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Household Financial Stability

Who Suffered the Most from the Crisis?

By William R. Emmons and Bryan J. Noeth

Household wealth declined almost $17 trillion in inflation-adjusted terms, or 26 percent, from its peak in mid-2007 to the trough in early 2009.[1] Only about two-fifths of that loss had been recovered by early 2012. Looking at individual asset categories between June 30, 2007, and March 31, 2009, the inflation-adjusted value of households' real-estate holdings declined 26 percent ($5.4 trillion), while stock-market equity holdings declined in value by 51.5 percent ($10.8 trillion) after adjusting for inflation.

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In percentage terms, however, the largest wealth losses typically were suffered by younger families, which tend to be less wealthy. Younger and middle-aged African-American and Hispanic families were especially hard-hit.

Not surprisingly, wealth losses were distributed unevenly across the population. In dollar terms, older, wealthier households lost the most simply because their asset holdings were large to begin with and were more concentrated in equity investments, which declined sharply in value.

In percentage terms, however, the largest wealth losses typically were suffered by younger families, which tend to be less wealthy. Younger and middle-aged African-American and Hispanic families were especially hard-hit. Families headed up by individuals without a college degree also suffered larger average percentage wealth declines than did families headed by a college graduate. Although the younger, minority and less-educated families typically did not hold large positions in the stock market, many did hold a large amount of real estate relative to their incomes and total assets, mostly in the form of a primary residence. Many of these families also had relatively little owners' equity in their homes. This meant that declining house prices significantly reduced or even completely wiped out their owners' equity stakes, which had comprised a large part of their net worth before the crash. These groups also generally felt the brunt of job and income losses during the recession.

The Survey of Consumer Finances

The Federal Reserve tracks household balance-sheet conditions with its triennial Survey of Consumer Finances (SCF).[2] Virtually identical versions of the survey have been conducted every three years, beginning in 1989, with the two most recent surveys carried out in 2007 and 2010—just before and after the financial crisis and recession.[3]

To facilitate detailed economic analysis of household finances, the SCF collects information about each household's members, including the head of the household. The SCF allows classification of families along a number of demographic dimensions, including race and ethnicity, age and maximum educational attainment; the survey also gathers a number of economic, financial and social variables for each family, including family income, detailed balance-sheet data, job type and occupation, housing status (homeowner or renter), marital status, family structure, region of residence, and whether the family resides in an urban or rural community.

The SCF is one of the best sources of publicly available detailed information at a point in time on many aspects of household finances, including asset holdings, debts owed and each family's net worth, which is the difference between the total value of all assets and all liabilities. Net worth, or wealth, is the simplest comprehensive summary measure of a balance sheet's strength. This article focuses on changes in net worth between 2007 and 2010.

A First Look at Household Balance Sheets

Many discussions of financial and economic conditions at the household level sort individuals or families into categories based on their current incomes, wealth, homeownership status or another indicator that may change from one year to the next or may be chosen by that family. A number of interpretive problems arise in any such discussion; so, we rely in this article exclusively on demographic dimensions of population diversity that are not subject to change or choice to form groups for analysis. These dimensions are race or ethnicity, age and college-degree status. (See sidebar on Page 13.)

We define subgroups as follows:

- Race and/or ethnicity:
  - Historically disadvantaged minorities, in which the interviewee is African-American or Hispanic of any race (henceforth, "HDM");
  - Whites and other minorities, in which the interviewee is white non-Hispanic, is of Asian descent or belongs to another minority group not included elsewhere (henceforth, "WOM");
- Age:
  - Family head is under 40 years of age (henceforth, "young");
  - Family head is at least 40 but less than 55 years old (henceforth, "middle-aged"); or
  - Family head is 55 years of age or older (henceforth, "old");
- College-degree attainment:
  - Family head has received either a two-year or a four-year college degree (henceforth, "college grad");
  - Family head has not received either a

two-year or a four-year college degree (henceforth, "non-college grad").

