FEDERAL RESERVE BANK OF ST. LOUIS

Annual Report 2012

After the Fall

REBUILDING FAMILY BALANCE SHEETS,
REBUILDING THE ECONOMY

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FEDERAL RESERVE BANK OF ST. LOUIS

Annual Report

for the year 2012

Published May 2013

Table of Contents

Read our financial statements on our web site at www.stlouisfed.org/ar
There, you can also find this entire report, along with a short video featuring key points in the essay and a Spanish version of the essay.

President's Message

The St. Louis Fed's New Center for Household Financial Stability

The financial crisis and Great Recession had profound effects not only on the U.S. economy as a whole, but also on individual households. For instance, the collapse of the housing bubble sharply reduced the wealth of many homeowners and led many into foreclosure. Moreover, the collapse of the bubble left households with much more debt (relative to their incomes) than they had intended. Consequently, household deleveraging, or paying down debt, has played a key role in the recent recession and the slow recovery.

It is important to learn more about the link between households' balance sheets (their savings, assets, debts and net worth, as distinct from wages and income) and the overall performance of the U.S. economy, as well as the link between balance sheets and the stability and upward mobility of families.

For this reason, we are pleased to announce the creation at the St. Louis Fed of the Center for Household Financial Stability, which is dedicated to further research on household balance sheets—their status and overall health, why they matter for families and the economy, and the best approaches for strengthening them. Information on the center and its team members can be found at www.stlouisfed.org/hfs

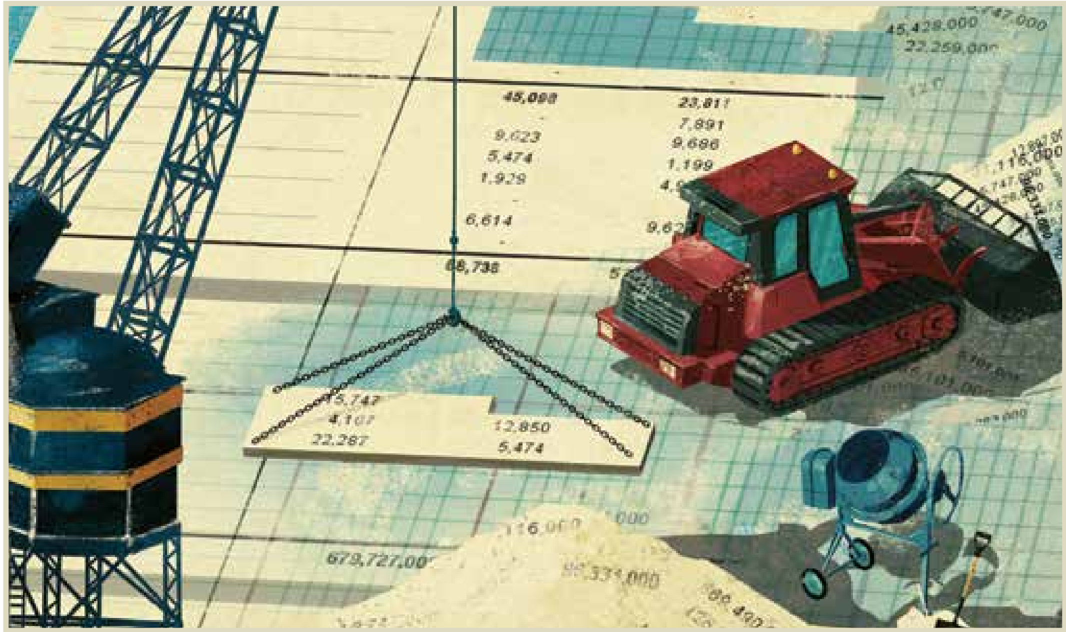
This year's annual report essay features some of the center's new research. Authors Ray Boshara and Bill Emmons find that while many Americans lost wealth during the Great Recession, younger, less-educated and nonwhite families lost the greatest percentage of their wealth. According to the analysis, these subgroups had higher than average concentrations of their wealth in housing and more debt relative to their assets and income, meaning that the families most vulnerable to a deep recession often possessed the least healthy and riskiest balance sheets when the recession began. Boshara and Emmons also present evidence associating various levels of household balance-sheet health with college access and completion, upward economic mobility, and

financial stability, as well as research suggesting that both sides of a family's balance sheet—assets and liabilities—appear to impact spending and economic growth.

Many in the Federal Reserve System and in other circles have, of course, been studying consumer finance for many years. What the center hopes to offer is a conceptual framework and a common table to work together and learn about household balance sheets. The center also plans to publish research on household balance sheets, including the new two-page research briefs, *In the Balance*. In addition, the team is constructing a balance-sheet data clearinghouse; creating a new balance-sheet index to gauge the health of American households' balance sheets; and organizing research symposia, practitioner forums, a speaker series and other activities to understand family balance sheets and develop ideas on how to improve them.

Work is under way and the partnerships are forming with colleagues throughout the Federal Reserve System, as well as external researchers and others. As we learn more about how microeconomic activity affects the performance of the macroeconomy, this research could have important public-policy implications, including insights for monetary policy.

James Bullard
President and CEO

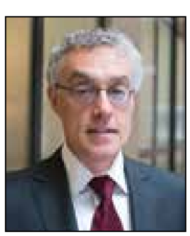


After the Fall

REBUILDING FAMILY BALANCE SHEETS, **REBUILDING** THE ECONOMY

By Ray Boshara and William Emmons

Ray Boshara is a senior adviser at the Federal Reserve Bank of St. Louis and is the director of the Center for Household Financial Stability. Prior to joining the Fed in 2011, Boshara was vice president of the New America Foundation, a think tank based in Washington, D.C. Over the past 20 years, Boshara has advised presidential candidates; the Bush, Clinton and Obama administrations; and leading policymakers worldwide. He has testified before the U.S. Congress several times, most recently before the Senate Banking Committee in October 2011. Boshara is a graduate of The Ohio State University, Yale Divinity School and the John F. Kennedy School of Government at Harvard.



William Emmons is the chief economist of the Center for Household Financial Stability. He is an assistant vice president and economist at the Federal Reserve Bank of St. Louis, where his areas of focus include household balance sheets and their relationship to the broader economy. He also speaks frequently on topics including banking, financial markets, financial regulation and the economy. Emmons received a Ph.D. in finance from the Kellogg School of Management at Northwestern University. He received bachelor's and master's degrees from the University of Illinois at Urbana-Champaign.

Americans, imbued with great expectations and optimism, set several records in the past decade in pursuit of the American dream of homeownership. We had both the highest rate of homeownership and the highest concentration of wealth in housing ever recorded. Millions, including the most economically vulnerable, assumed risky mortgages to purchase these homes and ran up their other debts as well, leading to a personal debt-to-income ratio of 133 percent, an all-time high. And easy access to credit, along with rapidly rising home values, let our personal savings rate plunge to its lowest level since the 1930s.

