Section 2 Various issues exposed by the global financial crisis and responses by countries and regions

## 1. U.S. economy facing balance sheet adjustments

#### (1) U.S. economy in sharp recession

The United States is an economic superpower that accounts for about a quarter of global GDP.<sup>1</sup> The U.S. population, totaling some 308.8 million, accounts for about 4.6% of the global population. Unlike other countries' populations, it is continuing to grow because of the inflow of immigrants, underpinning the economy.<sup>2</sup>

Amid the rapid advance of economic globalization, the United States has built an economic structure led by strong domestic demand. An expansion of personal consumption, which accounts for about 70% of U.S. GDP, and an increase in the U.S. current account deficit have acted as the driving force behind global economic growth. However, this situation is about to change significantly as a result of the current financial crisis that was triggered by the collapse of the housing bubble.

Below, we will first provide an overview of the current state of the U.S. economy, the epicenter of the financial crisis, as well as changes in housing prices by state and region and their effects. Next, we will examine the effects of the current financial crisis on U.S. personal consumption by analyzing the balance sheets of the household sector. Lastly, we will describe measures announced by the U.S. government and the Federal Reserve Board (FRB) to deal with the difficult economic condition.

### (A) Real GDP contracts sharply

The U.S. economy enjoyed long-term growth between the fourth quarter of 2001 and the fourth quarter of 2007, posting an average real GDP growth rate of 2.7% over this period. The breakdown of the contributions to real GDP growth by demand component shows that personal consumption made the greatest contribution throughout this period (see Figure 1-2-1-1). Behind the increase in U.S. personal consumption was a long-term expansion of the U.S. housing market, which we mentioned in Section 1. As a result of a continued increase in imports due to the growth in personal consumption, the U.S. current account deficit swelled between 2002 and 2006, with the deficit in 2006 exceeding 6% of nominal GDP (see Figure 1-2-1-2).

However, the situation changed in 2006 as housing prices started to decline. First, housing investment, which had until then continued to grow steadily, turned down, and then personal consumption began to slow down in the fourth quarter of 2007 as the subprime mortgage problem surfaced. Consequently, real GDP growth slowed down considerably, and the U.S. economy entered recession in December 2007 for the first time since March 2001.<sup>3</sup> In the third quarter of 2008, when the financial crisis broke out, personal consumption turned down and the impact of the crisis on the real economy took the form of a sharp

<sup>&</sup>lt;sup>1</sup> In 2008, U.S. GDP is estimated to have accounted for approximately 23.5% of nominal global GDP.

<sup>&</sup>lt;sup>2</sup> Population estimates made by the United Nations as of July 1, 2008.

<sup>&</sup>lt;sup>3</sup> On December 1, 2008, the National Bureau of Economic Research announced that the U.S. economy slipped into recession after peaking in December 2007. In May 2009, the recession entered its 17th month, making it all but certain that it would become the longest recession since the end of World War II.

contraction of real GDP. Although personal consumption rebounded in the first quarter of 2009, real GDP posted negative growth of 5.7% (revised figure), marking the third consecutive quarter of negative growth, because capital investment and housing investments registered a steeper drop than in the previous quarter.



Figure 1-2-1-1 Changes in real GDP growth by demand component

Notes: Seasonally adjusted. Quarter-on-quarter annualized rate. Figures for the first quarter of 2009 are revised data. Source: U.S. Department of Commerce.



Figure 1-2-1-2 Changes in the current account balance (nominal GDP)

#### (B) Personal consumption

The financial crisis caused by the collapse of the housing bubble has had a serious impact on personal consumption, which accounts for some 70% of U.S. GDP. A breakdown of personal consumption shows

that the purchase of automobiles started to drop in the third quarter of 2007 and purchases of consumer durable goods other than automobiles and non-durable consumer goods have declined significantly since the third quarter of 2008 (see Figure 1-2-1-3).

The U.S. household sector, which continued to increase consumption based on borrowings that depended on a rise in housing prices, became no longer able to maintain the previous high level of consumption as a result of an unprecedented plunge in housing prices (see (3) "U.S. Economy Facing the Balance Sheet Adjustments of the Household Sector"). In addition, the tightening of the lending stance of financial institutions is presumably accelerating the decline in consumption spending by shrinking the flow of consumer credit and mortgage loans (see Figure 1-2-1-4). In the U.S. household sector, the balance of consumer credit turned down sharply in the fourth quarter of 2008,<sup>4</sup> indicating that the household sector is curbing consumption and stepping up debt adjustments as it faces a credit crunch (see Figure 1-2-1-5).

In the first quarter of 2009, personal consumption posted positive growth for the first time in three quarters, with purchases of consumer durable goods such as automobiles, which were particularly weak, rebounding steeply (see Figure 1-2-1-3). However, there was no change in the trend of the U.S. household sector curbing consumption, as growth in consumption by the U.S. household sector remained lower than growth in income on a year-on-year basis (see Figure 1-2-1-5).

As retail sales declined in March and April 2009, an increase in personal consumption in the first quarter of 2009 may have been a temporary blip (see Figure 1-2-1-6).





Notes: Seasonally adjusted, Quarter-on-quarter annualized rate. Figures for the first quarter of 2009 are revised data Source: U.S. Department of Commerce.

<sup>&</sup>lt;sup>4</sup> According to the FRB, the balance of consumer credit stood at an annualized \$2.5962 trillion after seasonal adjustments in the fourth quarter of 2008, down 3.2% from the previous quarter.

