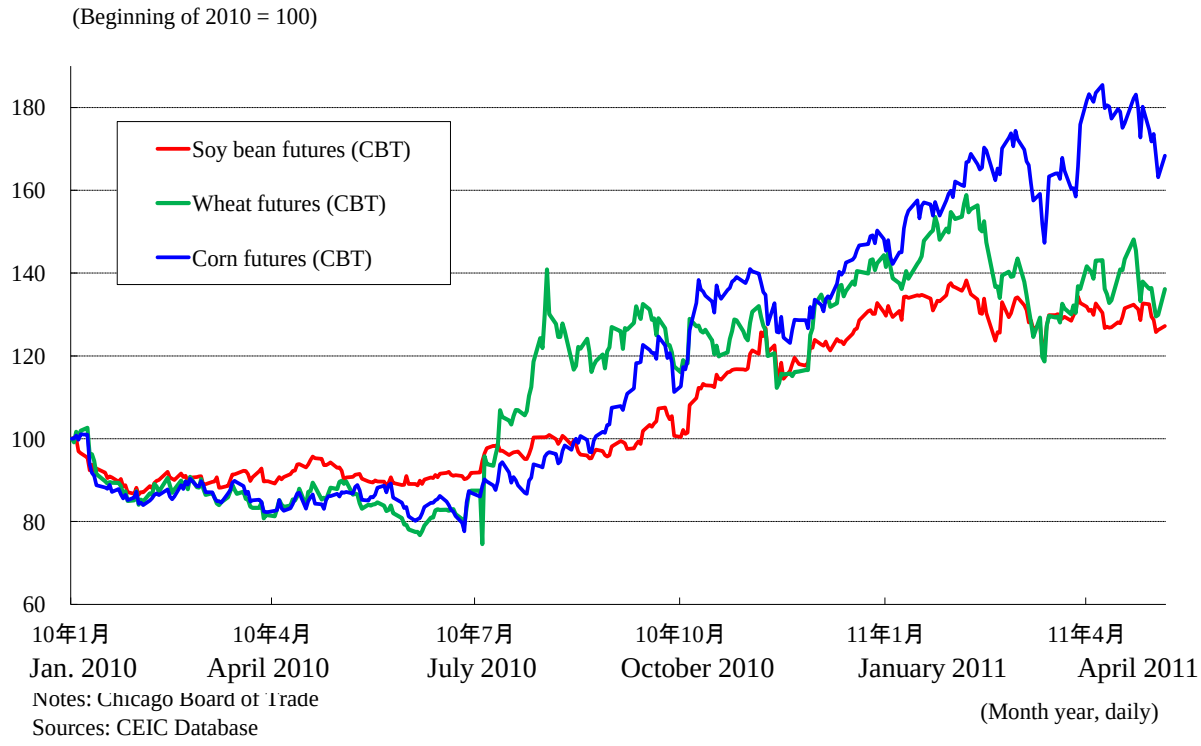
As for the grain, there was the increased demand in the emerging economies as a base, but the decreased amount of production caused by unseasonable weather and drought in the summer of 2010 triggered the remarkable rise in the prices.

As for the wheat, in 2010/11 fiscal years, crop cultivating areas decreased under background of the economic slump after the world economy crisis and the market price decline in the cropping period, and the amount of production is expected to decrease in the world as a whole by due to unseasonable weather in main gain producing countries/regions. As to the unseasonable weather, for example, crop areas in Canada were expected to decrease largely due to storm of rain in the western 3 plain states in June 2010. And in EU, heat wave in the western region and flooding in the eastern region had negative effect to the crop and yield per area[5] was expected to decrease. Also in Russia, the drought from June through the beginning of August, which might be the severest drought in the past 130 years, made the yield significantly decrease[6]. The crop production in Russia decreased nearly 60% from the previous year and it resulted the export ban[7]. As a result, the supply and demand became tight worldwide, and the ending inventory in United States of America, Europe and India was expected to decrease.

Additionally, the shortage in the wheat was responsible for rises in the price of corn, which was a substitution for wheat as feeding stuff (Figure 1-2-1-8).

[5] Crop yield per unit area
[6] Ministry of Agriculture, Forestry and Fishery of Japan, "Overseas Food Supply and Demand Report" each edition
[7] Prime Minister Putin stated on May 28, 2011 that the crop export ban would be removed on July 1, 2011.

Figure 1-2-1-8 Appreciation of wheat price and spreading to grain prices



Notes: Chicago Board of Trade
Sources: CEIC Database

(c) Political instability in the exporting countries

The crude oil price was affected by the recent situation in Middle East and North Africa. Under the tense situation in Middle East and North Africa, the crude oil prices showed unstable fluctuations. As the WTI futures exceeded the barrier of US$90 for one barrel at the end of 2010, further rise in price of crude oil was expected, but it reached a ceiling of around US$91 after that. And the price returned to US$ 81 level in late January when the market became conscious about the economic deceleration in the emerging economies due to the monetary tightening. However, when the movement of democratization started in Egypt and spread to Tunisia and the demonstrations escalated, the price of WTI futures rose again to US$90 level. After that, the worsening Libya situation, pushed the crude oil price above the US$100 barrier in February.

(d) Funds inflow from the monetary markets

Behind these sudden rises in prices of food and resources, the monetary factor (active investment and speculative funds inflow) was also pointed out in addition to the tight actual demand situation. According to the preceding study, having been backed by improvement of the futures market infrastructure such as the monetary easing environment, commodity index and Exchange Traded Fund (ETF), the institutional investors started to actively invest funds to the commodity markets[8] since middle of the 2000's.

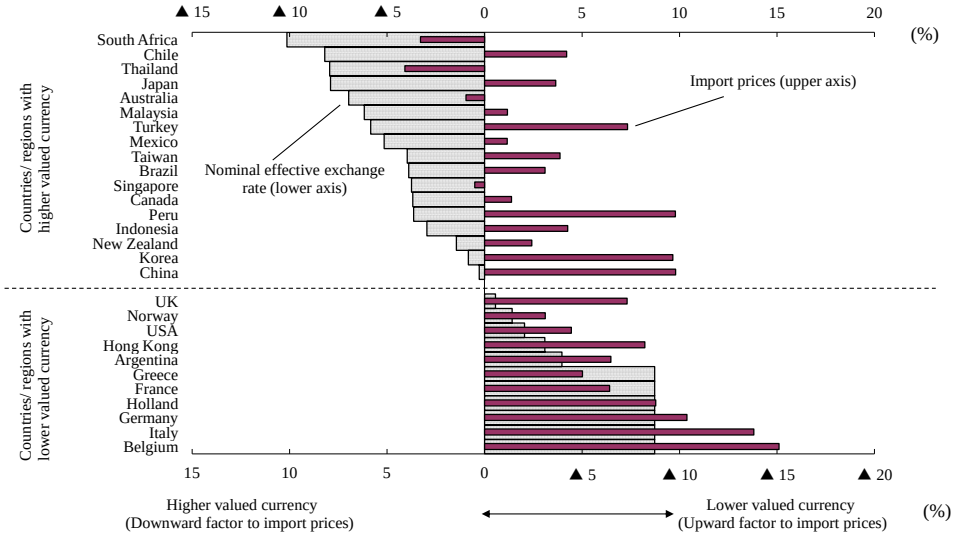
[8] Kimura, T. "Background of recent rise in condition of the international commodity market – influence from the monetary easing environment worldwide and monetary commercialization of commodities" (the Bank of Japan, "NICHIGIN review"), March 2011

(3) Influence on world economy and the future outlook

(A) Influence on world economy

The sudden rise in prices of food and resources caused rises in import prices in countries and regions. As the size of price increase was large, the import prices were increasing even in countries and regions where their currency value rose higher, and countries and regions with lower currency value faced further increases in import costs (Figure 1-2-1-9).