Leverage was the price we paid, and are still paying, for that American dream.

The risk of leverage, of course, is that it can multiply losses. As house prices fell, the **balance sheets** of economically fragile families were damaged. And while **household** balance sheets have improved in the past few years—families are rebuilding their savings and paying down their debts—balance sheets have not yet fully rebounded. We estimate that only about 45 percent of the average inflation-adjusted household wealth that was lost since the onset of the downturn in 2007 has been recovered. (See sidebar on Page 14.)

In this essay, we present new research regarding the damage to household balance sheets resulting from the Great Recession of 2007-09. Specifically, we show which demographic groups lost the most wealth following the recession, and we illustrate how economically vulnerable groups possessed especially risky balance sheets going into the crisis. We then address the importance of balance-sheet health at the micro level—that is, the importance of sound financial footing to families. Finally, we review research on the importance of healthy household balance sheets to the economy, and we briefly convey our future research plans on household balance sheets.

The Financial Crisis and the Impact on Households

Household balance sheets were severely affected during the financial crisis and ensuing recession. According to the Federal Reserve's triennial Survey of Consumer Finances (SCF)—the most comprehensive examination of household balance sheets—average household wealth declined 15 percent between 2007 and

Glossary

In this column are definitions of terms that are highlighted in bold in the text.

Leverage: In a qualitative sense, leverage refers to the degree to which a family's assets are financed with debt. In a quantitative sense, leverage is defined in this article as the ratio or percent of a family's debt relative to its assets.

Balance sheet: The financial accounting for an economic unit's financial and tangible assets and its liabilities. A balance sheet consists of two columns, containing all assets on the left-hand side and all liabilities on the right-hand side. The difference between the value of assets and liabilities is defined as net worth, or wealth. Net worth can be positive or negative.

Household: The U.S. Census Bureau defines a household as consisting of all the people who occupy a housing unit. (See "family," too.) A house, an apartment or other group of rooms, or a single room, is regarded as a housing unit when it is occupied or intended for occupancy as separate living quarters, that is, when the occupants do not live with any other persons in the structure and there is direct access from the outside or through a common hall. Because the definitions of family and household are very similar, we use the terms interchangeably in the text.

A household includes the related family members and all the unrelated people, if any, such as lodgers, foster children, wards or employees who share the housing unit. A person living alone in a housing unit, or a group of unrelated people sharing a housing unit, such as partners or roomers, is also counted as a household. The count of households excludes group quarters.

Median: The number that ranks precisely in the middle of a set of numbers arranged in order of magnitude. If the set of numbers has an even number of members, the median is the average of the two numbers that are closest to the middle of the ranking. In contrast, the **mean** is the **average** value of a set of numbers divided by the number of members in the set.

Reverse causation: A relationship between two variables, each of which may be important in explaining the other, rather than one being clearly causal with respect to the other. For example, income and marital status may be subject to reverse causation. Having a high income may increase the chance that an individual is married, but being married also might contribute to an individual's having a higher income. Thus, the causal relationship between the variables is ambiguous. Demographic variables such as age and race or ethnicity are not subject to reverse causation in the same way. Being a minority may reduce a family's chance of being a homeowner, due to discrimination in housing or mortgage markets, but not being a homeowner does not "cause" minority status. Causation clearly is one-way only, if it exists.

Human capital: A concept meant to capture the potential earning power of an individual. Unlike physical capital, such as a machine, human capital cannot be measured precisely because it is not legal to buy and sell financial claims on a person's future earnings. The concept is useful, nonetheless, to facilitate discussions of why people make investments in education and what financial benefits this investment might generate.

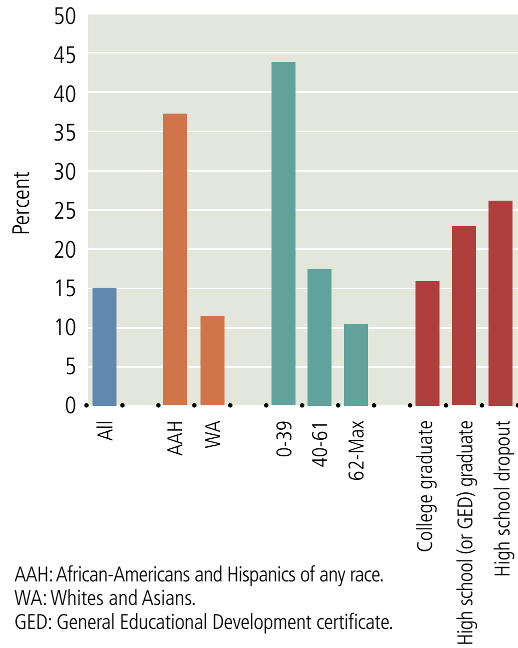
2010, while **median** household wealth dropped 39 percent.

More important, however, we must understand who lost wealth and why. Accordingly, we focus on families grouped by age, educational attainment, and race or ethnicity—demographic and other "exogenous" dimensions that are reliably measured, that are not subject to choice or random variation over time, and that are not difficult to interpret due to potential **reverse causation.**

Although many subgroups experienced large declines, the Fed's survey suggests that families that were younger, that had less than a college education and/or were members of a historically disadvantaged minority group (African-Americans or Hispanics of any race) suffered particularly large wealth losses (Figure 1).[1]

FIGURE 1

Percentage Losses in Mean Net Worth 2007-2010



AAH: African-Americans and Hispanics of any race.
WA: Whites and Asians.
GED: General Educational Development certificate.

SOURCE: Fed's Survey of Consumer Finances, 2007 and 2010.

Even before the crisis, younger, less-educated and historically disadvantaged minority families were known to be among the most economically vulnerable groups because of the particular occupations and sectors in which they were overrepresented, such as low-wage service-sector jobs and construction. What was not well-known—but which we document here—is that families in these economically vulnerable groups often also had very risky balance sheets going into the crisis. Our research suggests that both economic vulnerability and risky financial choices may stem from one or more common causes, including low levels of **human capital,** relative youth and inexperience, as well as the legacy of discrimination in education, employment, housing and credit markets. As we show later, these groups experienced the most-acute balance-sheet "failures"—high concentrations of wealth in housing and high levels of debt.