Figure 1-2-1-4 Changes in financial institutions' willingness to lend (housing loans and consumer credit)



Percentage of the number of banks that tightened their credit standards minus the number of banks that eased their credit standards (Quarter, after the previous survey, to the total.
 Year)
 Figures for residential mortgage loans in the first quarter of 2007 and before include all levels of creditworthiness. Figures for the

second quarter of 2007 and thereafter are segmented by level of creditworthiness. Source: FRB.

Figure 1-2-1-5 Changes in real personal consumption, real disposable income, and savings rate





**Figure 1-2-1-6 Changes in retail sales** 

## Column 2 Sales structure of the U.S. auto industry

## (Status of U.S. auto sales)

Sales of small vehicles (passenger cars and light trucks) in the United States declined sharply in 2008, to 13.2 million units from the previous year's 16.09 million units.<sup>5</sup> In addition to a surge in gasoline prices that continued until the summer of 2008, a slump in personal consumption caused by the financial crisis and the tightening of loan screening criteria in the autumn sharply reduced automobile sales, and the sales decline has continued into 2009. On an annualized basis, monthly sales (after seasonal adjustments) fell short of 10 million units in each of January (9.54 million units), February (9.10 million units) and March (9.84 million units), representing an unprecedented sales slump (see Figure 2-1 of this column).

Sales of small vehicles in the United States continued to grow strongly between 1991 and 2001, and annual sales stayed at high levels above 16 million units between 1999 and 2007. Although the 16 million mark had been topped once, in 1986, this was the first time that such a high level of sales continued for so long, so we may say that it was a period of historic high sales. If we look at sales of small vehicles in relation to the trend in real GDP, we may presume that demand stayed at high levels between 1999 and 2005. Active sales promotion of light trucks with a wide profit margin by automakers is regarded as a major factor behind the strong demand (see Figure 2-2 of this column).

<sup>&</sup>lt;sup>5</sup> Statistics from the U.S. Department of Commerce



## (Legacy costs)

U.S. automakers have struggled under the heavy burden of "legacy costs," which refers to costs that they have to bear regardless of the level of automobile sales, including medical fee payments and pension payments to retirees, because of the presence of the U.S. auto industry labor unions that wield a strong influence. For example, the ratio of pension liabilities to overall debts stands at 3.2% at Toyota Motor

Corporation<sup>6</sup> and 14.3% at GM.<sup>7</sup>

Between 1999 and 2005, U.S. automakers were able to absorb the legacy costs, as the low interest rates in the first half of 2000 (see Figure 2-3 of this column) led to strong sales of light trucks with a wide profit margin. However, as consumers shifted to fuel efficient cars following a surge in crude oil prices since 2004, sales of light trucks turned down. Moreover, the legacy cost problem has been thrown into sharp relief because of factors that have emerged since the autumn of 2008, including a credit crunch in the U.S. auto loan market and a rise in auto loan interest rates, as well as the cancellation of auto leasing contracts and the scaling-back of the leasing business by financial institutions.<sup>8</sup>

#### Column Figure 2-3 Changes in the interest rates of auto loan lenders (new cars)



#### (C) Housing market

The U.S. housing market is still in a slump, with housing investments continuing to drop sharply (see Figure 1-2-1-1). The number of housing starts declined some 80% compared with the peak that was reached in January 2006, hitting the lowest level since record-keeping started in 1959 (see Figure 1-2-1-7), according to the most recent data. Housing sales also remain weak, with the inventory-to-sales ratio<sup>9</sup> staying at a high level (see Figure 1-2-1-8). In the meantime, the delinquency rate for mortgage loans (the percentage of loans in arrears for 30 days or longer) rose to the highest level since record-keeping started

<sup>&</sup>lt;sup>6</sup> Toyota Motor Corporation website, SEC Filings (Year ended March 31, 2008)

<sup>&</sup>lt;sup>7</sup> General Motors Corporation website, Annual Report 10-K (period: December 31, 2008)

<sup>&</sup>lt;sup>8</sup> General Motors filed for court protection under Chapter 11 of the U.S. federal bankruptcy act on June 1, 2009.

<sup>&</sup>lt;sup>9</sup> The inventory-to-sales ratio indicates how many months it takes to clear out the existing inventories at the current pace of monthly housing sales on the assumption of no additional housing supply. The National Association of Realtors regards an inventory-to-sales ratio of 4 to 5 months as standard.

in 1972. The ratio of loans provided for houses undergoing foreclosure procedures also posted a new record high, leading to the creation of additional inventories (see Figure 1-2-1-9). In this situation, there is no sign of an end to the drop in housing prices (as of May 24, 2009).

For the financial sector and the entire economy to recover in earnest, it is essential that supply-demand fundamentals be normalized. In order to encourage a drop in mortgage interest rates<sup>10</sup> and arrest the deterioration of the housing market, the FRB started the purchase of MBS (mortgage-backed securities)<sup>11</sup> in January 2009. In addition, the Obama administration has announced and is quickly implementing a large-scale package of measures to support the housing market (see (4) "U.S. Response to Economic and Financial Problems").

However, given that the inventory-to-sales ratio remains high, that the number of foreclosures<sup>12</sup> is rising rapidly and that the number of vacant houses for sale as of the end of 2008 was more than double the annual increase in the number of households, it is expected to take a long time before supply-demand fundamentals are normalized (see Figure 1-2-1-10).

<sup>&</sup>lt;sup>10</sup> "OP-ED ON MORTGAGE RATES AND HOUSE PRICES" by R. Glenn Hubbard and Christopher J. Mayer (2008) predicted that a mortgage interest rate of 4.5% would arrest the drop in housing prices by creating additional demand for 2.4 million houses even if a future rise in the unemployment rate is taken into consideration. It also predicted that a mortgage interest rate of 4.5% would have significant positive effects on households consumption by encouraging mortgage loan refinancing and bringing about an average monthly saving of 428 dollars per borrower as a result of refinancing.