Figure 1-2-1-9 Changes in import prices and nominal effective exchange rate in countries/ regions

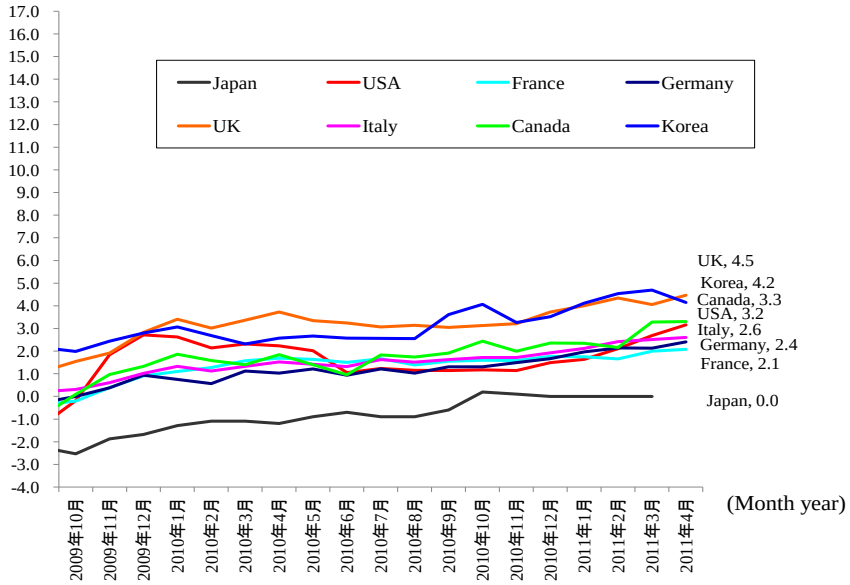


Notes:
1. Changes from the fourth quarter of 2009 through the fourth quarter of 2010
2. The nominal effective exchange rate was calculated by JP Morgan Securities
Sources: Datastream

With rises in import prices coupled with domestic economic expansion, the inflation rates in the emerging economies were increasing (Figure 1-2-1-10). On the other hand, the advanced economies, contrary to periods from 2007 to 2008 when the economy was booming and the unemployment rate was low, were moderately recovering from the economic recession following the world economic crisis. And Japan still had difficulty to break away from the deflationary situation. It considered that the advanced economies might become weak to absorb the costs caused by the sudden rises in food and resources. The rises in prices of food and resources were considered to be negative factors for the economy.

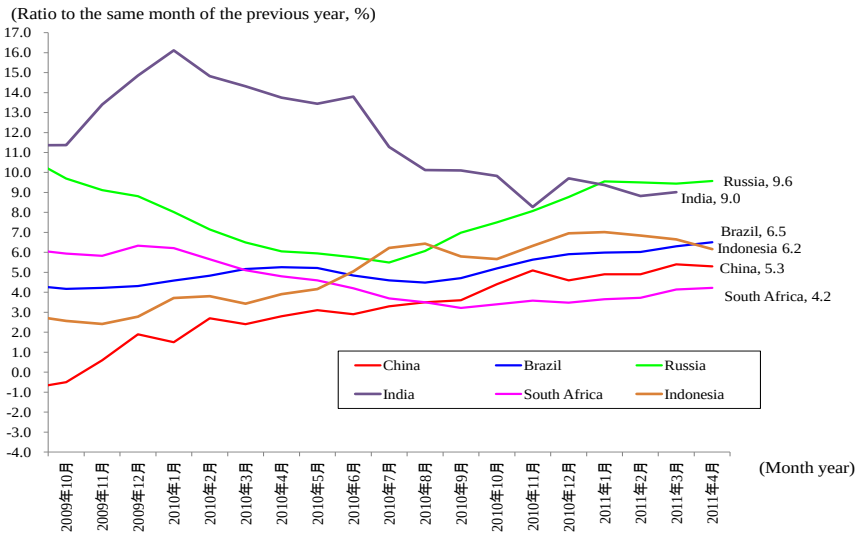
Figure 1-2-1-10 Transition in the consumer price index (advanced and emerging economies)[9]

(Ratio to the same month of the previous year, %)



Sources: Datastream

[9] Figures 1-1-1-17 and 18 are shown again.



Sources: Datastream

(B) Future outlook

According to IMF, while demand for food and resources continue to increase, the supply has various uncertain factors, it is estimated that prices of food and resources may be in unstable transition in 2011[10].

According to prospect from the United States Department of Agriculture, the world grain production in 2011/2012 fiscal year will increase compared with the previous year and slightly exceed the consumption. Therefore, the ending inventory will be increased, but the ending inventory ratio[11] will decrease compared with the previous year due to increase of the consumption[12].

Individually examining the production estimation of the grain, winter season wheat decreases in United States of America due to drought in the cropping areas, but the whole production is estimated to reach the all-time high supported by the recovery of the unit yield in Russia and Ukraine and increased cropping areas in India. Corn is also estimated to reach the all-time high due to increase in the cropping areas in United States of America, China and Argentina.

Secondly, the consumption of grain is estimated to increase due to increased demand for feeding stuff as well as steady demand as food and use for ethanol material. Wheat consumption is estimated to

[10] Specifically, the crude oil supply is responding sluggishly to the ongoing pickup in demand, largely reflecting the policy stance of OPEC, and global food output should recover quickly from recent supply shocks, with increased global acreage and more nomal weather conditions pointing to favorable harvest prospects in 2011, low inventories will take time to rebuild, and so prices are likely to remain more volatile than usual. (IMF, "World Economic Outlook: Tensions from the Two-Speed Recovery- Unemployment, Commodities and Capital Flows", April 2011)

[11] Percentage of the ending inventory to the consumption

[12] Ministry of Agriculture, Forestry and Fishery of Japan, "Overseas Food Supply and Demand Report" May 31, 2011

increase due to demand from EU as feeding stuff and from Asia and Africa as food. Corn consumption is also estimated to increase by demand from Asia especially China and South America as feeding stuff and from United States of America to use for ethanol use[13].

In case rises in prices of food and resources continue for long period, the inflation pressure becomes stronger, and it suppresses family finance of the lower-income class especially in the emerging economies, and it becomes a risk factor to cause serious social uneasiness[14]. Moreover, the rise in price of food, in addition to the conflict and the natural disaster such as flooding and drought caused by unseasonable weather become factors to worsen the starvation issue. And as a result, it may directly hit lives of the poverty group[15].

Therefore, the sudden rises in prices of food and resources become an important concern to the world economy. It is generally said that various factors including increase of actual demand in the emerging economies, political instability, monetary easing environment etc. as discussed above, are compositely causing the rises in prices of food and resources. The G20 Finance Ministers and Central Bank Governors Meeting established "Study Group on Commodities" in February 2011 to promote comprehensive understanding on actual conditions of the background and fluctuation factors on the international commodities markets.

[13] Ministry of Agriculture, Forestry and Fishery of Japan, "Overseas Food Supply and Demand Report" May 31, 2011, International Grains Council, "Grain Market Report", May 26, 2011 and others