In addition to the analytical advantages outlined in the sidebar, using these three dimensions of demographic diversity to study household financial outcomes reveals striking differences among various subgroups of the population. Because we can rule out the possibility of reverse causation (see the sidebar), a researcher or policymaker can be more confident when searching for underlying causes of diverging household financial outcomes, as occurred when wealth declined during the financial crisis.

Breaking Down Wealth Declines

The decline between the median real (inflation-adjusted) net worth in 2007 and the median real net worth in 2010 was 39.1 percent among all families, according to the SCF; the decline in means was 15.0 percent.[4] Splitting the sample into HDM and WOM families; young, middle-aged and old families; and families headed by college grads and non-college grads, respectively, we see evidence of differences along each dimension. (See Table 1.)

Comparing the percent changes in the medians and means within each subgroup, the SCF reveals that families that were young or middle-aged, less-educated, and members of historically disadvantaged minorities generally suffered larger wealth declines between 2007 and 2010 than did other families.[5] In particular:

- The median (respectively, mean) real-net-worth decline among HDM families was 28.6 (37.2) percent, vs. a median (mean) real-net-worth decline among WOM families of 30.4 (11.0) percent;
- The median (mean) real-net-worth decline among young families was 37.6 (43.8) percent, among middle-aged families was 42.0 (19.9) percent and among old families was 18.6 (11.5) percent; and
- The median (mean) real-net-worth decline among non-college grad families was 38.9 (22.3) percent, vs. a median (mean) real-net-worth decline of 35.2 (15.5) percent among college-grad families.

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Why Use Demographic Characteristics to Group the Data When Studying Household Financial Outcomes?

We use three demographic dimensions of population diversity in this article to study household financial outcomes—race and/or ethnicity, age and college-degree status. Why use these and not income or wealth to form subgroups for study? There are at least four good reasons.

First, these dimensions of population diversity are not subject to change or choice. An important disadvantage of an income- or wealth-based approach to organizing the data is that a single family (or group of families) may move between different groupings from one date to another, obscuring some important underlying determinants of longer-term economic outcomes. When using race, age and college-degree attainment, a family doesn't move erratically between different groups at different dates.

For example, a particular family may have relatively high income one year and low income the next because the 25-year-old head of the family has quit her job as a lab technician to go to medical school. A different family's income levels and trajectory may be precisely the same even though the underlying reality is very different. Suppose that a 55-year-old head of a family has been laid off from his factory job and now draws unemployment insurance. The long-run income prospects for the family of the 25-year-old have improved, while the prospects for the family of the 55-year-old have deteriorated. Grouping these two families together by income levels or changes in income would obscure the underlying factors (including age and educational attainment) driving long-run economic outcomes.

Another disadvantage of using income or wealth cutoffs to form groups is that these values are defined differently in different contexts. For example, income could refer to before-tax or after-tax income, could include or exclude government benefit payments, and could include or exclude capital gains (realized or unrealized). Wealth is notoriously difficult to define and measure; so, comparing different studies is problematic. Race, age and college-degree attainment are, in principle, much more clear-cut and are more likely to be measured the same way in different studies.

Third, race, age and college-degree attainment are relatively objective and easy to verify. This is not true of income and wealth, which are private information and, often, highly guarded secrets—especially among the wealthy or those whose income may be illicit or unreported to tax authorities. A related difficulty is that some families themselves may not know what their incomes or wealth levels are at a given time or over a certain period.

Finally, there is a methodological reason to prefer demographic dimensions of diversity to economic and financial variables when searching for underlying causal relationships—namely, the possibility of "reverse causation." To take a simple example, high-income and high-wealth families have higher homeownership rates than do families with lower levels of income or wealth. Does this mean that having a high income or high wealth "causes" higher homeownership rates? Perhaps, but it also might be the case that homeownership itself contributes to higher income and higher wealth through various channels. In other words, causation might run from X to Y, but it also might run in the reverse direction, from Y to X. In the language of economics, we cannot definitely "identify" the role of X in causing Y due to the possibility of reverse causation. The fact that African-Americans and Hispanics have lower homeownership rates than do white or Asian families is not subject to the same methodological critique. In other words, something about being African-American or Hispanic seems to lead to a lower probability of being a homeowner, but being a homeowner does not have any effect on a family's race. In this case, X causes Y, but Y definitely does not cause X.