<sup>&</sup>lt;sup>11</sup> On November 25, 2008, the FRB announced that it would purchase up to \$500 billion worth of MBS guaranteed by Fannie Mae (Federal National Mortgage Association) and Freddie Mac (Federal Home Loan Mortgage Corp.) as part of the package of measures to support the housing market. In addition, it announced on March 18, 2009, that it would increase the limit on the purchase amount to \$1.25 trillion.

<sup>&</sup>lt;sup>12</sup> "Global Financial Stability Report October 2007" by the IMF (2007) estimated that while the number of fixed-interest-rate subprime mortgage loans refinanced with adjustable-interest-rate loans peaked in 2008, the number of interest rate resets for option adjustable-rate mortgage loans (whose interest rate is set at a level lower than the prevailing market interest rates during the initial period to keep the monthly repayment amount low but is reset at a significantly higher level after the initial period) will start to increase in 2010 and peak in 2011. Over this period, the delinquency rate could rise further and foreclosures could increase rapidly.



### Figure 1-2-1-7 Changes in new-home construction starts

Figure 1-2-1-8 Changes in sales of new homes and existing homes, and inventory-to-sales ratio



 Notes:
 30-year fixed rate mortgages (right axis)

 1. Seasonally adjusted and annualized.
 2. The inventory-to-sales ratio indicates how many months it takes to clear out the existing inventories at the current pace of monthly housing sales on the assumption of no additional housing supply. The National Association of Realtors regards an inventory-to-sales ratio of 4 to 5 months as standard.

 Source: U.S. Department of Commerce, National Association of Realtors.



Figure 1-2-1-9 Changes in home prices, mortgage loan delinquency rates, and mortgage foreclosure

Notes: Mortgage loan delinquency rate: Percentage of loans in arrears for 30 days or longer. Mortgage foreclosure rate: Ratio of loans provided for houses undergoing foreclosure procedures. Source: Standard & Poor's, Mortgage Bank Association. (Month, Year)

# Figure 1-2-1-10 Changes in the number of vacant houses for sale and growth in the number of households



## (D) Capital investment

Corporate earnings have deteriorated and corporate production activity has entered a phase of full-fledged correction due to a slump in domestic and external demand caused by the financial crisis (see Figure 1-2-1-11). The Industrial Production Index dropped sharply, mainly in the automobile sector, and

the capacity utilization rate declined to the lowest level since record-keeping started in 1967 (see Figure 1-2-1-12).

As a result of the combined effects of these factors and the tightening of loan screening criteria for small and medium-size enterprises, capital investment posted a double-digit drop in the fourth quarter of 2008 and registered the largest decline since record-keeping started in 1947 in the first quarter of 2009 (see Figures 1-2-1-1 and 1-2-1-13). A breakdown of capital investment shows that in the fourth quarter of 2008, investment in structures, including office building construction, which until then remained firm, turned down and the drop in machinery and software investment became much steeper (see Figure 1-2-1-14). In the first quarter of 2009, the drops in both machinery and software investment and investment in structures posted a steeper drop than in the previous quarter.



Figure 1-2-1-11 Changes in corporate earnings

Notes: Seasonally adjusted. Domestic earnings excluding the amount received from overseas. Figures after inventory valuation Source: U.S. Department of Commerce.



Figure 1-2-1-12 Changes in industrial production index and capacity utilization rate

Figure 1-2-1-13 Changes in financial institutions' willingness to lend (corporate lending)



Notes: Seasonally adjusted. Quarter-on-quarter annualized rate. Figures for the first quarter of 2009 are revised data. (Quarter Source: U.S. Department of Commerce.



Figure 1-2-1-14 Breakdown of capital investment (Percentage contribution to real GDP growth)

(E) Employment

The deterioration of the real economy caused by the financial and economic crisis has also had a serious impact on the employment situation (see Figure 1-2-1-15). The number of jobs lost since the recession started in December 2007 is larger than the number of jobs lost during past recessions (see Figure 1-2-1-16). The number of jobs lost since November 2008, when the impact of the financial crisis on the real economy started to appear, accounted for about 70% of the total jobs lost during the current recession, indicating that the impact of the deterioration of the real economy on employment is becoming increasingly serious.

A breakdown of job data by sector shows that since the Lehman shock of September 2008, the number of employed people has increased only in public and regulated sectors, including administrative services, public services, and education and health services, while the number is continuing to drop sharply in most other sectors (see Figure 1-2-1-17).



Figure 1-2-1-15 Changes in nonfarm employment and unemployment rate

Notes: Seasonally adjusted. Changes in employment are on a month-to-month basis. Unemployment rate is on a quarter-onquarter basis. Figures for March and April 2009 are preliminary data. (Month, Year) Source: U.S. Department of Labor.



Figure 1-2-1-16 Comparison with the employment trends during past recessions

Notes: Figures are index numbers, with a base value of 100 for the peaks of the past business cycles published by the National Bureau of Economic Research. Source: U.S. Department of Labor.