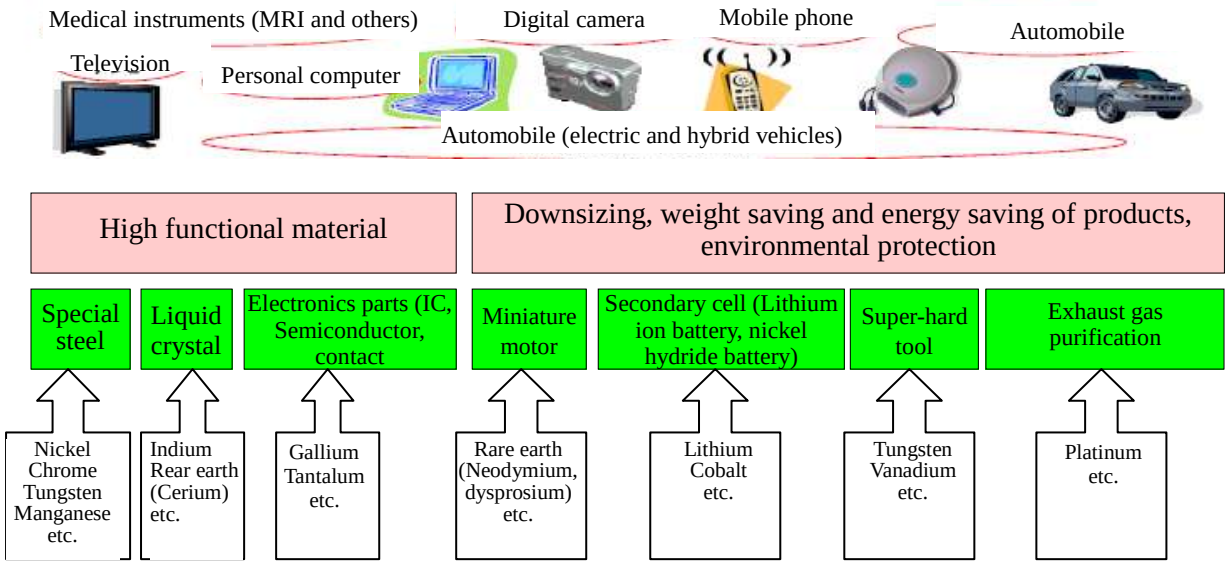
[14] Large-scale anti-government demonstration occurred in Tunisia and Egypt in December 2010 through January 2011. The sudden rise in price of food as well as dissatisfaction to the continued dictatorial regime and the high unemployment rate of the young group may be reasons behind these incidents. With this, anti-governmental movement to demand democratization later spread in other Middle East and the North African countries.

[15] Ministry of Economy, Trade and Industry: (2010) "White Paper on International Economy and Trade 2010", Chapter 1, Section 1, 1. (2).

Column 1　The rare metal; attracting attention

Recently, rare metals, which are used for functional material, and electronic/ magnetic material, are increasingly attracting attention. In Japan, it is defined that "metals for which industrial demand exists and continues to exist in future and metals for which new industrial demand is expected to exist in association with the new technological renovation among metals of which abundance on the earth is rare or difficult to extract due to technological or economic reasons"[16]. The rare metals are indispensable material to manufacture high value added/ high functional products such as cell-phone, LCD television, personal computer, digital camera, automobile and solar panel (Column, Figure 1-1 and 1-2).

Column Figure 1-1 Main purposes of rear metal



Sources: Ministry of Economy, Trade and Industry, "Strategy to secure rear metal" (July 28, 2009)

Column Figure 1-2　31 types of rare metal

Group / Cycle	I A Alkali group	II A Alkali earth group	III B Rare earth group	IV B Titanium group	V B Vanadium group	VI B Chrome group	VII B Manganese group	VIII Iron group (4 cycles) Platinum group (5 and 6 cycles)			I B Copper group	II B Zinc group	III A Aluminum group	IV A Carbon group	V A Nitrogen group	VI A Oxygen group	VII A Halogen group	O Inert gas group
1	1H Hydrogen																	2 He Helium
2	3 Li Lithium	4 Be Beryllium											5 B Boron	6 C Carbon	7 N Nitrogen	8 O Oxygen	9 F Fluorine	10 Ne Neon
3	11 Na Sodium	12 Mg Magnesium	Rare earth										13 Al Aluminum	14 Si Silicon	15 P Phosphorus	16 S Sulfur	17 Cl Chlorine	18 Ar Argon
4	19 k Potassium	20 Ca Calcium	21 Sc Scandium	22 Ti Titanium	23 V Vanadium	24 Cr Chrome	25 Mn Manganese	26 Fe Iron	27 Co Cobalt	28 Ni Nickel	29 Cu Copper	30 Zn Zinc	31 Ga Gallium	32 Ge Germanium	33 As Arsenic	34 Se Selenium	35 Br Bromine	36 Kr Krypton
5	37 Rb Rubidium	38 Sr Strontium	39 Y Yttrium	39 Y Zirconium	41 Nb Niobium	42 Mo Molybdenum	43 Tc Technetium	44 Ru Ruthenium	45 Rh Rhodium	46 Pd Palladium	47 Ag Silver	48 Cd Cadmium	49 In Indium	50 Sn Tin	51 Sb Antimony	52 Te Tellurium	53 I Iodine	54 Xe Xenon
6	55 Cs Cesium	56 Ba Barium	57-71 Lanthanoid	72 Hf Hafnium	73 Ta Tantalum	74 W Tungsten	75 Re Rhenium	76 Os Osmium	77 Ir Iridium	78 Pt Platinum	79 Au Gold	80 Hg Mercury	81 Th Thallium	82 Pb Lead	83 Bi Bismuth	84 Po Polonium	85 At Astatine	86 Rn Radon
7	87 Fr Francium	88 Ra Radium	89-103 Actinoid															

Lanthanoid	57 La Lanthanum	58 Ce Cerium	59 Pr Praseodymium	60 Nd Neodymium	61 Prn Promethium	62 Sm Samarium	63 Eu Europium	64 Gd Gadolinium	65 Tb Terbium	66 Dy Dysfucosium	67 Ho Holmium	68 Er Erbium	69 Tm Thulium	70 Yb Interubium	71 Lu Lutetium

The rare metals, for example, are utilized to enhance quality of steel using them to manufacture high value added steel by adding them to steel, and the rare metals are compared to "vitamins for industry".

[16] Source: Ministry of Economy, Trade and Industry, "Strategy for Ensuring Stable Supplies of Rare Metals" (July 28, 2009)

Recently, the rare metals are used for manufacturing semiconductor, battery material, superconductor, catalyst, optical instrument material and fine ceramics. Especially, IT introduced products increase the amount of the rare metals used.

Demand and consumption of the rare metals are increasing not only in the advanced economies but also in emerging economies including China and India, and the production is also increasing to respond to this situation. As increase of middle and long term demand can be expected and the production is concentrated to and eccentrically located in some countries, rising resource nationalism and export restriction may significantly affect production of the high value added/ high functional products.

In fact, the export restriction of the rare earth conducted by China since 2010 has drawn increasing attention. Ministry of Commerce People's Republic of China had implemented the rare earth export authorization ceiling system since 1998, and the export ceiling was tightened after 2005 (Column, Table 1-3). Particularly, in 2010, addition to drastic 40% decrease of the export ceiling compared with the previous year and, actually export ceiling was tightened by increasing number of export restricted rare earth in 2011. Also, government of China raised resource tax of rare earth and strengthened implementation of control measures at the stage of mining. Responding these situations, export prices of rare earth was hiked after the drastic tightening of export ceiling in 2010. According to the United State Geological Survey, China's rare earth production was 130,000 tons (estimation) at the end of 2010, and this account for approximately 97% of the world production (Column, Table 1-4). What kind of policy is adopted by the Government of China is carefully watched not only by Japan but also by the world.