Federal Reserve Bank of St. Louis Creates Research Initiative on Household Financial Stability

This article is part a new research effort headed up by the Federal Reserve Bank of St. Louis to better understand the evolution of household balance sheets over time and across different demographic groups. Not only are household balance sheets informative about the financial challenges and opportunities facing American families, but they also matter for the economy as a whole. As Federal Reserve Board Gov. Sarah Bloom Raskin noted last year, "Our overall economic stability relies ultimately on the collective financial health of all American households."[7]

The St. Louis Fed's research effort, called *Household Financial Stability—A Research Initiative*, is involved in planning two major conferences at the St. Louis Fed:

- **Financial Access Forum, Oct. 25-26.** The forum will help communities and practitioners make informed choices about promising pathways for underbanked households to connect to wealth-building financial services. Key questions include: (1) What do we know about underbanked consumers? (2) What financial products exist to meet their needs? and (3) Through what channels are these products distributed?
- **Household Balance Sheets Research Symposium, Feb. 5-7.** Through invited papers and a call for papers, this research symposium will look at both household-level and macro-level outcomes associated with household balance sheets.

For more information on these conferences, as well as on the *Household Financial Stability—A Research Initiative*, see www.stlouisfed.org/community_development/hfs/

HOUSEHOLD FINANCIAL STABILITY
—A Research Initiative

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Drilling Down Even Further

Figures 1 through 4 show the levels of median and mean inflation-adjusted net worth for each of 12 categories of families between 1989 and 2010, based on SCF data. Figure 1 displays the median net worth over time of historically disadvantaged minority families partitioned along two dimensions, age and college-degree status of the family head. Figure 2 shows the mean net worth over time for these groups. Figures 3 and 4 are analogous for white, Asian and other minority families.

Not surprisingly, the wealthiest among all age- and education-defined subgroups in most surveys was old college-grad families, whatever the race or ethnicity. Among WOM families, this was true in every survey, whether measured by median (Figure 3) or mean (Figure 4) net worth. For HDM families, the only exceptions were for the median in the 2010 survey (Figure 1) and for the mean in the 2004 survey (Figure 2). Families headed by a college graduate 55 years or older generally earned higher incomes over a longer period than families in other groups. In addition, higher cognitive abilities and more time to gain financial knowledge and experience likely aided wealth accumulation. Families with the lowest wealth among both race-defined groups in every survey were those headed by young non-college grads.

Figures 1 through 4 show that the second-wealthiest subgroup is families of any race headed by middle-aged college grads. The remaining three subgroups within each set of race-defined groups—middle-aged or old non-college grads and young college grads—have had similar wealth levels through the past several decades. At any given time, middle-aged and old non-college grad families have had more time to save and gain financial experience than young families. But non-college grad families likely earned less at similar stages in their lives and may have had more difficulty mastering some financial challenges than college grads. Apparently, the various factors roughly offset each other at any given point in time for these subgroups.

Finally, careful comparison of Figures 1 through 4 reveals that, when holding age and college-degree attainment constant, the WOM median or mean value in each of the six age-education subgroups had higher net worth than the corresponding HDM median or mean family for each wave of the survey.[6] In other words, whether we use the median or the mean inflation-adjusted value of net worth, every age-education subgroup that is a historically disadvantaged minority had lower wealth than its corresponding white, Asian and other minority counterpart in every survey, from 1989 to 2010.

In the 2010 survey, for example, HDM families' median net worth ranged from a low of 19.5 percent of the corresponding value of WOM families' net worth, in the old college-grad category, to a high of 42.9 percent of the WOM families' value, in the middle-aged college-grad category. Using mean values, HDM families' net worth ranged from 16.6 percent to a high of 36.1 percent of WOM families' net worth, holding constant the age and education attributes of those families.

Which Families Were Hit the Hardest?

Figures 1 through 4 reveal that all 24 of the subgroup measures (12 median measures and 12 mean measures) identified here showed declines in wealth between 2007 and 2010. The percentage declines in median inflation-adjusted net worth ranged from 14.2 percent, among old WOM college-grad families, to 54.1 percent, among young WOM college-grad families. Mean declines ranged from 11.3 percent, among old WOM non-college grads, to 65.8 percent, among young HDM college-grad families.