								· · · · · · · · · · · · · · · · · · ·
	2008				2009			
	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.
Nonfarm	-321	-380	-597	-681	-741	-681	-699	-539
Private	-300	-384	-601	-670	-749	-688	-693	-611
Government	-21	4	4	-11	8	7	-6	72
Goods-producing	-104	-184	-249	-282	-405	-295	-318	-270
Construction	-46	-65	-127	-98	-135	-113	-135	-110
Manufacturing	-65	-119	-121	-180	-262	-172	-167	-149
Motor vehicles and parts	-17	-10	-20	-28	-70	8	-13	-29
Service-providing	-217	-196	-348	-399	-336	-386	-381	-269
Retail trade	-56	-61	-91	-88	-46	-58	-64	-47
Utilities	1	2	1	1	5	1	0	-1
Financial activities	-26	-27	-45	-33	-56	-56	-43	-40
Professional and business services	-52	-63	-124	-132	-151	-176	-130	-122
Education and health services	7	24	63	36	39	19	10	15
Leisure and hospitality	-26	-33	-51	-40	-36	-32	-42	-44

Table 1-2-1-17 Changes in nonfarm employment by sector

(thousand neonle)

Notes: Seasonally adjusted. Figures for March and April are preliminary data. The goods-producing and service providing sectors include other businesses not listed in the table. Source: U.S. Department of Labor.

# (F) Trade

The U.S. trade deficit has shrunk rapidly because imports dropped more steeply than exports due to a slump in domestic demand caused by the financial and economic crisis (see Figure 1-2-1-18).

The value of imports of crude oil, which is the largest import item, nearly halved compared with a year before as a result of a sharp drop in crude oil prices as well as a decline in the import volume. The value of imports of automobiles and auto parts, which posted the second steepest drop after crude oil, also nearly halved (see Figure 1-2-1-19).

Meanwhile, exports of automobiles and auto parts, which constitute the greatest factor of the drop in U.S. exports, declined by nearly 60% compared with a year before. Exports of raw materials for industrial use, capital goods and consumer goods are also continuing to decline. In line with the shrinkage of the overall trade deficit, the trade deficits with all countries and regions (excluding services and before seasonal adjustments) are shrinking (see Figure 1-2-1-20).<sup>13</sup>

<sup>&</sup>lt;sup>13</sup> As for protectionist measures taken by individual countries, see Section 3, Chapter 2. The American Recovery and Reinvestment Act contains the so-called "Buy American" provision, requiring the use of steel products made in the United States for projects based on this act. This provision stipulates that it "shall be applied in a manner consistent with United States obligations under international agreements."



Figure 1-2-1-18 Changes in trade balance







Figure 1-2-1-20 Changes in trade balance by country and region

#### (2) Large differences in changes in housing prices between states and between regions

The U.S. subprime mortgage problem began to surface around the end of 2006, after the S&P/Case-Shiller Home Price Indices started to decline in August of the same year. Then, the global economy plunged into a deeper turmoil following the Paribas shock<sup>14</sup> of August 2007 and the Lehman shock of September 2008.

As the economic condition varies from region to region in the United States because of the country's vast geographic size, we recognize a wide gap in the impact of the subprime mortgage problem between regions affected by the problem and other regions if we look at such economic indicators as the unemployment rate and personal consumption spending on state-by-state and region-by-region bases.

Below, we will analyze the differences between states and between regions concerning housing prices, employment, and personal consumption in the United States.

#### (A) Housing price indices (S&P/Case-Shiller home price indices)

The trend in the S&P/Case-Shiller Home Price Indices show that housing prices started to rise sharply around 2003 but turned down around the middle of 2006 and decline sharply thereafter. Among cities that posted particularly sharp ups and downs in housing prices are Miami, Los Angeles, San Diego, Tampa, Las Vegas, Phoenix and San Francisco. These cities are located in a U.S. area known as the Sun Belt.<sup>15</sup>

In cities in the Sun Belt area, an abundance of houses has been supplied since the 1990s, and the

<sup>&</sup>lt;sup>14</sup>After an investment fund under BNP Paribas, a major French bank, announced a freeze of the withdrawals of funds by investors in August 2007, concerns over a possible credit system crisis grew.

<sup>&</sup>lt;sup>15</sup> The Sun Belt area as referred to herein includes the following states: North Carolina, South Carolina, Georgia, Florida, Alabama, Mississippi, Louisiana, Texas, New Mexico, Arkansas, Oklahoma, Arizona, Utah, Colorado, Nevada and California.

number of immigrants increased rapidly since 2000. Housing starts increased 61% between 1991 and the peak year in the Midwest and 68% in the Northeast, compared with increases of 141% and 107% in the Sun Belt regions of the South and the West, respectively (see Figure 1-2-1-21). As for changes in the population by state and region, eight of the nine states that posted an increase of more than 10% between January 2000 and April 2006, compared with the national average of 6.4%, were located in the Sun Belt area (see Figure 1-2-1-22).

In the meantime, speculative housing investments grew in the Sun Belt area, boosting housing prices (Figure 1-2-1-23 (i)). Seven of the nine cities where the housing price index in the peak time showed a larger increase from January 2000 than the increase in the average price for 20 major U.S. cities were located in the Sun Belt area. Later, housing prices fell sharply as a result of a rapid decline in speculation-driven demand. Seven of the 10 cities where the housing price index in March 2009 showed a larger decline from the peak time than the decline in the average price for 20 major U.S. cities are located in the Sun Belt area (see Figure 1-2-1-23 (ii)).

The regions where the foreclosure rate is high roughly corresponds to the regions where housing prices showed large swings, as Nevada, Florida, Arizona, California and Colorado are placed high in the rankings of states in terms of the foreclosure rate (see Figure 1-2-1-24).







 The figure includes the District of Columbia.
 Orange bars indicate states comprising the Sun Belt. Source: U.S. Census Bureau.