Column Table 1-3 Transition of China's authorized export limit and export performance of rare earth

(Unit: ton, %)

	Authorized export limit (EL)		Export performance		Export performance – Authorized export limit
		Growth rate to the previous year		Growth rate to the previous year	
2004	65,609	-	69,703	-	4,094
2005	65,609	0.0	65,198	▲6.5	▲411
2006	61,821	▲5.8	66,409	1.9	4,588
2007	59,994	▲3.0	54,367	▲18.1	▲5,627
2008	47,449	▲20.9	54,963	1.1	7,514
2009	50,145	5.7	43,918	▲20.1	▲6,227
2010	30,258	▲39.7	39,813	▲9.3	9,555

Sources: JETRO "Trade Report" (February 25 2011)

Original sources: China Ministry of Commerce; General Administration of Customs (Customs Office) and others

Column Table 1-4 Major production countries of rare metal (2010)

(Unit: %)

	The first		The second		The third		Share of top 3 countries
	Countries	Share	Countries	Share	Countries	Share	
Rare earth	China	97.3	India	2.0	Brazil	0.4	99.7
Vanadium	China	41.1	South Africa	32.1	Russia	25.0	98.2
Tungsten	China	85.2	Russia	4.1	Bolivia	1.8	91.1
Platinum	South Africa	75.4	Russia	13.1	Zimbabwe	4.8	93.3
Indium	China	52.3	Korea	13.9	Japan	12.2	78.4
Molybdenum	China	40.2	USA	23.9	Chile	16.7	80.8
Cobalt	Democratic Republic of Cong	51.1	Zambia	12.5	China	7.0	70.7
Manganese	China	21.5	Australia	18.5	South Africa	16.9	56.9
Nickel	Russia	17.1	Indonesia	15.0	Philippine	10.1	42.1
Copper	Chile	34.1	Peru	7.9	China	7.1	49.1
Zinc	China	29.2	Peru	12.7	Australia	12.1	53.9
Lead	China	42.7	Australia	15.1	USA	9.8	67.6

Notes: Estimated value; Indium is bare metal basis.
Sources USGS, "Mineral Commodity Summaries 2011"

Meanwhile, Japan raises 4 pillars such as securing overseas resources, recycling, development of alternative materials and stockpiling in the "Strategy for Ensuring Stable Supplies of Rare Metals" and deploys strategy to ensure obtaining the rare metals. It is considered that diplomatic efforts on natural resources and joint efforts of the public and private sectors will become increasingly important in future.

2. The expansion of the financial crisis in Europe

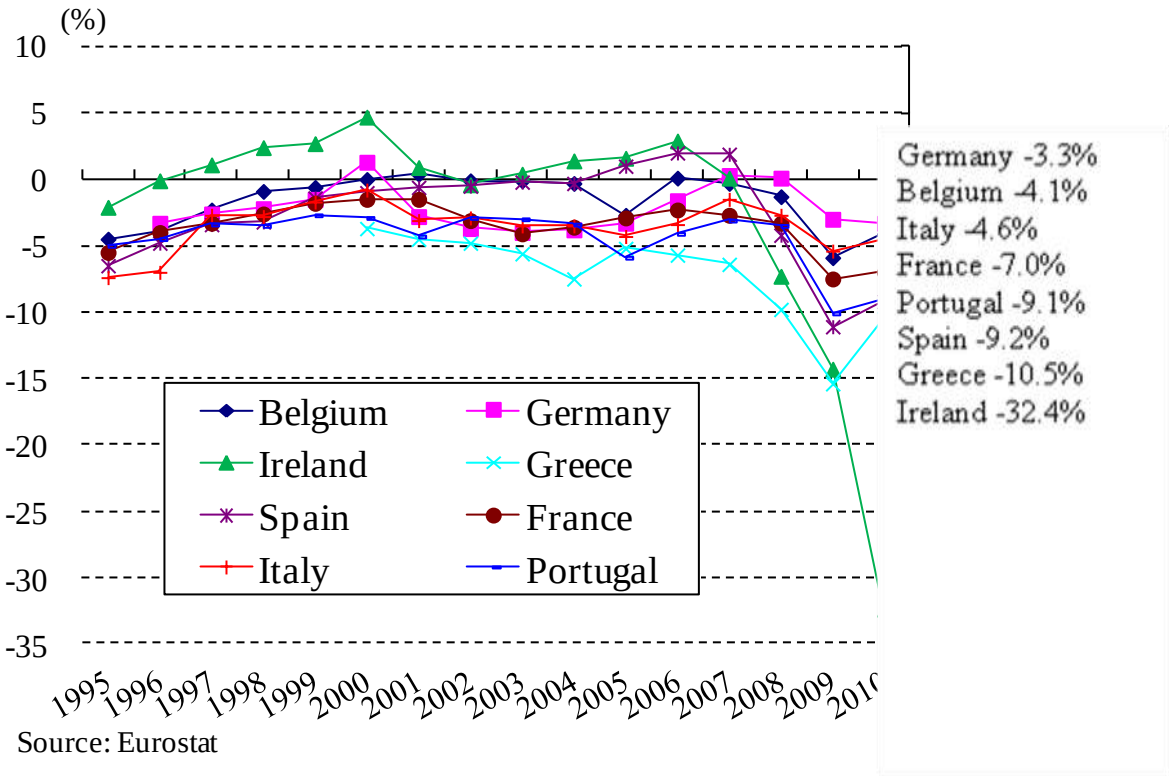
(1) The development of the financial crisis in Europe

(A) The financial concern on Europe continues

Europe has continued to be shaken by financial problems in countries of the euro zone[17] since autumn of 2009. Following Greece, which requested financial support to EU/IMF in May 2010 and Ireland in November, Portugal also requested the support in April 2011. There is concern that countries with relatively weak competitiveness and severe financial conditions in the euro zone may be unable to achieve autonomous financial reconstruction (Figure 1-2-2-1, 1-2-2-2 and Table 1-2-2-3).

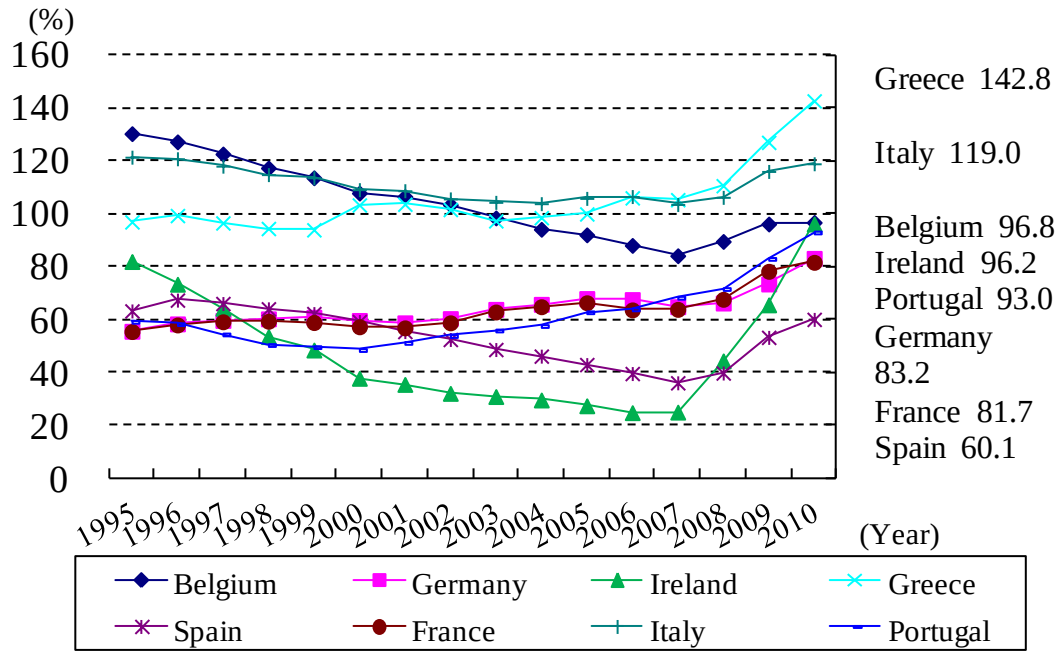
[17] In this Section, "euro zone" refers to 17 nations, which introduced euro as of January 2011 among EU member nations (Belgium, Germany, Greece, Spain, France, Ireland, Italy, Cyprus, Luxemburg, Malta, the Netherlands, Austria, Portugal, Slovenia, Finland, Slovakia and Estonia).