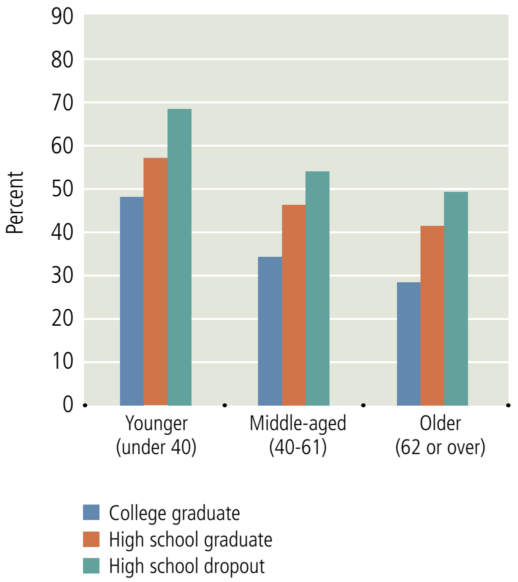
Large Portfolio Concentrations in Housing before the Crash

Housing represented a relatively large share of total **assets** among economically vulnerable groups (Figures 2 and 3). Figure 2 shows the average share of total assets held in the form of residential real estate in 2007 by each of the nine white and Asian subgroups; Figure 3 shows the same information for the nine subgroups of blacks and Hispanics.

Among white and Asian families, the pattern of asset concentration in housing along both age and educational-attainment dimensions is remarkably clear. The younger the **family** and the lower the level of educational attainment—that is, the more economically vulnerable the family—

FIGURE 2

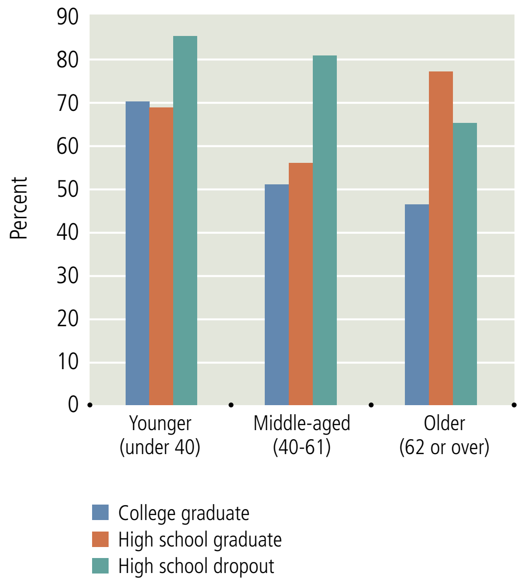
Residential Real-Estate Portfolio Shares in 2007 among Whites and Asians



SOURCE: Fed's Survey of Consumer Finances, 2007.

FIGURE 3

Residential Real-Estate Portfolio Shares in 2007 among African-Americans and Hispanics



SOURCE: Fed's Survey of Consumer Finances, 2007.

the higher its average housing concentration. The difference in housing portfolio shares between the economically strongest subgroup (older college-educated families) and the economically weakest (younger high school dropouts) is an enormous 41 percentage points, making the latter group much more vulnerable to a housing-market decline. The high average real-estate share in total assets among all white and Asian high school dropouts as a group is even more striking when considering that the homeownership rate is relatively low in this group—52 percent in 2007 vs. 90 percent among older college grads. Said differently, if younger high school dropouts have any assets of significance, they are likely to be in the form of a house.

The age-education pattern for blacks and Hispanics is very similar to that for whites and Asians, albeit at uniformly higher levels (Figure 3). With a few slight exceptions, the general principles enunciated earlier hold here, too. The younger and the less-educated the family, the higher the average portfolio concentration in housing. The very low level of homeownership in 2007 among younger high school dropouts, 24 percent, makes the group's 86 percent housing share of total assets all the more remarkable. Comparing Figures 2 and 3, it is clear that the third dimension of economic vulnerability—belonging to a historically disadvantaged minority group—also was strongly predictive of a relatively high exposure to housing risk.

High Levels of Household Debt

Economically vulnerable families generally had higher balance-sheet leverage, which meant that any decline in the value of their assets was multiplied into a

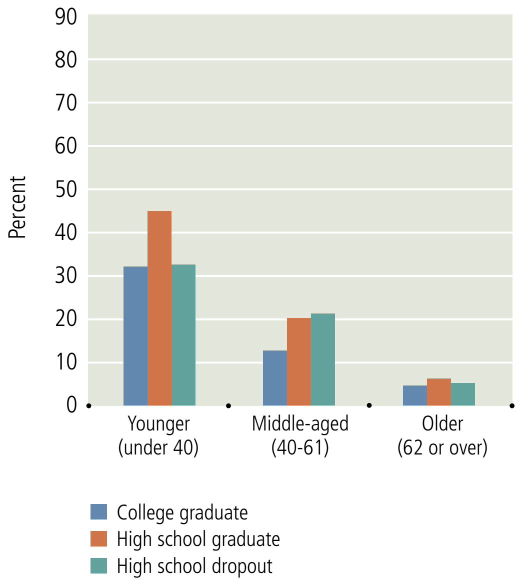
Assets: Tangible or intangible property owned by a family. Tangible assets include household durable goods, such as automobiles and home furnishings, and real estate, including a primary residence, vacation residences and investment real estate. Intangible assets include financial assets such as bank deposits, bonds, stocks, mutual funds, the cash value of life insurance and pension entitlements (although not anticipated Social Security benefits, which are not legally owned by the beneficiary).

Family: We follow the definition of "family" used by Bricker et al. in discussing the Federal Reserve's Survey of Consumer Finances. (See "household," too.) A household unit is divided into a "primary economic unit" (PEU)—the family—and everyone else in the household. The PEU (family) is intended to be the economically dominant single person or couple (whether married or living together as partners) and all other persons in the household who are financially interdependent with that economically dominant person or couple. Because the definitions of family and household are very similar, we use the terms interchangeably in the text.

Family head: The head of the primary economic unit (PEU) or family. (See definition of "family.") Designation of a family head is not meant to convey a judgment about how an individual family is structured but as a means of organizing the data consistently. If a couple is economically dominant in the PEU, the head is the male in a mixed-sex couple or the older person in a same-sex couple. If a single person is economically dominant, that person is designated as the family head.

FIGURE 4

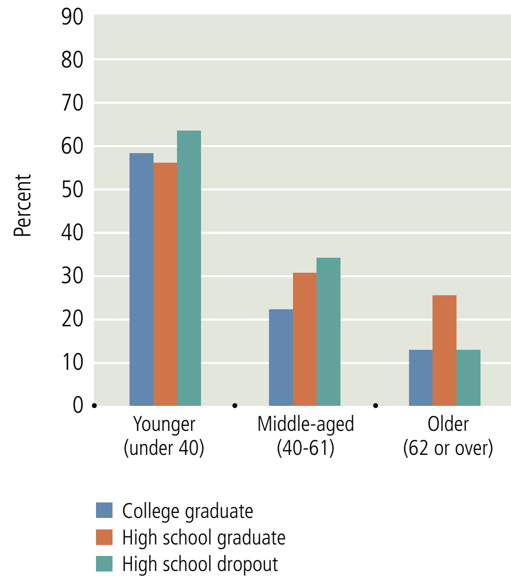
Ratio of Total Debt to Total Assets in 2007 among Whites and Asians



SOURCE: Fed's Survey of Consumer Finances, 2007.