## Figure 1-2-1-23 Percentage change in U.S. housing price index by city

(i) Price increases (from January 2000 to the peak)



Notes:

2. Orange bars indicate states comprising the Sun Belt.

Source: S&P/Case-Shiller Home Price Indices .



(ii) Price declines (from the peak to March 2009)

Notes:

1. January 2000 = 100.

2. Orange bars indicate states comprising the Sun Belt.

Source: S&P/Case-Shiller Home Price Indices .

<sup>1.</sup> January 2000 = 100.



#### Figure 1-2-1-24 U.S. foreclosure rates by state (2008)

### (B) Employment indicator

Data on the U.S. unemployment rate on a state-by-state basis show that among the states that posted a particularly sharp rise in the unemployment rate are states where housing prices showed large swings, such as Nevada, North Caroline, California, Florida, South Carolina and Alabama.

In Michigan, too, the unemployment rate rose significantly, indicating that the financial crisis has had a considerable impact on the real economy of this state, which depends mainly on the auto industry (see Figure 1-2-1-25).

The original source mentioned in a note that due to changes and improvements made to some data acquisition methods, the statistics include data that might be lower than actual figures.
 "State" includes the District of Columbia.
 Source: RealtyTrac.



Figure 1-2-1-25 Changes in U.S. unemployment rate (2004–2008 average to April 2009)

# (C) Personal consumption spending

The annual average personal consumption spending in the United States started to grow sharply since around 2003, when a housing price surge began, and consistently increased until 2007, when the growth turned negative in the West and slowed down in the South (see Figure 1-2-1-26). This indicates that personal consumption was dampened in the West and the South in particular as the impact of the subprime mortgage problem was significant in these regions.



Figure 1-2-1-26 U.S. annual average consumer spending by region

#### (3) U.S. economy facing the balance sheet adjustments of the household sector

As shown earlier, personal consumption made the greatest contribution to real GDP growth among all demand components during the period of economic growth between the fourth quarter of 2001 and the fourth quarter of 2007 (see Figure 1-2-1-1). The trend of personal consumption is an important yardstick for grasping the depth of the current recession and assessing the future prospects of the economy. Below, we will examine the impact of the financial crisis caused by the collapse of the housing bubble on personal consumption from the viewpoint of the balance sheet of the U.S. household sector.

## (A) Factors behind the expansion of consumption by the U.S. household sector

# (a) Trend in the consumption by the U.S. household sector

The expansion of personal consumption since the fourth quarter of 2001 was due to active discretionary spending (see Figure 1-2-1-27).<sup>16</sup> Data on the trend of personal consumption as divided into basic spending and discretionary spending show that growth in basic spending has slowed down since 2006, when the rise in housing prices started to lose momentum, and growth in discretionary spending has also slowed down since 2007. In this process, the contribution made to real GDP growth by discretionary spending, which had until then led active consumption, declined significantly. Since the third quarter of 2008, both basic spending and discretionary spending have declined. Such a serious slump in personal consumption was not observed even in the wake of the collapse of the IT bubble.

<sup>&</sup>lt;sup>16</sup> "Discretionary spending" as referred to herein is consumption spending on goods and services whose elasticity to the household disposal income exceeds 1, while "basic spending" is consumption spending on goods and services whose elasticity to the household disposal income is lower than 1. Discretionary spending includes the purchase of luxury goods such as automobiles, while basic spending includes daily necessity expenditures such as food expenses.



## Figure 1-2-1-27 Trends in consumer spending in terms of basic spending and discretionary spending

#### (b) Consumption structure of the U.S. household sector

The value of real estate held by the U.S. household sector increased from \$13.1 trillion at the end of 2000 to \$24.3 trillion at the end of 2006 (see Figure 1-2-1-28).<sup>17</sup> Because of substantial credit easing implemented by the FRB in 2001 and onward, housing demand, which is highly sensitive to interest rate changes, stayed very strong. In addition, as various financial services for households, mainly those using equity in homes as collateral, became available, including home equity loans<sup>18</sup> and cash-out refinancing,<sup>19</sup> the constraints on the liquidity of the household sector were eased considerably and the wealth effect due to a drop in interest rates increased.

In the United States, there is a stronger positive co-relation between housing prices and personal consumption (wealth effect) than between stock prices and personal consumption.<sup>20</sup> By taking advantage

Notes: Adjusted price (2000 chained prices) basis. "Basic spending" is consumption spending on goods and services whose elasticity to the household disposal income is lower than 1, while "discretionary spending" is consumption spending on goods and services whose elasticity to the household disposal income exceeds 1. Source: U.S. Department of Commerce.

<sup>&</sup>lt;sup>17</sup> According to the Survey of Consumer Finances by the U.S. Department of Commerce, the value of real estate held by the household sector has increased for almost all income brackets since 2001.

<sup>&</sup>lt;sup>18</sup> The home equity loan is a loan secured by the present net value of a home (the net asset value, which is obtained by subtracting the outstanding mortgage balance from the present assessment value) owned by the borrower, with the loan amount limit set at the present net value.