Figure 1-2-2-1 Fiscal balance of countries in Euro zone (ration to GDP)



Source: Eurostat

Figure 1-2-2-2 Government debt outstanding of countries in Euro zone



Source: Eurostat

Table 1-2-2-3 Details of European financial crisis (as of May 2011)

October 2009	• Falsification of statistics by the former administration of Greece came to the surface: Estimation of ratio of financial deficit to GDP in 2009 was corrected from 3.7% to approximately 12.7%.
December	• Greece announced the economic reformation plan * It was declared that ratio of the financial deficit to GDP in 2010 would be held down to 8.7% and less than 3% in 2013.
January 2010	• Greece submitted the stable growth plan to EU.
April	• Euro group (Euro zone finance ministers meeting) agreed to the conditions of the 3 years joint plan on supporting Greece which had been discussed with IMF. • Greece corrected the statistics again: The ratio of financial deficit to GDP in 2009 was corrected from 12.7% to 13.6%. • Greece officially required EU to exercise the supporting program.
May	• Euro group announced loans of 110 billion euro in 3 years (80 billion euro from Euro zone member countries and 30 billion euro from IMF). * IMF Executive Board decided to support Greece with a total of 30 billion euro in 3 years. • European Central Bank (ECB) announced to ease the eligibility criteria of collateral for bonds issued or guaranteed by Greek government. • EU announced to establish European Financial Stabilization Mechanism (EFSM) with a total of 500 billion euro. • Greece, Spain, Portugal and Italy announced their financial austere measures.
June	• Germany and United Kingdom announced their financial austere measures.
July	• Committee of European Banking Supervisors (CEBS) published results of the stress test. * Seven banks, mainly small and medium scale banks, out of 91 subjected banks were unqualified (5 banks in Spain, a bank in Germany and a bank in Greece).
August	• Greece cleared the monitoring by EU and IMF and the second loan was decided to implement.
September	• Ireland announced processing policy for pending problem of Anglo Ireland Bank. • Ireland announced additional remedy costs for Anglo Ireland Bank and other financial institutions.
October	• German France Summit meeting: It was agreed to strengthen financial restriction and to establish a permanent crisis responding mechanism for the risk management. * The crisis responding mechanism included participation of private creditors in an appropriate manner. • European Executive Board agreed to establish a new crisis responding mechanism. ＊It mentioned roles of private investors to be included in the new framework. ＊A part of the Treaty o Lisbon was revised for the new framework. • In France, nationwide strikes and demonstration occurred to protest a pension reform plan to reduce the medium and long term financial deficit.
November	• Ireland officially required EU and IMF to provide financial support. • EU Financial Ministers Board decided to support Ireland. * A total of 85 billion euro support (17.5 billion euro would be provided from Ireland pension funds) * Details of external assistances were 17.7 billion euro from EFSF, 22.5 billion euro from EFSM, 4.8 billion euro from United Kingdom, Denmark and Sweden and 22.5 billion euro from IMF. • Joint communique of five major EU countries * The future crisis responding mechanism is not applied to the current debts. * Private creditors are included in the supplementing of collective action clause (CAC) to newly issued national bonds.

	• Statement of Euro Group: Participation of private creditors to the future permanent crisis responding mechanism (European Stabilization Mechanism (ESM)) will be considered in case by case basis. • Greece further corrected the statistics: Ration of financial deficit to GDP in 2009 was corrected from 13.6% to 15.4%.
December	• EU Executive Board agreed to contents of Euro Group Statement and announced that the details would be decided in March 2011.
March 2011	• European Executive Board agreed to the details of ESM. * ESM's financeable amount was decided as 500 billion euro. * A total of 700 billion euro was capitalized to obtain high credit rating for ESM. • European Executive Board agreed to "Euro Plus Agreement" to strengthen the coordination of economic policies of Euro zone countries.
April	• Portugal formally required EU and IMF to provide financial support.
May	• EU and IMF agreed to provide 78 billion euro assistance to Portugal. * EU provided 52 billion euro loan and IMF provided 26 billion euro loan through the Extended Fund Facility (EFF) to Portugal.

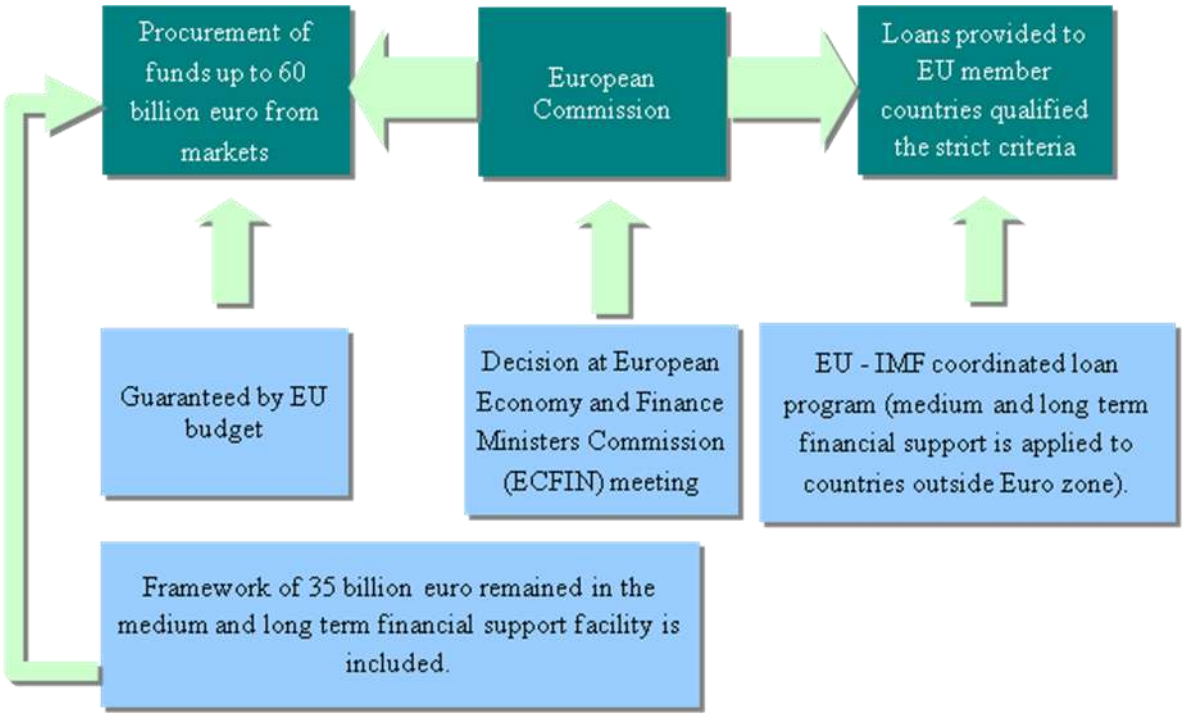
Sources: Data announced by EU and others

One of the factors that caused the financial crisis in countries of the euro zone is considered to be structural problem of the euro zone itself, which will be discussed later. In addition, another problem is to conduct appropriate economic policy such as promotion of delayed structural reform and loose financial control in the countries concerned. In the situation where loss of confidence in euro is implied, EU has been taking every measure to control the problem.

For example, when remedy for Greece was announced in May 2010, at the same time, a total of 500 billion euro[18] as immediate reserve was announced as the comprehensive support measure for the crisis. The details were establishment of “Europe Financial Stability Mechanism (EFSM)” with maximum 60 billion euro to which all member countries of EU were subjected and “Europe Financial Stability Facility (EFSF), which was to establish a special purpose vehicle (SPV) financed by countries in the euro zone, with input amount proportional to financing rate to the Europe Central Bank for the SPV (Figures 1-2-2-4 and 1-2-2-5).