FIGURE 5

Ratio of Total Debt to Total Assets in 2007 among African-Americans and Hispanics



SOURCE: Fed's Survey of Consumer Finances, 2007.

proportionately larger decline in the family's **net worth** (Figures 4 and 5). A high concentration in housing need not lead to financial distress in a housing market crash if the owner has sufficient net assets (including homeowners' equity) and sufficient cash flow after debt service to meet other needs. If the owner doesn't have sufficient assets or cash flow, however, the family may default on its debts, losing a house, a car and access to additional credit on good terms.

The SCF data reveal that economically vulnerable families often financed their housing investments in a risky way with lots of debt and little margin for error. That is, among the subgroups we consider, those who are economically most vulnerable have, on average, the highest concentrations in housing and the most debt, whether it is measured against assets or income.

Figure 4 shows that younger and less-educated white and Asian families tended to have higher debt-to-asset ratios in 2007 than older and better-educated families. (A similar pattern existed for debt-to-income ratios.) It appears that relative youth is the strongest influence on average debt ratios, while the effect of educational attainment is not as strong or clear-cut.

The dominant influence of age on balance-sheet leverage is evident also in Figure 5, which depicts debt-to-asset ratios for nine black and Hispanic subgroups. Educational attainment also may matter, as the debt ratios of all dropout groups were higher than those of college-graduate groups of the same age. Comparing Figures 4 and 5, race or ethnicity also emerges as a powerful predictor of debt ratios, as every black or Hispanic subgroup had more debt than the corresponding white or

TABLE 1

The Link between Saving and Graduating from College

Savings Level	No Savings Account	Only Basic Savings	School Savings <$1	School Savings $1-$499	School Savings >$500
% Who Graduated from College—All Children	14%	26%	30%	31%	49%
% Who Graduated from College—Lower-Income Children	5%	9%	13%	25%	33%

SOURCE: Elliott, Nam and Song.

Asian group. Illustrating the point made above, historically disadvantaged minority families tended to finance their assets with more debt than did white and Asian families, which amplified the effects of high housing concentrations on net-worth declines during the crisis.

Why Damage to Balance Sheets Matters for Families

To illustrate how balance sheets matter for families, let us look at some postsecondary education, economic **mobility** and family stability outcomes.

College outcomes. The economics literature is rich with data about the role that parental education and income levels, neighborhoods, high schools, race, test scores and other factors play in predicting college success, yet only recently have scholars closely examined how various balance-sheet components drive college access and completion.

William Elliott III, a leading researcher in this area, found that among youth who intend to go to college, those with savings accounts in their own name, regardless of the amount, were nearly seven times more likely to attend college than youth lacking accounts. Elliott also found other powerful correlations between savings and postsecondary education outcomes—namely, that higher levels of savings are associated with higher rates of college graduation, even for lower-income children (Table 1).

No doubt these modest amounts of savings would not be enough to finance a college education, but the research suggests that dedicated college savings forge what is called a "college-bound identity," which appears to extend a child's planning horizon and spur behavior changes associated with college success, such as selecting more challenging classes and prompting parental engagement.

Levels of debt appear to play a role, too, in college success. Scholars Michael Sherraden and Min Zhan found that **liquid** and **nonliquid assets** are positively associated with later college completion, while **unsecured debt** is negatively associated with college completion. And researchers Elliott and Ilsung Nam found that student loans may reduce net worth later in life: Households with a four-year college graduate and outstanding student loans have $185,996 less net worth than house-

Net worth: A family's assets minus its liabilities. It is a synonym for **wealth** and is likely to be positively related to a family's financial stability.

Mobility: Movement up or down in a family's or individual's level or ranking on an economic or financial measure. Absolute mobility refers to a change in an individual's level of income, for example, regardless of any changes in other individuals' incomes. Relative mobility refers to changes in an individual's ranking among other individuals on some measure.

Liquid assets: Financial assets that can be sold or traded relatively easily and at little cost. These include bank deposits, stocks, bonds and mutual funds.

Nonliquid assets: Financial assets that cannot be sold or traded easily and at little cost, such as pension assets, as well as durable goods, business assets and real estate.

Unsecured debt: A loan that does not require the borrower to pledge collateral, such as a house or an automobile, to the lender. Examples include credit-card loans and student loans.

Economically vulnerable families that diversify their assets beyond housing achieve greater financial stability.

holds with a four-year college graduate but no outstanding student loans. The authors speculate that student loans may push down credit scores, reduce access to credit, and consume disposable income and savings—thus suppressing the acquisition of other productive assets and investments (for example, homes, businesses, retirement accounts) that typically lead to the building of net worth.[2]

Economic mobility outcomes. As with education, research on economic mobility has largely focused on the role of parents, earnings, education and other factors in predicting whether individuals and their children move up (or down) the economic ladder. The role of savings, assets and net worth has been, until recently, relatively unexamined.

Research thus far suggests that balance-sheet factors generate upward mobility. Heritage Foundation scholars found that financial capital, family structure and educational attainment are the three best predictors of economic mobility in America—with financial capital (savings and assets) the strongest predictor. Similarly, sociologist Dalton Conley reports, "While race, income, job status and net worth all tend to vary hand-in-hand, careful statistical parsing shows that it is really net worth that drives opportunity for the next generation." Further, a study published by Pew's Economic Mobility Project looked at the role of savings in economic mobility; the study found that among adults in the bottom income quartile from 1984 to 1989, 34 percent of those with low initial savings left the bottom within the period between 2003 and 2005, but 55 percent of those with high initial savings left the bottom during that period.

Thomas Shapiro, an expert on the racial dimensions of wealth, interviewed nearly 200 families throughout the U.S. and examined national survey data with 10,000 families. He found that families with private wealth are able to move up from generation to generation, relocating to safer communities with better schools and passing along the accompanying advantages to their children. At the same time, those families without wealth remain trapped in communities that do not allow them to move up, no matter how hard they work. Shapiro also reported that the presence of even small amounts of wealth at key moments in life—at the brink of launching a small business, starting college, purchasing a home, or the onset of unemployment or bankruptcy—can have a "transformative" effect on the life course.

Financial stability outcomes. Finally, a growing body of research shows that healthy balance sheets, and not just income, matter for basic **household financial stability**. Urban Institute researchers found that households that are "liquid-asset poor" are two to three times more likely than those with liquid assets to experience "material hardship"—being unable to pay a bill or skipping necessary spending on food or health care—after a job loss, health emergency, death in the family or other adverse event.