Tables 2 and 3 report median and mean percent changes, respectively, in real net worth between 2007 and 2010 for each of the 12 age- and education-defined subgroups we have identified, first for historically disadvantaged minorities and then for whites, Asians and other minorities.

Tables 2 and 3 show that, by either measure, the hardest-hit subgroups generally were young or middle-aged families. For example, 10 of the 24 subgroup measures of inflation-adjusted wealth declined by 40 percent or more (considering Tables 2 and 3 together); nine of these 10 represented young or middle-aged family groups. Using the same metric (40 percent or larger decline in net worth), seven of the 10 subgroup measures corresponded to historically

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FIGURE 1

Median Inflation-Adjusted Net Worth among Historically Disadvantaged Minority Families

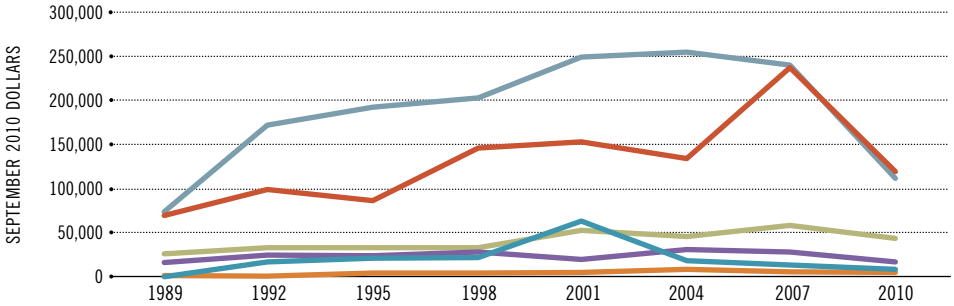


FIGURE 2

Mean Inflation-Adjusted Net Worth among Historically Disadvantaged Minority Families

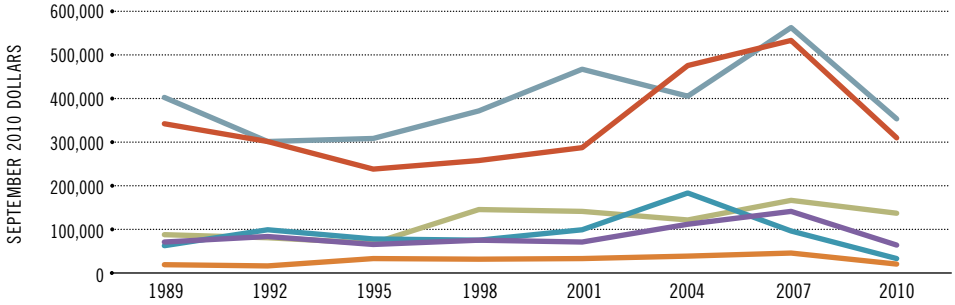


FIGURE 3

Median Inflation-Adjusted Net Worth among White or Other Minority Families (excluding African-Americans and Hispanics)