<sup>&</sup>lt;sup>19</sup> In a cash-out refinancing, a mortgage loan borrower who refinances the existing mortgage increases the loan amount beyond the existing loan balance and takes out the difference as cash.
<sup>20</sup> See Section 2, Chapter 1 of the "White Paper on International Economy and Trade 2008." "It's the Housing

<sup>&</sup>lt;sup>20</sup> See Section 2, Chapter 1 of the "White Paper on International Economy and Trade 2008." "It's the Housing Bubble, Not the Credit Crunch!" by Dean Baker (2007), estimated that a rise of \$1 in the housing asset value and a rise of \$1 in the stock asset value would lead to an increase of 5 to 6 cents and an increase of 3 to 4 cents, respectively, in the amount of consumption spending. Meanwhile, "Housing Wealth and Consumer Spending" by the U.S. Congressional Budget Office (2007) summarized the results of a research on the wealth effect in recent years. The results indicated that on average, a change of \$1 in the housing asset value would lead to a change of 5.14 cents in the amount of consumption spending, although it is necessary to take into consideration differences between the various measuring periods, data categories (national data, state-by-state data and micro

of home equity loans and similar financial services, the U.S. household sector increased borrowings and consumption in line with a rise in housing prices (see Figures 1-2-1-29 and 1-2-1-30).<sup>21</sup>

As a result, the ratio of outstanding mortgage loans to overall debts rose from around 65% at the end of 2000 to around 73% at the end of 2006 (Figure 1-2-1-31).<sup>22</sup> Analysis of the factors behind the changes in the number of years of debt redemption<sup>23</sup> of the average U.S. household shows that the amount of total savings varied from year to year due to the effects of income tax cuts, among other reasons, but that borrowings continued to grow. In particular, borrowings grew around 10% each year between 1999 and 2006. This confirms that while consistently increasing borrowings, the U.S. household did not accumulate savings at a comparable pace (see Figure 1-2-1-32). The ratio of net assets (to total assets) on the balance sheet of the household declined, making the balance sheet vulnerable to a drop in housing prices (see Figure 1-2-1-33).

											(\$trillion)
			End of 2000	End of 2001	End of 2002	End of 2003	End of 2004	End of 2005	End of 2006	End of 2007	End of 2008
Total assets		49.4	49.8	49.3	62.9	62.9	70.3	75.7	77.0	65.7	
	Physical as	sets	16.2	17.7	19.3	21.2	24.0	27.4	28.4	27.3	24.9
		Real estate	13.1	14.4	15.8	17.6	20.2	23.5	24.3	23.0	20.5
	Financial as	ssets	33.2	32.0	30.1	35.1	38.9	42.9	47.4	49.8	40.8
		Stocks	8.1	6.8	5.2	6.8	7.5	8.0	9.2	9.2	5.5
Total liabili	ities		7.4	8.0	8.8	9.9	11.0	12.2	13.4	14.3	14.2
	Mortgage le	oans	4.8	5.3	6.0	6.9	7.8	8.9	9.8	10.5	10.5
	Consumer l	oans	1.7	1.9	2.0	2.1	2.2	2.3	2.4	2.6	2.6
Net assets			42.0	41.7	40.5	46.4	51.9	58.1	62.3	62.7	51.5
	Ratio to dis	posable income	5.8 times	5.6 times	5.2 times	5.7 times	6.0 times	6.4 times	6.5 times	6.2 times	4.8 times

Table 1-2-1-28 Changes in the balance sheet (major items) of the U.S. household sector

Source: FRB.

data) and estimation methods (the consumption function estimate based on the ECM and a method that takes account of the habit formation effect and the dynamic relationship between consumption and assets) that were used in the research.<sup>21</sup> The practice of taking out cash through a home equity loan, cash-out refinancing, etc. using the increased

<sup>&</sup>lt;sup>21</sup> The practice of taking out cash through a home equity loan, cash-out refinancing, etc. using the increased housing asset value is referred to as MEW (mortgage equity withdrawal). According to "Sources and Uses of Equity Extracted from Homes" by Alan Greenspan and James Kennedy (2007), the amount of funds obtained through MEW is estimated to have been equivalent to around 2% of the overall consumption spending in 2005 and 2006, so such funds presumably played some role in increasing consumption.

<sup>&</sup>lt;sup>22</sup> According to the SCF (Survey of Consumer Finances), compiled by the U.S. Department of Commerce, the ratio of housing-related debts to the overall outstanding debts has risen since 2001 for all income brackets.

 $<sup>^{23}</sup>$  years of debt redemption of U.S. household = debts/total savings



Figure 1-2-1-29 Ratio of outstanding home equity loans to outstanding mortgage loans

Figure 1-2-1-30 Changes in the market price of real estate owned, debts and housing prices in the household sector





Figure 1-2-1-31 Changes in the ratio of outstanding mortgage loans to overall debts

Figure 1-2-1-32 Changes in number of years of debt redemption of the average Japanese and U.S. households





Figure 1-2-1-33 Ratio of net assets (to total assets) in the Japanese and U.S. household sectors

(%)

# (B) Impact of the financial crisis caused by the collapse of the housing bubble on personal consumption

The financial crisis triggered by the collapse of the housing bubble caused a change in consumption by the U.S. household sector, which until then depended on huge borrowings. As shown earlier, the household sector raised the savings rate by curbing consumption and stepping up debt adjustments amid the deterioration in the employment situation.<sup>24</sup> Data on changes in the balance sheet of the U.S. household sector show that the ratio of outstanding debts to overall disposable income fell from 1.41 at the end of 2007 to 1.34 at the end of 2008. However, it is obvious that the U.S. household is saddled with excessive debts compared with the debt levels in the past and the debts of Japan during the bubble economy era (see Figure 1-2-1-34). As the U.S. household did not reduce debts much compared with its steep reduction of assets, its net assets decreased significantly (see Table 1-2-1-28). We estimated how much the decline in the net asset value due to the financial crisis caused by the collapse of the housing bubble affected the real economy by calculating the personal consumption function using the net asset factor, the income factor and the interest rate factor as explanatory variables. As a result, it was confirmed that the decline in the net asset value since the fourth quarter of 2007 reduced personal consumption as a component of real GDP by around 2.2% (see Figure 1-2-1-35). The U.S. household needs to reduce its swollen debts at a time when the employment situation is deteriorating and asset prices are declining.<sup>25</sup> It

Notes: Japan's 1980–1996 data is from the 93SNA (1995 basis) and 1996–2007 data is from the 93SNA (2000 basis). Source: U.S. Department of Commerce, FRB, Cabinet Office of Japan.