Experiments also show that households with savings may have fewer day-to-day financial worries, allowing them to be better planners and more future-oriented in their economic and social decision-making. Conversely, the lack of savings and assets can hurt future consumption and security: Seventy percent of workers report withdrawing money from college and retirement accounts in order to make ends meet, and these withdrawals will likely lead to losses of wealth in future years.

Finally, researchers Tammy Leonard and Wenhua Di report that lower- and moderate-income families that invest in productive assets and reduce their debts were more likely to achieve and maintain financial stability (defined by them as a family having enough savings and assets on which to survive for three months). Leonard and Di define "productive" assets as businesses, nonhousing real estate, stocks or bonds—which underscores a key insight from our own research: Economically vulnerable families that diversify their assets beyond housing achieve greater financial stability.

Why Damage to Balance Sheets Matters for the Economy

Prior to the Great Recession, many respected economists were not worried about the management of household balance sheets and the role balance sheets played in macroeconomic performance. This may have been due to the lack of recent historical evidence suggesting that household balance-sheet failures, such as high concentrations in housing or high levels of debt, actually harmed the economy. At the same time, many economists believed that consumer credit markets were reasonably competitive and efficient so that most households' balance sheets were in pretty good shape. In short, policymakers thought that any household balance-sheet problems would largely work themselves out on their own without harming the economy. If some families reduced their spending while they struggled with weak balance sheets, others likely would take up the slack, contributing to reasonably steady overall growth.

It has come as somewhat of a surprise, therefore, that many economists now are calling the Great Recession of 2007-09 a **"balance-sheet recession"** and that balance-sheet failures of the type described above are seen as important contributors to the downturn and weak recovery. Two key aspects of the current economic cycle explain this description: (1) wealth effects and (2) defaults and **deleveraging**.

Wealth effects. Economists long have sought to estimate how much a one-time, unexpected change in the value of households' assets might affect their spending, both in the short term and in the long term—what are called "wealth effects." Economists Karl Case, John Quigley and Robert Shiller found, first, that housing-wealth effects are much larger than financial-wealth effects (stocks, bonds, mutual funds). They estimated that, in recent years, an unexpected, one-time increase of 1 percent in housing wealth led to an increase of 0.08 to 0.12 percent in consumer spending each year afterward.[3] In contrast, the same increase in financial wealth was followed by a less than 0.03 percent permanent increase in consumer spending.

Second, they found that consumer spending reacts much more strongly to declines than increases in household wealth. In particular, an unexpected decline of 1 percent in house prices results in about a 0.10 percent permanent decline in consumer spending, while a 1 percent increase in house prices results in only about a 0.03 percent increase in consumer

Household financial stability: A concept meant to express the degree to which a family's financial situation is stable, sustainable and resilient to temporary shocks and setbacks. There is no precise measure of household financial stability, but it is likely to be positively related to a family's net worth, its stock of liquid assets, and its anticipation of cash flows from paid employment, trust funds, pensions, gifts or other sources.

Balance-sheet recession: A recession that is caused by or is made worse by many weak balance sheets in one or more sectors of the economy. A weak balance sheet, in turn, is one that has a low or negative ratio of net worth to total assets compared to historical experience.

Deleveraging: Reducing debt or a debt ratio (typically relative to assets or income) either by paying off debt, increasing debt more slowly than assets, if assets are increasing, or increasing debt more slowly than income, if income is increasing. Deleveraging may be voluntary or involuntary from the perspective of the borrower.

spending.[4] Applying these estimates to the actual declines in housing wealth experienced between 2005 and 2009—about 35 percent after inflation adjustment—the authors estimate that consumer spending ended up on a path about 3.5 percent lower than otherwise would have been expected, or roughly $350 billion less than it would have been in 2010.

Based in part on studies like this, some macroeconomists analyzing the Great Recession and subsequent weak recovery believe that negative household wealth effects played an important role.[5] They describe the huge declines in asset values and net worth as one of the shocks that threw the economy into recession. Skeptics might argue that the asset-price declines themselves merely reflect anticipated deterioration elsewhere in the economy and, therefore, are not themselves fundamental causes of the downturn. These questions merit further study.

Defaults and deleveraging. There are two distinct but related ways in which the **liability** side of household balance sheets may have harmed the economy in recent years—namely, through defaults and deleveraging.

Defaults that discharge debt in excess of acquired collateral value result in a loss to the lenders; it is the concentration of losses at highly leveraged financial institutions that appears to give loan defaults their macroeconomic significance. An early, and remarkably accurate, analysis of likely mortgage defaults and their effects on financial institutions, mortgage lending and the economy as a whole by economist Jan Hatzius predicted a huge reduction of 2.6 percentage points in real GDP growth in both 2008 and 2009 from a baseline of about 2.5 percent annual growth. Thus, Hatzius predicted roughly zero growth for the two years. As it turned out, real GDP fell 0.3 and 3.1 percent in those years, somewhat worse than he predicted.

Another body of research suggesting that large-scale defaults can have significant harmful effects on economic growth includes the work of Carmen Reinhart and Kenneth Rogoff, well-known for their book, *This Time Is Different.* They studied both banking crises and government debt defaults in many countries over a long time span and concluded that losses on loans or bonds can amplify economic weaknesses when the losses damage financial intermediaries, impairing the economy's credit-creation mechanisms.

There is a substantial amount of empirical evidence documenting the contours and extent of household "deleveraging"—households paying down their debts and rebuilding their savings—in the wake of the crisis. The International Monetary Fund combined an examination of current levels of household debt in 36 countries with an analysis of previous episodes of excessive household debt. The IMF confirmed that household debt can become so large and burdensome that it hampers economic growth; the organization also concluded that policy responses that involve debt restructuring can alleviate some of the burdens on the economy. In earlier work, economists at the McKinsey management consulting firm stressed the need for countries to avoid the buildup of excessive household debt in the first place.[6]

Economists Atif Mian, Amir Sufi and their co-authors wrote a series of papers documenting the cross-sectional diversity of the housing and credit boom and bust at the county level. They showed that large precrisis increases in debt-to-income ratios were strong predictors of early and sharp corrections in house prices. Soon thereafter, those counties with the sharpest declines in house prices also experienced surges in unemployment and mortgage defaults, while auto sales and building permits plunged. Mian and Sufi also estimated that roughly two out of every three (4 million out of 6.2 million) jobs lost between March 2007 and March 2009 were indirectly attributable to weak household balance sheets.

Further, economists Karen Dynan and Wendy Edelberg found that individual households that had high leverage before the crash subsequently decreased their spending more than low-leverage households. A significant contribution of Dynan and Edelberg's work was to disentangle the two sides of households' balance sheets in harming the broader economy.[7] They document an independent debt-overhang effect: Households with greater leverage decreased spending more, even when holding constant the change in net worth across different households.