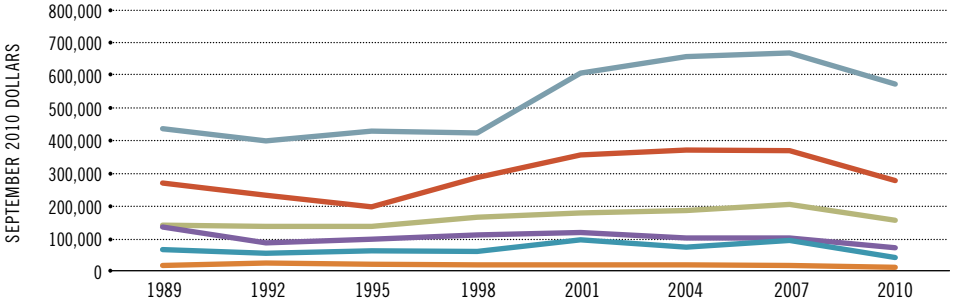
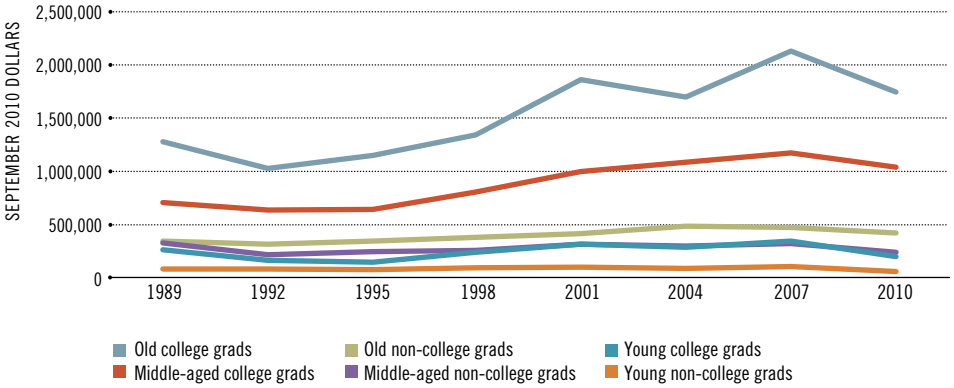


FIGURE 4

Mean Inflation-Adjusted Net Worth among White or Other Minority Families (excluding African-Americans and Hispanics)



SOURCE: Survey of Consumer Finances, various years.

TABLE 1

Change in Reported Net Worth between 2007 and 2010 Medians and Means, in Percent

Group	Percent change in medians between 2007 and 2010	Percent change in means between 2007 and 2010
Entire SCF sample	–39.1	–15.0
Race and/or ethnicity		
White, Asian or other minority	–30.4	–11.0
African-American or Hispanic	–28.6	–37.2
Age		
Younger than 40	–37.6	–43.8
40-54	–42.0	–19.9
55 or older	–18.6	–11.5
College-degree status		
College grad	–35.2	–15.5
Non-college grad	–38.9	–22.3

TABLE 2

Change in Reported Net Worth between 2007 and 2010 Medians, in Percent

African-American or Hispanic			White, Asian or other minority		
	Non-college grad	College grad		Non-college grad	College grad
Younger than 40	–15.0	–33.2	Younger than 40	–33.8	–54.1
40-54	–40.0	–49.6	40-54	–29.5	–24.6
55 or older	–24.9	–53.4	55 or older	–23.5	–14.2

TABLE 3

Change in Reported Net Worth between 2007 and 2010 Means, in Percent

African-American or Hispanic			White, Asian or other minority		
	Non-college grad	College grad		Non-college grad	College grad
Younger than 40	–54.3	–65.8	Younger than 40	–42.3	–42.1
40-54	–54.5	–41.9	40-54	–25.7	–11.6
55 or older	–17.6	–37.0	55 or older	–11.3	–18.1

SOURCE: Survey of Consumer Finances.

CATEGORY DEFINITIONS

Historically Disadvantaged Minorities (HDM): Interviewee is African-American or Hispanic of any race.

Whites and Other Minorities (WOM): Interviewee is white, Asian or of another minority group not included elsewhere.

College grad: Family head has either a two-year or four-year college degree.

Non-college grad: Family head does not have a two-year or four-year college degree.

Young: Family head is less than 40 years old.

Middle-aged: Family head is at least 40 but less than 55 years old.

Old: Family head is 55 years or older.

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disadvantaged minorities. Combining the dimensions of age and race, six of the 10 subgroup measures that declined 40 percent or more were young or middle-aged historically disadvantaged minority groups.

At the other end of the scale, just six of the 24 subgroup measures of wealth declined less than 20 percent. Four of the six corresponded to middle-aged or old white, Asian or other minority families, while three of the six were white, Asian or other minority families aged 55 or older. Indeed, the wealthiest subgroup of all by a wide margin on any measure—old, college-educated white, Asian or other minority families—suffered comparatively small losses. The median net-worth decline in this group was 14.2 percent, the lowest among all 12 subgroups (six HDM and six WOM). The mean net-worth decline of this group was 18.1 percent, which was the fourth-lowest among the 12 subgroups.