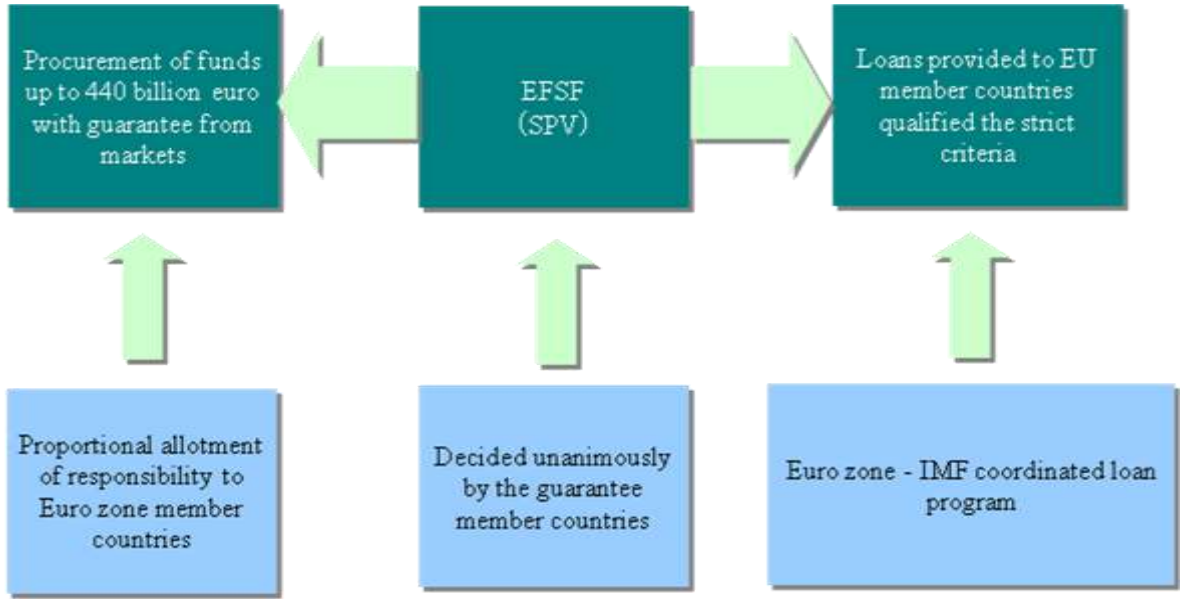
[18] Actually, it announced a supporting measure with a total amount of 750 billion euro, expecting 250 billion euro financing from IMF, which accounted for 50% of the EU financing.

Figure 1-2-2-4 Structure of European Financial Stability Mechanism (EFSM)



Sources: ECB "Financial Stability Review, December 2010"

Figure 1-2-2-5 Structure of European Financial Stability Facility (EFSF)



Sources: ECB "Financial Stability Review, December 2010"

However, this is only a temporary countermeasure and EFSF, which takes charge of 440 billion euro out of the total 500 billion euro, has been established as an organization that will be terminated in June 2013 or at the end of supporting period of each supported country. It is scheduled to establish European Stability Mechanism (ESM) as a permanent organization to take over the role of EFSF and start operation in July 2013 (refer to (2) of this Section).

(B) Particularity of the financial crisis in the euro zone

Unification of Europe is a process of "deepening" and "expansion". EU created a single market and promoted introduction of a common currency for "deepening" the unification, and at the same time, it “expanded” in five phases and presently the member of member countries are 27. And the number of countries that participated in the euro zone reached 17 after the participation of Estonia on January 1, 2011. This formed an economic zone and a currency zone, and when combined, the EU becomes larger than the United States of America.

EU promoted economic growth by activating trade and the investment in the euro zone as a whole and by reducing costs for goods and services by promoting the market unification concept, until now. In addition, as t exchange rate fluctuation risk and exchange dealings fee in the area were removed by introduction of euro as the common currency, it had effects on promoting further trade and investment in the euro zone and reconstruction of the monetary and capital markets was promoted. Finance and capital markets equal to the United States markets were formed, and global financial institutions with strong competitiveness appeared, and the euro established a position as an international currency.

In this way, while the deepening of the unification in Europe brought significant results, the structural problem of the euro zone that was pointed out for some time was considered to contribute to this financial crisis.

As the countries participating in the euro zone entrust their exchange and monetary policies to European Central Bank (ECB), there is institutional problem that each country cannot conduct its own exchange adjustment. Therefore, ECB must take greatest common divisor-like policy considering the balance between participating nations. Risk to destabilize the economy is ever present when large economic gaps appear between the countries.

To avoid such risk destabilizing economy, when countries introduce common currency, based on the Maastricht Treaty, it becomes the condition to satisfy the standard consisting of the following 4 items:

(i) Price stability: The inflation rate of the country concerned is not far from the mean of 3 countries having the lowest inflation rate among the member countries which is more than 1.5% point;

(ii) Adequate interest rate level: The long-term national bond yield rate of the country concerned is in the range of within 2% point from the mean of 3 countries having the lowest inflation rate among the member countries;

(iii) Stability of the exchange rate: The country concerned maintains the exchange rate in a normal range in European Monetary System (EMS) and did not devaluate the currency for most of the time during the recent period of 2 years; and,

(iv) Balanced budget: The ratio for the nominal GDP of the financial minus balance is not higher than 3% a year, and the ratio for the nominal GDP of the government debt balance is less than 60%.

Conditions from (i) to (iii) of commodity price, interest rate and exchange rate are set because if these do not met the standard, the unified monetary policy does not function appropriately. And condition (iv) on fiscal discipline is added because there is a concern about burden on monetary policy cased by large fluctuation of exchange rates. If a country performs loose economy within the area, pressure to raise the long-term interest rate becomes stronger and confidence in euro from markets

may be lost. It is the condition about the fiscal discipline of (iv) that participating countries achieved it through hardships during those days when the euro zone was started. As for the financial deficit ratios to GDPs in 1997, which were used to decide the introduction of euro, these are drastically improved compared with the previous year. It could be inferred that these countries made effort to reduce their financial deficits by using various measures (Figure 1-2-2-1, shown above). Specifically, generally adopted means were reduction of expenditure associated the social security and the public employees wage and freeze of the public works projects. The extreme examples are a case of selling gold that the central bank owned as foreign reserve (Belgium) and a case of increased taxation called European tax that was imposed only one time (Italy).

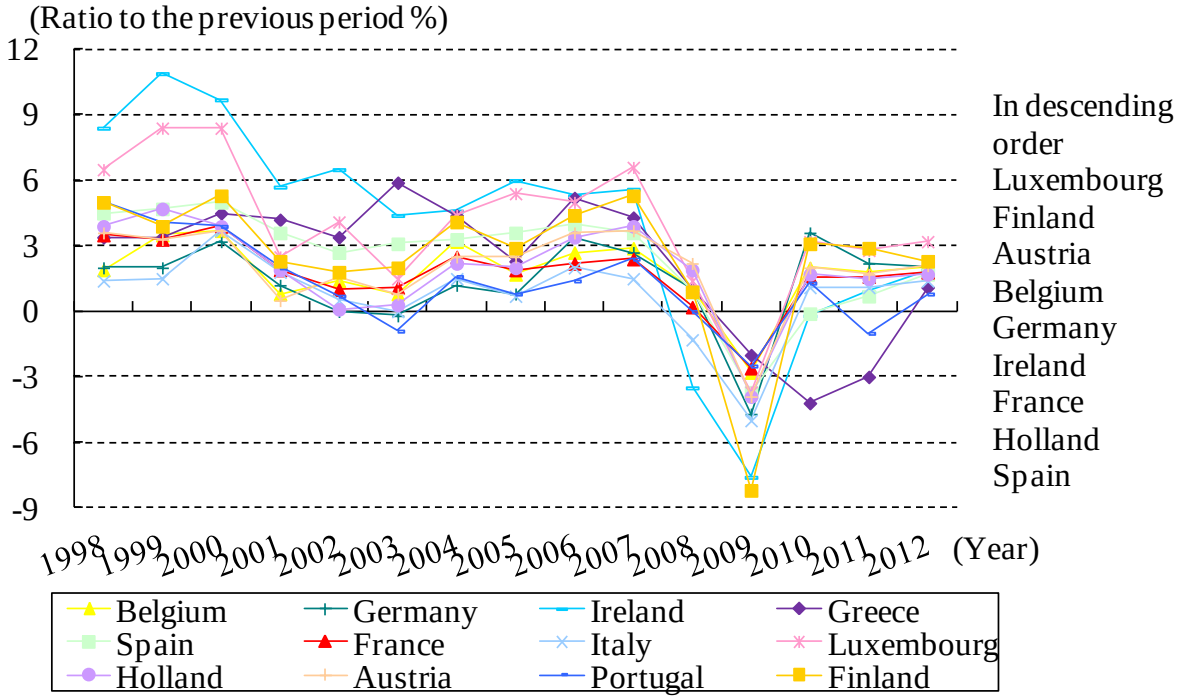
Additionally, the condition included in (iv), "the ratio for the nominal GDP of the government debt balance is less than 60%" was interpreted flexibly based on the provision of Maastricht Treaty, "when it has a tendency to decrease markedly, (the country) may participate in the currency unification" and countries exceeding their government debt balance over 60% of the GDP were accepted to participate the euro zone[19]. It is thought that the participating countries did not necessarily satisfy sufficiently the standard to enhance confidence in euro in the truest sense from the time the euro zone started.