Summary

Our examination of household balance sheets shows that while many Americans lost wealth because of the Great Recession, younger, less-educated and African-American and Hispanic families lost the most. We also found that these subgroups had both higher-than-average concentrations of their wealth in housing and higher debt-to-asset ratios than less economically vulnerable groups. Thus, the very families most exposed to the economic fallout of a deep recession—fallout that came in the form of job loss or reduced income—possessed the weakest and riskiest balance sheets.

We also presented evidence suggesting that it matters—for both family and economic growth outcomes—whether households have healthy or unhealthy balance sheets. Surveying the research, we presented evidence associating various levels of household balance-sheet health with college access and completion, upward economic mobility, and financial stability. And the research suggests that both the asset-side wealth effect and the liability-side deleveraging effect appear to be important contributors to the overall household balance-sheet effects on spending and the economy.

Looking Ahead

Examining the balance sheets of American households is relatively new territory for researchers and policymakers who are concerned about the economic health of families and our nation. Much remains to be learned, including a better understanding of the links between microeconomic activity and macroeconomic performance.

In the months and years ahead, the St. Louis Fed's newly launched Center for Household Financial Stability will take on the challenge of this important area of study. Instead of reacting to the last decade's balance-sheet failures—high levels of debts, low levels of savings and insufficient assets beyond homeownership—we aim to proactively assess and monitor the

continued on Page 15

Liabilities: Amounts owed by a family to creditors. Examples include mortgages, auto loans, credit-card debts, student loans, security credit and taxes payable.

Additional terms

Mortgage debt: Any debt secured by real estate, including first-lien mortgages, junior-lien mortgages, fixed-rate and variable-rate loans, balances owed on home-equity lines of credit (HELOCs), and home-equity loans.

Nonmortgage debt: Any debt not secured by real estate, including credit-card debt, auto debt, student loans and other personal loans.

How Much Household Wealth Has Been Recovered?

The Federal Reserve reported March 7, 2013, that aggregate household net worth at the end of 2012 was $66.1 trillion, nearly back to its precrisis peak of $67.4 trillion, reached at the end of the third quarter of 2007. After falling to $51.4 trillion at the end of the first quarter of 2009, the subsequent increase of $14.7 trillion through the end of last year represented a recovery of 91 percent of the losses suffered. Does this mean that the financial damage of the financial crisis and economic recession largely has been repaired?

The simple metric of aggregate household net worth is misleading for at least three reasons. First, the effect of inflation is ignored. Consumer prices increased about 2 percent per year in the five and one-quarter years since the third quarter of 2007, reducing the purchasing power of a dollar by a total of about 10 percent. Therefore, a return to the previous nominal dollar peak does not mean that a given amount of wealth could buy as much as before.

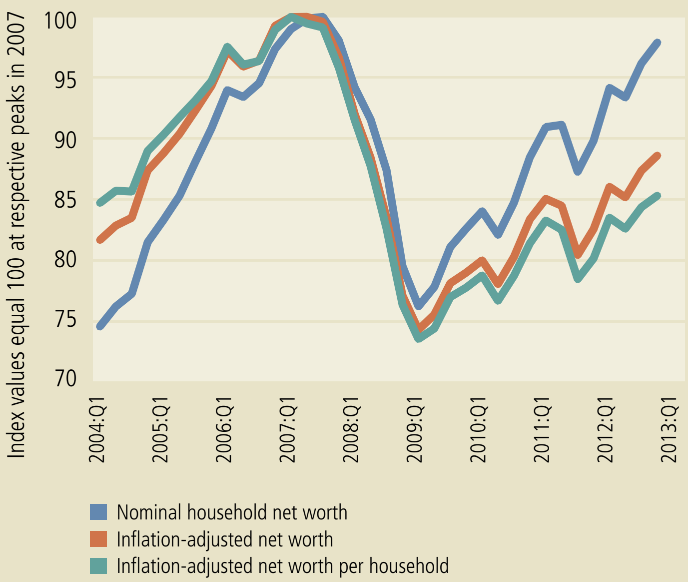
Second, simple aggregate net worth does not adjust for population growth. The number of households increased by about 3.8 million between the third quarter of 2007 and the end of 2012, or about 3.4 percent. The wealth of all American households now is shared by more families than before.

Third, the recovery of wealth has not been uniform across families. Of the total recovery of $14.7 trillion between the first quarter of 2009 and the fourth quarter of 2012, $9.1 trillion, or 62 percent, of the gain was due to higher stock-market wealth. Stock wealth is unevenly held, with the vast majority of stocks owned by a relatively small number of wealthy families. Thus, most families have recovered much less than the average amount.

The figure and table provide details of three different measures of household net worth—aggregate nominal net worth, as reported in the Flow of Funds accounts; aggregate inflation-adjusted net worth; and average inflation-adjusted net worth per household, a household-level measure consistent with the data format in the Survey of Consumer Finances as discussed in this article.

Clearly, the 91 percent recovery of wealth losses portrayed by the aggregate nominal measure paints a different picture than the 45 percent recovery of wealth losses indicated by the average inflation-adjusted household measure. Considering the uneven recovery of wealth across households, a conclusion that the financial damage of the crisis and recession largely has been repaired is not justified.

Household Net Worth: Nominal, Inflation-Adjusted and Inflation-Adjusted per Household



Alternative Measures of Wealth Loss and Recovery

	Peak-to-Trough Percent Change	Trough-to-2012:Q4 Percent Change	Percent Recovery by 2012:Q4 of Peak-to-Trough Decline
1) Nominal net worth (reported in Flow of Funds)	–24%	29%	91%
2) Inflation-adjusted net worth (calculated as [1] deflated by Personal Consumption Expenditures price index)	–26%	19%	56%
3) Inflation-adjusted net worth per household (calculated as [2] adjusted for population growth; corresponds to mean value reported in Survey of Consumer Finances)	–27%	16%	45%

SOURCES FOR CHART AND TABLE: Federal Reserve Flow of Funds accounts, Bureau of Economic Analysis and Census Bureau.

continued from Page 13

health of household balance sheets, including the creation of new data warehouses and indexes. Along with our partners in the Federal Reserve System and beyond, we are excited about our new research on the health and consequences of household balance sheets for both struggling American families and the recovering economy.

Bryan J. Noeth, a policy analyst at the Center for Household Financial Stability, provided valuable research assistance.