While other subgroups also experienced large declines—such as young white, Asian or other minority families with or without college degrees—the survey evidence suggests that the most severe wealth losses were borne by historically disadvantaged minority families.

We conclude that the financially most vulnerable groups—young and middle-aged, non-college-educated families belonging to a historically disadvantaged minority—typically suffered the biggest wealth declines during the financial crisis and recession. While other subgroups also experienced large declines—such as young white, Asian or other minority families with or without college degrees—the survey evidence suggests that the most severe wealth losses were borne by historically disadvantaged minority families.

Conclusion

Median, or typical, wealth losses during the 2007-10 period generally were largest in percentage terms, and likely most painful, for some of the most vulnerable segments of the population—namely, families that were young or middle-aged, non-college-educated, and African-American or Hispanic. Based on our ongoing analysis of the Federal Reserve's Survey of Consumer Finances, we hypothesize that three important sources of unusually large percentage declines in wealth among young, middle-aged and HDM families were:

1) large portfolio concentrations in housing before the crash—that is, housing represented a relatively large share of total assets;

2) relatively large reported percentage declines in the value of real-estate assets, perhaps related to characteristics of neighborhoods inhabited by young, middle-aged, HDM and less-educated households; and

3) higher "leverage," or mortgage-debt financing rather than equity financing, before house prices began to fall. Higher leverage meant that any decline in the value of a house was multiplied into a proportionately larger decline in the family's net worth.

What does it mean to conclude that young and middle-aged, less-educated HDM families suffered the greatest wealth declines during the financial crisis, perhaps because they were more likely to have shifted toward more highly leveraged, less-diversified balance sheets? Our use of demographic dimensions of diversity allows us to conclude that:

- Being young or middle-aged matters. This may be due to having children in the household and, therefore, facing constraints on how many hours can be worked and what unavoidable expenses are incurred; having relatively little financial knowledge or experience; or having had insufficient time to accumulate much wealth.
- Being a non-college grad matters. This may be due to the lack of certain cognitive abilities or specific learned skills that are important in financial decision-making.
- Being a member of a historically disadvantaged minority matters. This may be due to the fact that many minority households have faced discrimination—or the legacy of discrimination—in education, employment, housing or credit markets. Ω

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ENDNOTES

1 See Federal Reserve Flow of Funds Accounts.
2 See Bucks et al. and Bricker et al. (2011 and 2012).
3 In a special interim follow-up survey in 2009, the Fed reinterviewed almost 90 percent of the 2007 survey participants in order to see how the financial crisis and recession were affecting Americans of all backgrounds. Due to the unique structure and limitations of that survey, we do not include results from it here. For more information, see Bricker et al. (2011).
4 All values are expressed in terms of September 2010 purchasing power, as measured by the Consumer Price Index for All Urban Consumers, Research Series, or CPI-U-RS. The median value is the one in an ordered group that is larger than half of all observations and smaller than the other half. The mean value is the arithmetic average of all observations.
5 See Bricker et al. (2012) and Taylor et al.
6 Using a different data source, Taylor et al. reach similar conclusions.
7 See Raskin.

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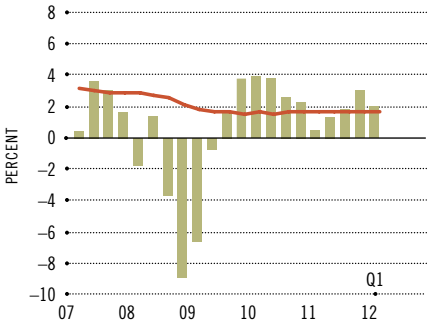
ECONOMY AT A GLANCE

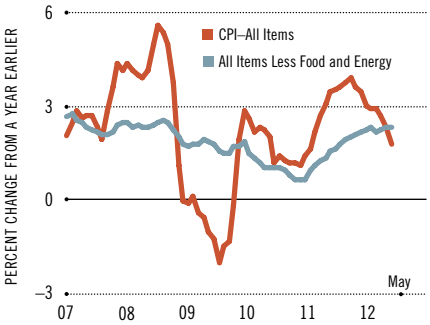
Eleven more charts are available on the web version of this issue. Among the areas they cover are agriculture, commercial banking, housing permits, income and jobs. Much of the data is specific to the Eighth District. To see these charts, go to stlouisfed.org/economyataglance