And the euro zone also has structural economic problems. Namely, the essential conditions to establish the optimum currency area are the structural economic homogeneity and free movement of capital and labor according to the theory of "optimum currency area[20]" which is said to be the theoretical background of the euro zone. However, the move of the labor is rigid within the euro zone and there is a great divergence in the economic structures of the Euro zone countries (Figures 1-2-2-6 and 1-2-2-7).

[19] Member countries at the time of starting the euro zone in 1999 were 11 countries including Austria, Belgium, Finland, France, Germany, Ireland, Italy, Luxembourg, the Netherlands, Portugal and Spain. Greece participated in 2001.

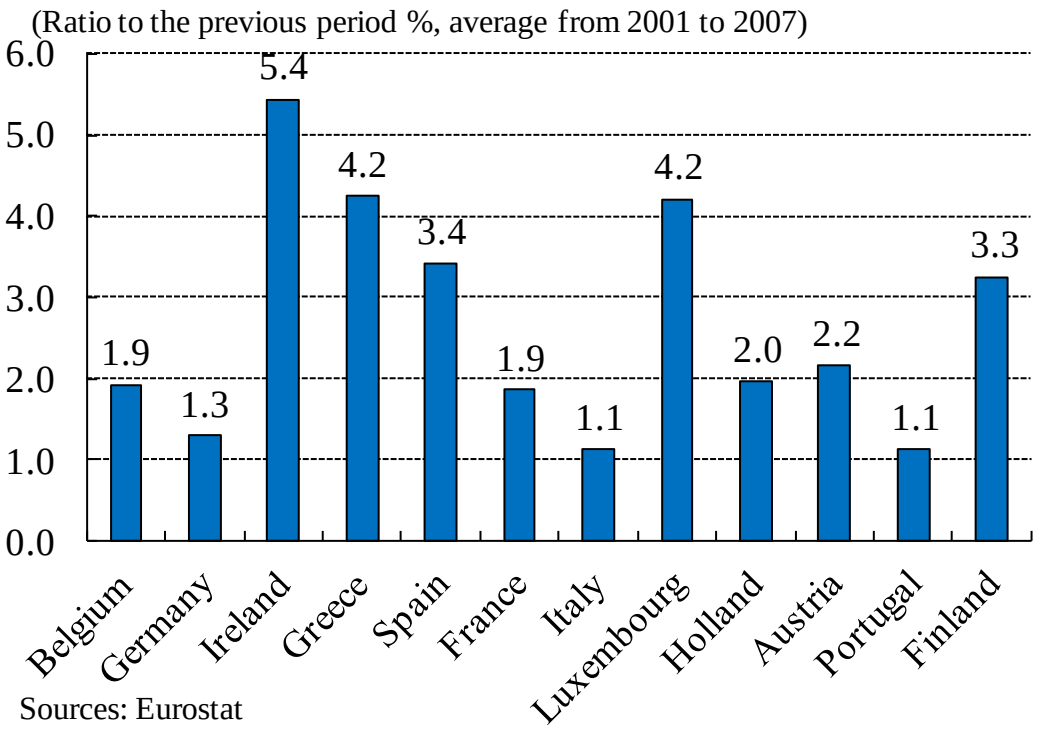
[20] The "optimum currency area" theory assumes that "it is desirable for the countries in close economic relationship have common currency to avoid the influence by fluctuation of exchange rate". It states that when some countries make a group under a common currency system or strict currency peg and each member country releases control of own exchange adjustment function, what a alternative means can cover the said function or what a geographic size is the most appropriate for the system is not clearly defined. The essential conditions for the "optimum currency area" are to be economic openness (degree of unification of goods markets), mobility of production factors and homogeneity of economic structure.

Figure 1-2-2-6 Transition of real GDP growth rates of countries in Euro zone



Notes: All values of 2011 through 2012 are predicted. Values of Belgium, Ireland, Greece, France, Italy, Luxembourg, Austria and Portugal in 2010 are also predicted. Data of Greece are tentative.
Sources: Eurostat

Figure 1-2-2-7 Comparison of real GDP growth rates of countries in the euro zone (average from 2001 through 2007[21])

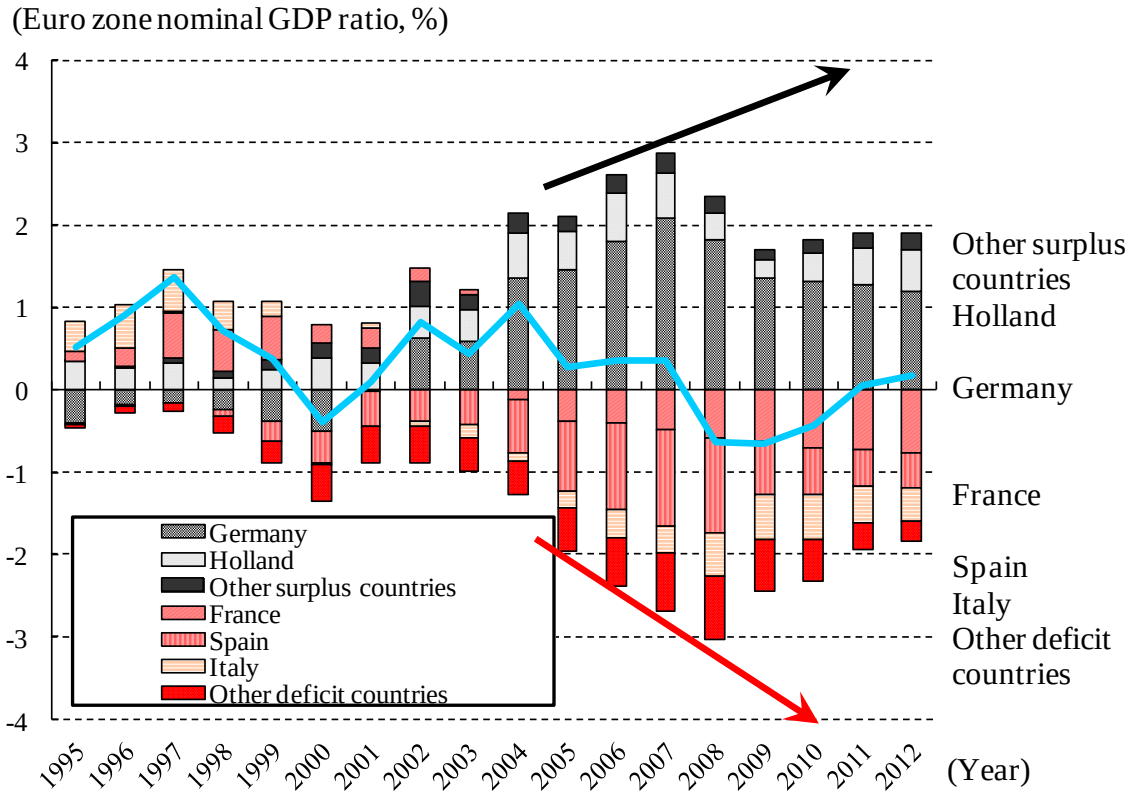


Sources: Eurostat

In this situation, after the introduction of euro, while current-account surplus increased in such countries having higher export competitiveness as Germany in the euro zone, current-account deficit tended to increase continuously in the Southern European countries having lower export competitiveness (Figure 1-2-2-8). Generally, countries having lower export competitiveness and current-account deficits restore the balance of the current account by devaluating currencies, but as mentioned above, the euro zone participating countries do not make adjustment of their exchange rates in accordance with the situation of their own countries. In the Situation that the export competitiveness cannot be improved by the lower currency value, it is necessary to reform the economic structure to achieve balancing the current-account and to increase export by strengthening the industrial competitiveness. But generally, it takes time for such actions to achieve the results. When a country faces economic confusion under such a situation, it must be coped with a fiscal policy or has to depend on external debts. This results in a risk to make economy and financial status destabilize further.