Center for **HOUSEHOLD FINANCIAL STABILITY**

Researching Family Balance Sheets to Strengthen Families and the Economy | stlouisfed.org/hfs

The Center for Household Financial Stability will focus on rebuilding the household balance sheets of struggling American families. The HFS team will be conducting and publishing research on key balance-sheet issues, organizing research conferences and symposia, establishing a web-based research clearinghouse, developing a Household Balance Sheet Index and organizing forums to better understand the balance-sheet issues affecting struggling families and communities.

ENDNOTES

1 Notice that the percent declines in average net worth between 2007 and 2010 for each of the education groups is larger than the overall average decline. This anomaly is due to changes in the number of families in each category and differences in the average wealth losses in those categories. To illustrate how changing cell sizes can produce individual category percentage declines that all are larger than the overall decline, consider a simple example. Suppose that, in 2007, you owned two cats and two dogs. The average weight of your cats was 5 pounds and the average weight of your dogs was 10 pounds; so, the average weight of your pets was 7½ pounds. Suppose that, in 2010, you had one 4-pound cat and three dogs with an average weight of 9 pounds. Comparing 2007 and 2010, the average weight of the cats you owned decreased 20 percent, and the average weight of your dogs decreased 10 percent. But the average weight of your pets actually increased 3⅓ percent, from 7½ to 7¾ pounds. In terms of wealth changes among families of different education levels, less-than-high-school families with relatively large average losses (analogous to cats) decreased as a share of the sample, while college-educated families with relatively small average losses (analogous to dogs) increased as a share of the sample. The number of families with college degrees increased between 2007 and 2010, from 35 to 37 percent of the sample, while the number of families with less than a high school degree declined from 14 to 12 percent. The number of high school-degree families stayed roughly the same, at about 51 percent.

2 Researchers at the Federal Reserve Bank of New York found that young people with student debt saw bigger declines in homeownership and vehicle purchases since 2008 than young people without student debt. See Brown and Caldwell.

3 See Table 7 in Case, Quigley and Shiller.

4 See Table 8 in Case, Quigley and Shiller.

5 For example, Federal Reserve Bank of St. Louis President James Bullard observed, "A better interpretation of the behavior of U.S. real GDP over the last five years may be that the economy was disrupted by a permanent, one-time shock to wealth." See Bullard. Federal Reserve Gov. Sarah Bloom Raskin highlighted the importance of wealth inequality for understanding the recession. See Raskin.

6 See Croxson et al.

7 The issue is that Mian and Sufi cannot rule out the possibility that the boom and bust together represented a huge positive wealth effect followed by an equally large negative wealth effect; in other words, they cannot verify an independent role for the liability side of the balance sheet in propagating the economic shock because they do not observe individual households' balance sheets.

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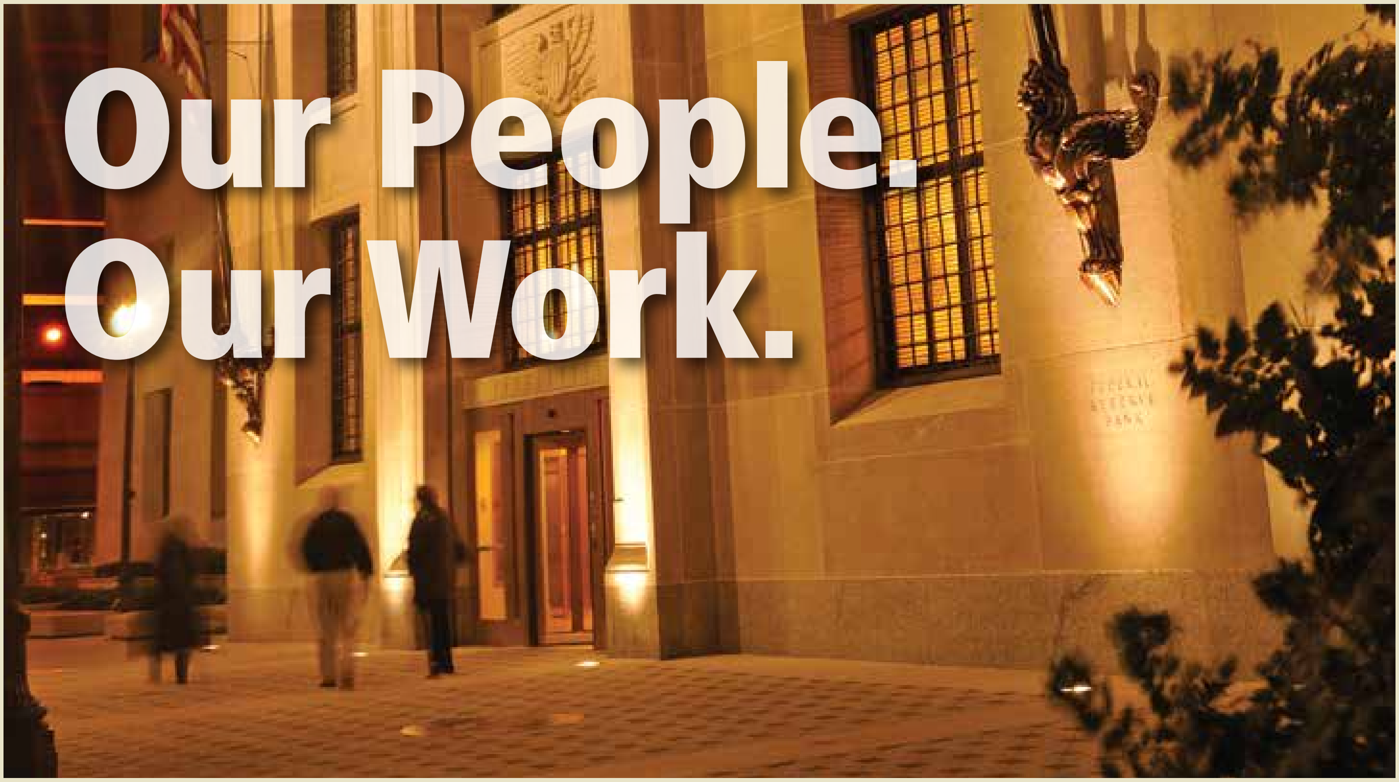
Our People. Our Work.



1,003 employees, the majority of whom work at the District's headquarters in St. Louis, with staff also located at branches in Little Rock, Louisville and Memphis. All numbers in this section are for **2012.**

116 state-chartered banks were under our supervision. The St. Louis Fed also supervised **527 bank holding companies** and **21 savings and loan holding companies.**

Nearly **3 billion notes** (currency) handled by our Cash Operations department. As the bankers' bank, the St. Louis Fed received more than **39,000 deposits** and filled nearly **86,000 orders** for U.S. currency.