REAL GDP GROWTH

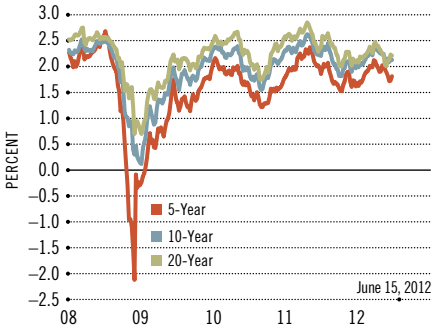


NOTE: Each bar is a one-quarter growth rate (annualized); the red line is the 10-year growth rate.

CONSUMER PRICE INDEX

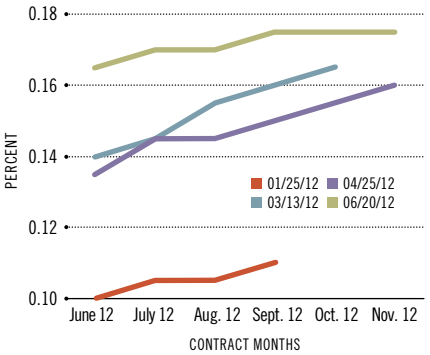


INFLATION-INDEXED TREASURY YIELD SPREADS

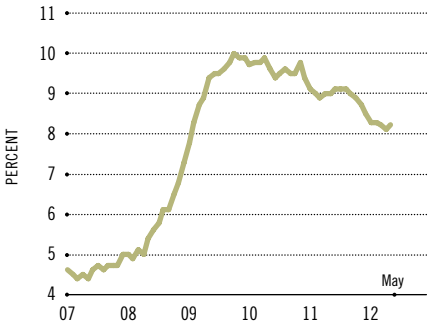


NOTE: Weekly data.

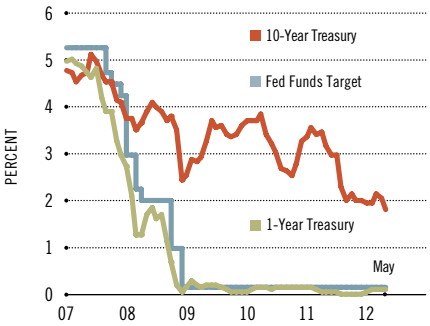
RATES ON FEDERAL FUNDS FUTURES ON SELECTED DATES



CIVILIAN UNEMPLOYMENT RATE

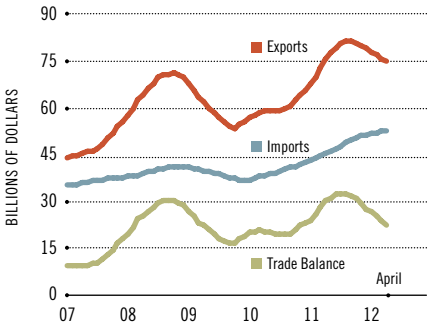


INTEREST RATES



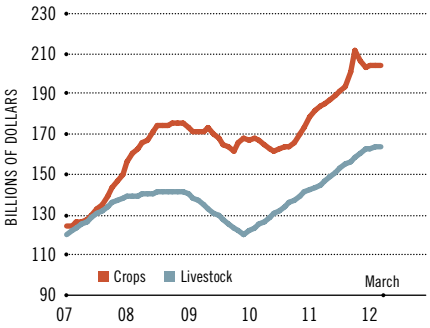
NOTE: On Dec. 16, 2008, the FOMC set a target range for the federal funds rate of 0 to 0.25 percent. The observations plotted since then are the midpoint of the range (0.125 percent).

U.S. AGRICULTURAL TRADE



NOTE: Data are aggregated over the past 12 months.

FARMING CASH RECEIPTS



NOTE: Data are aggregated over the past 12 months.