[21] The comparison is done with the average until 2007 to avoid the influence from the monetary and economic crisis after 2008.

Figure 1-2-2-8 Transition of current account of countries in Euro zone



Notes: Other surplus countries are Belgium, Luxembourg, Austria and Finland. Other deficit countries are Ireland, Greece and Portugal. Euro zone countries are 12 countries excluding Cyprus, Malta, Slovenia, Slovakia and Estonia. Values in 2010 and later are predicted.

In this way, the surfacing of manipulation of the statistics and the loose financial administration in Greece of 2009, which caused the beginning of the financial crisis in Europe highlighted the problems that the euro zone contained in itself. And this concern was circulated among the countries where competitiveness and foreign solvency were considered to be relatively low. Then the situation grew worse to destabilize the monetary systems in the whole euro zone.

(2) Concern continues smoldering in the markets and the permanent crisis response mechanism

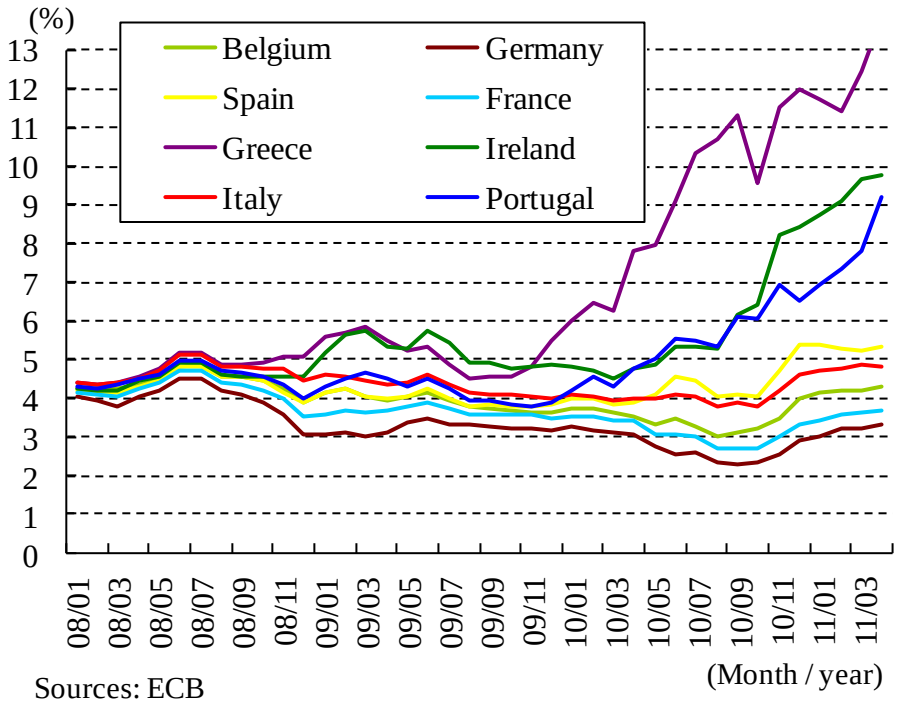
Following Greece, Ireland requested support of EU/ IMF in November, 2010, and the implementation of the support was decided. Also Portugal requested the support in April 2011 and EU/ IMF and Portugal agreed to the support at the working level in May. There is still concern for spreading crisis to Spain and other countries. Behind such a "concern of the markets", there is an uneasiness that after having used the announced aid package, it cannot achieve the financial reforms and there may be another kind of debt restructuring.

This uneasiness on the debt restructuring was actualized after October 2010 by word from EU authority in the German and French summit meeting, mentioning the possibility of the debt restructuring. It is said that mention of the debt restructuring might have remotely contributed to the

request for support from Ireland[22].

At the German and French summit meeting in October 2010, the agreement on a permanent crisis response mechanism, which was to take over the role of EFSF, mentioned, “private creditors were appropriately represented”. While the specific content of the “appropriate participation/representation” was not clear, uneasiness was spreading by the fear that national bond holders might be asked to share some costs, and this might cause sudden rise in rates of yield of national bonds in various countries (Figure 1-2-2-9).

Figure 1-2-2-9 Transition of rate of return of 10 years term national bonds in countries in Euro zone



Sources: ECB

Responding to such situations, in October, 2010, European Council agreed to newly establish "European Stabilization Mechanism (ESM)" as a permanent crisis response mechanism. After examination by the euro group meeting afterwards, European Council agreed on details of ESM in March, 2011. Specific details were the financeable amount by ESM was 500 billion euro and a total of 700 billion euro was input as supportive capital to obtain the highest credit rating for ESM. It was decided that the financeable amount would be revised regularly at least every 5 years, and as to the 700 billion euro capital, 80 billion euro would be capital paid-in from countries within the euro zone, and the 620 billon euro would be payable on application capital and government guarantee from countries within the euro zone. Furthermore, it was agreed that in the case of debt restructuring,

[22] The government of Ireland stated that immediate necessary funds were ensured and denied the request for the external monetary support even after the correction of prospect of large financial deficit. However, with upset in the markets, there were words to persuade Ireland to request early external support, coming from EU and ECB which had concern about further spreading the crisis to South European countries and from United States of America which had large credit to Ireland. It is said that by this situation, Ireland formally submitted the request for the monetary support in November 2010.

private creditors should be demanded to share suitable costs on a case-by-case basis and the Collective Action Clauses (CACs[23]) would be added to all the government bonds with more than 1 year term of redemption newly issued by euro member countries after July, 2013.

In addition, in the same European Council, the "Euro plus pact" was agreed to strengthen coordination of the economic policies of countries in the euro zone. The purpose of the pact was intending to strengthen the fiscal discipline, structural reform and competitiveness under mutual surveillance. It was called Euro "plus" pact, as some countries[24] outside the euro zone declared their participation.

As for measures against the current debt uneasiness, the EFSF financeable amount was agreed to be raised up to 440 billion euro, but the details were to be agreed upon before the European Council meeting held in June 2011.

ESM in succession to current ESFS was determined to be established after 2013 by such a series of actions. Also an argument on a concept to utilize European common bonds (E bond) became popular during the discussion on the permanent crisis response measures, which had been argued upon for a long time. As there was some criticism that the method of unifying the finances has not been developed while the monetary and exchange policy are unified by ECB, and if financial coordination is dependent upon introduction of "E bond", the concern among the market players may not fade away[25]. The EU and countries shaken by the debt uneasiness are attracting attention concerning the fact that people are not so sure how they will respond to a similar situation in the future including the fact that the implementation of a part of the measures for current debt uneasiness has been postponed.

[23] This is a system that can change the term of redemption or the interest rate by the decision by majority of investors holding bond certificates. The representatives of national bondholders maintain mutual understanding with the debtor and it makes the prompt debt restructuring possible. (Nippon Keizai Shimbun, third page of evening edition, November 29, 2010)

[24] Those are 6 countries including Bulgaria, Denmark, Latvia, Lithuania, Poland and Romania.

[25] Contrarily, for the introduction of the "E bond", it is necessary to legally confirm guarantee and responsibility of the governments and develop a framework to strictly maintain the fiscal discipline. If there are no such actions, moral hazard or speculation may emerge. Therefore, careful institutional designs are indispensable.