<sup>&</sup>lt;sup>24</sup> According to a survey conducted on 5,000 people across the United States in March by Alix Partners LLP, a U.S. consulting firm specializing in business rehabilitation, the people would set aside an average of just over 14% of their income for savings even after the end of the current recession. In addition, 37% of the respondents replied that they would curb spending over the coming two to three years and 18% replied they would do so over the coming four to five years (Nihon Keizai Shimbun, the morning edition, June 1, 2009).

<sup>&</sup>lt;sup>25</sup> "RETHINKING THE ROLE OF FISCAL POLICY" by Martin Feldstein (2009), which pointed out at an early date that a drop in consumption due to a decline in housing prices would be significant, estimated that a negative wealth effect would reduce consumption by \$400 billion annually. "Housing wealth and consumer spending" by John N Muellbauer (2008), argued that the housing wealth effect works mainly through the credit

is possible that a decline in personal consumption alone will have negative effects equivalent to wiping out the past usual annual growth of 3% in real U.S. GDP. According to an estimate by the OECD, the potential growth rate of the U.S. economy, which previously stayed at around 3%, will decline to 2.3% in 2010 (see Figure 1-2-1-36). Although there are positive factors, such as the effects of the credit easing measures taken by the FRB and the fiscal measures implemented by the Obama administration (see (4) "U.S. Response to Economic and Financial Problems"), it is expected to take a long time before the foundation for sustainable recovery is established.



Figure 1-2-1-34 Changes in the ratio of outstanding debts (to overall disposable income) in the Japanese and U.S. household sectors

channel. Citing research on the U.K. market based on the modern version of the life cycle model, it pointed out that as the liberalization of the credit market raises the ratio of consumption to income and the housing wealth effect increases consumption, the combination of credit channel and falling housing prices has a negative impact on consumption and that this impact is more pronounced in the United Kingdom than in Japan and Germany.



Figure 1-2-1-35 Decomposition of factors contributing to personal consumption

Figures in parentheses are t-values. Revised coefficient of determination=0.99. Dw ratio=2.42. Estimation period: From the second quarter of 1991 to the fourth quarter of 2008.

Real net assets are the net assets of U.S. households and private non-profit organizations serving households.

Mortgage rate: 30-year fixed-rate mortgage rates.

The PCE deflator is used to convert nominal expenditures into real values. 2. US households received income tax rebates in Jul.-Sep. 2001, Jul.-Aug. 2003 and Apr.-Jul. 2008.

Source: U.S. Department of Commerce, FRB.



# Figure 1-2-1-36 Changes in potential growth rate

## (4) U.S. countermeasures to economic and financial problems

Since February 2009, the Obama administration has announced measures to support the real economy and the financial system as well measures to deal with problems related to the housing market, which is the source of the financial and economic crisis. Below, we will explain those measures and related matters.

#### (A) Economic stimulus measures (American Recovery and Reinvestment Act)

On February 17, 2009, a bill for a package of economic stimulus measures was enacted after the financial size of the package was revised to \$787.2 billion. The economic stimulus package, whose size is equivalent to 5.7% of nominal U.S. GDP (some \$14 trillion in 2007), is the biggest such package ever, and it aims to create more than 3.5 million jobs over a two-year period. Furthermore, it includes not only short-term stimulus measures but also investment plans related to renewable energy, education and medical care, all of which forms the foundation for future growth (see Figure 1-2-1-37).

According to an estimate by the Congressional Budget Office, the expenditures to be made by the end of 2009 will account for 25% of the total expenditures of the economic stimulus package and those to be made by the end of 2010 will account for 50%, prompting some people to argue that too much time will pass before the economic downturn can be arrested.<sup>26</sup> In the meantime, on May 13, 2009, the White House announced the status of progress in the implementation of the economic stimulus package, revealing that in the 77 days to May 5, more than \$88 billion (the actual spending amount was \$28.5 billion, or 3.6% of the total planned expenditures) was made available for programs and projects and 150,000 jobs were created.<sup>27</sup>



#### Figure 1-2-1-37 American Recovery and Reinvestment Act

Notes: This figure is based on the details of the \$787 billion stimulus package announced by the White House. The package was revised to \$787.2 billion, following the Congressional Budget Office's close examination. Source: Recovery.gov (White House), websites of the Committee on the Budget, U.S. House of Representatives, and Senate Budget Committee, etc.

<sup>&</sup>lt;sup>26</sup> Tadao Hosoo, "OBAMA DAITOURYOU NO KEIZAITAISAKU" (2009)

<sup>&</sup>lt;sup>27</sup> From the White House website

In May 2009, the U.S. Department of Treasury announced that the budget deficit in the first seven months of fiscal 2009 (from October 2008 to April 2009) hit a record high of around \$802.3 billion. This is attributable to an expansion of expenditures caused by the Obama administration's adoption of measures to deal with the financial crisis. According to the projection of budget deficits by the Office of Management and Budget (see Figure 1-2-1-38), the budget deficit in fiscal 2009 (from October 2008 to September 2009) will reach \$1.841 trillion, equivalent to 12.9% of nominal GDP.



## Figure 1-2-1-38 U.S. budget deficit forecast

Source: Updated Summary Tables, May 2009 (Office of Management and Budget).

## (B) Financial stability plan

Since 2008, the reorganization and shake-out of U.S. commercial banks and investment banks have proceeded, including the acquisition of Bear Stearns by JP Morgan Chase, the acquisition of Merrill Lynch by Bank of America, the failures of Lehman Brothers and Washington Mutual and the conversion of Goldman Sachs and Morgan Stanley into bank holding companies. The number of failures of financial institutions in the United States in the first five months of 2009 stood at 36, increasing at an unprecedented pace and already exceeding the 25 failures for the whole of 2008 (see Figure 1-2-1-39). Therefore, the government is exercising leadership in implementing measures to deal with the financial crisis based on the second Financial Stability Plan, which is comprised of the following four pillars.<sup>28</sup>

<sup>&</sup>lt;sup>28</sup> Compiled based on materials published on the websites of the U.S. Department of Treasury, FRB, and the Ministry of Finance.



Figure 1-2-1-39 Changes in the numbers of failed financial institutions in the U.S.

#### (a) Financial stability trust

Under the Capital Assistance Program, banks with assets in excess of \$100 billion are required to conduct a comprehensive stress test in order to check whether they have sufficient capital to continue loans and absorb losses in the event of a deeper recession. At the same time, such banks are required to enhance the transparency of their balance sheets and information disclosure. If a bank is judged to need additional capital as a result of the stress test, it will be allowed to receive public funds under the Capital Assistance Program through the issuance of preferred shares that are convertible into common shares as a stop-gap measure until it raises capital from the market. According to the results of stress tests that were announced by the FRB on May 7, 2009, 10 of the 19 banks that conducted the tests were judged to be undercapitalized, with the total capital shortage amount coming to \$74.6 billion.

## (b) Public-Private Investment Program (PPIP)

Under the PPIP, a fund will be established using capital provided by the U.S. Department of Treasury (the Department of Treasury will provide up to \$100 billion out of the funds of Troubled Asset Relief Program (TARP)), the Federal Deposit Insurance Corp. (FDIC), the FRB and private investors with a view to improving the flow of credit by removing bad loans and illiquid assets (legacy assets) from the balance sheets of financial institutions and stabilizing and enhancing the functions of the financial system by restoring the functions of the securities market.

# (c) Measures to facilitate loans to consumers and companies (up to \$1 trillion (including \$100 billion in TARP funds))

The limit on the amount of funds to be provided by the U.S. Department of Treasury to the FRB's Term Asset-Backed Securities Loan Facility (TALF)<sup>29</sup> will be raised from \$20 billion to \$100 billion and

<sup>&</sup>lt;sup>29</sup> "TALF," which was announced on March 3, 2009, by the FRB and the U.S. Department of Treasury, is

the limit on the amount of secured loans will be increased from \$200 billion to \$1 trillion. In addition, the scope of eligible collateral will be expanded from newly issued securities backed by various loans for individuals (e.g. consumer loans and auto loans) and rated "AAA" to commercial mortgage-backed securities (CMBS).

### (d) Mortgage loan-related support measures and program for avoiding foreclosures

Major measures are requesting financial institutions participating in the Financial Stability Plan to join a program to reduce foreclosures, easing the requirements for participation in the mortgage refinancing program and supporting mortgage loan borrowers by reducing interest payments.

## (i) Support for refinancing with low-interest loans

Support for mortgage loan refinancing will be provided to up to 4 or 5 million homeowners receiving loans from government-sponsored housing loan enterprises (Fannie Mae, or the Federal National Mortgage Association, and Freddie Mac, or the Federal Home Loan Mortgage Corp.)

#### (ii) Homeowner stabilization initiative

Public funds totaling \$75 billion (\$50 billion will be provided out of the TARP funds and the remaining \$25 billion will be provided by Fannie Mae and Freddie Mac<sup>30</sup>) will be provided to stabilize up to 3 or 4 million homeowners who have difficulty repaying mortgage loans.

#### (iii) Support for Fannie Mae and Freddie Mac

Based on the Housing and Economic Recovery Act, enacted in July 2008, the limit on the amount of funds that may be injected into Fannie Mae and Freddie Mac will be raised from \$200 billion to \$400 billion.

It should be noted that TARP is prescribed in the Emergency Economic Stabilization Act, which was enacted on October 3, 2008, in the wake of the Lehman shock. Up to \$700 billion is allocated to TARP, a program to purchase bad loans from financial institutions.

On May 20, 2009, the U.S. Department of Treasury announced that of the TARP funds, \$98.7 billion remained unused and \$25 billion in funds injected into financial institutions as capital would be repaid. The entities and programs to which TARP funds are to be provided are listed in Table 1-2-1-40.

intended to restore the function of the ASB (asset-backed security) market.

<sup>&</sup>lt;sup>30</sup> On September 7, 2008, Fannie Mae and Freddie Mac were placed under government control.

		(\$100 million)
Exceptional Relief		1,633
	AIG	700
	Citigroup/Bank of America	525
	Autos	358
	Auto Suppliers	50
Capital	Capital Purchase Program (CPP)	
Housing	and Liquidity Initiatives	2,450
	Housing	500
	Term Asset-Backed Securities Loan Facility (TALF)	800
	Unlocking SBA Lending Markets	150
	Public Private Investment Program	750
Subtotal		6,263
Total Remaining		737
Total		7,000

Table 1-2-1-40 Entities and programs to which the U.S. Treasury provides TARP funds

Source: U.S. Department of the Treasury.