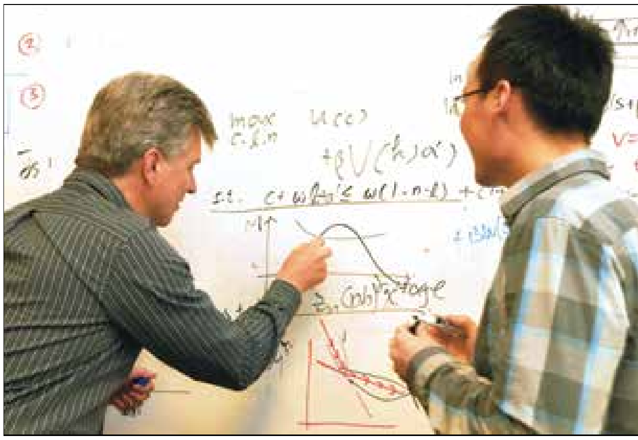
20,400 Twitter followers and **2,100 likes** on Facebook.

ecs® EMERGENCY COMMUNICATIONS SYSTEM

Six times, the Emergency Communications System was activated for weather emergencies, including Hurricane Sandy. The system, developed and run by the St. Louis Fed, is used by the Fed and by state banking departments to notify depository institutions of operational status in the event of natural or other disasters. More than **2,500 financial institutions** in **17 states** were registered in the system last year.

10,400 business leaders and members of the general public attended **169 speeches** given outside the Bank by Bank executives.

More than **$30,000 in donations** and **canned goods** raised by employees of the Bank in its annual drive—now in its 19th year—to benefit a local food bank.



The Bank's Research department is ranked:

- **No. 5** (out of 105) among central banks' research departments around the world,
- **No. 30** (out of 1,270) of all U.S. research institutions and
- **No. 46** (out of 6,062) of such institutions worldwide.

Based on RePEc/IDEAS rankings.

The Export Matchmaker Trade Fair & Conference at the Bank in October was co-sponsored by the Bank's Community Development department and by the U.S. Small Business Administration. More than **150 small businesses and export companies** sent representatives. The event was one of 70 for the department; they were attended by **6,000 people.** In addition, the department held more than **150 outreach meetings** with community-based organizations, municipal leaders, academics and financial institutions.

Teach Children to Save Day

Nearly 5,000 students in the St. Louis metropolitan area were taught the basics of saving during Teach Children to Save Day in April. Volunteers from the St. Louis Fed and commercial banks in the area brought the lessons to classrooms across the region.

Our Research department had **40 papers** either published or accepted in peer-reviewed journals.

ready.save.grow.

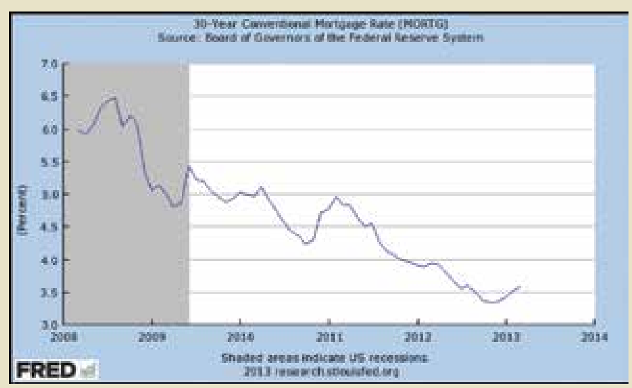
In March, the Treasury Relations and Support Office of the St. Louis Fed worked on Treasury's behalf to launch the *Ready.Save.Grow.* public education campaign to promote Treasury's vision of building a nation of savers and to encourage saving with Treasury securities. At the end of the year, *Ready.Save.Grow.* had **11,462 Facebook fans.**

More than **61,000 data series in FRED®**

(Federal Reserve Economic Data), our economics database that in 2012 was called

"the most amazing economics web site in the world."

Business Insider, 2012



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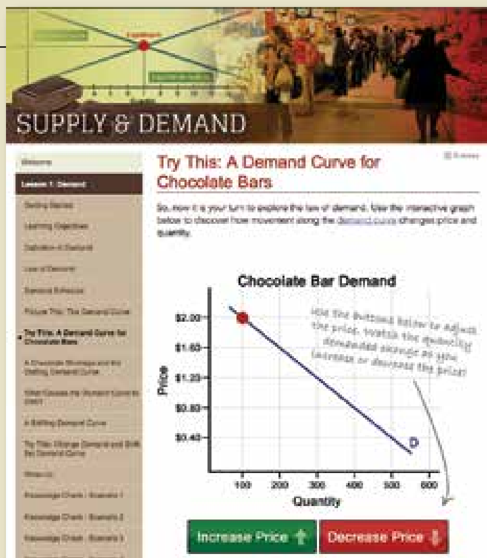
More than **11 million unique visitors** from **226 countries and territories** to the St. Louis Fed-hosted web sites of RePEc (Research Papers in Economics).

RePEc

... a trusted source for economic education

For the second year in a row, our Econ Ed department received the **Award of Excellence** from *Tech & Learning* magazine. The department was once again honored for its suite of online economic education tools for teachers.



399,330 enrollments of students in online courses related to economic and personal finance education.

248,000
downloads of lesson plans by teachers.

The St. Louis Fed's **Student Board of Directors,** new in 2012, serves as a bridge between St. Louis-area schools and the Fed. The dozen students meet every other month at the Fed to discuss issues related to economics and personal finance; they also listen to speakers on topics ranging from leadership development to career planning.

By the end of December, more than **$1.18 billion** in savings to taxpayers was achieved as a result of the Go Direct campaign, a Treasury initiative to convert federal benefit payments, like Social Security, to electronic delivery. The Treasury Relations and Support Office at the St. Louis Fed manages the Go Direct campaign. During 2012, the campaign helped convert **2,688,586 paper payments** to electronic delivery, with the total for the life of the campaign as of December 2012 at **8,786,810.**

Employees who belong to FEVR (Fed Employee Volunteer Resources) donate their time throughout the year to community-betterment initiatives. They collect school supplies for needy children, send care packages to troops overseas, mentor and tutor children and adults, and work in soup kitchens, to cite a few examples. Above, some members of the group took part in a community-wide effort to clean up trash at the confluence of the Missouri and Mississippi rivers near St. Louis last spring.

23 million pageviews
to the Bank's web sites.

28 summer interns. Their work at the Bank culminated in an Intern Expo, at which they showcased their projects to management.

The Community Development department's biennial Exploring Innovation Week attracted **300 people** to **five events** held in **four major cities** of the District. The events focused on entrepreneurship, urbanization, arts as an economic development tool, community development finance and "livability" issues.

17TH ANNUAL 2012 GREATER ST. LOUIS TOP 50 Businesses Shaping Our Future Awards

The Bank was named a **Top 50 Business** by the St. Louis Regional Chamber.

DIALOGUE WITH THE FED
Beyond Today's Financial Headlines

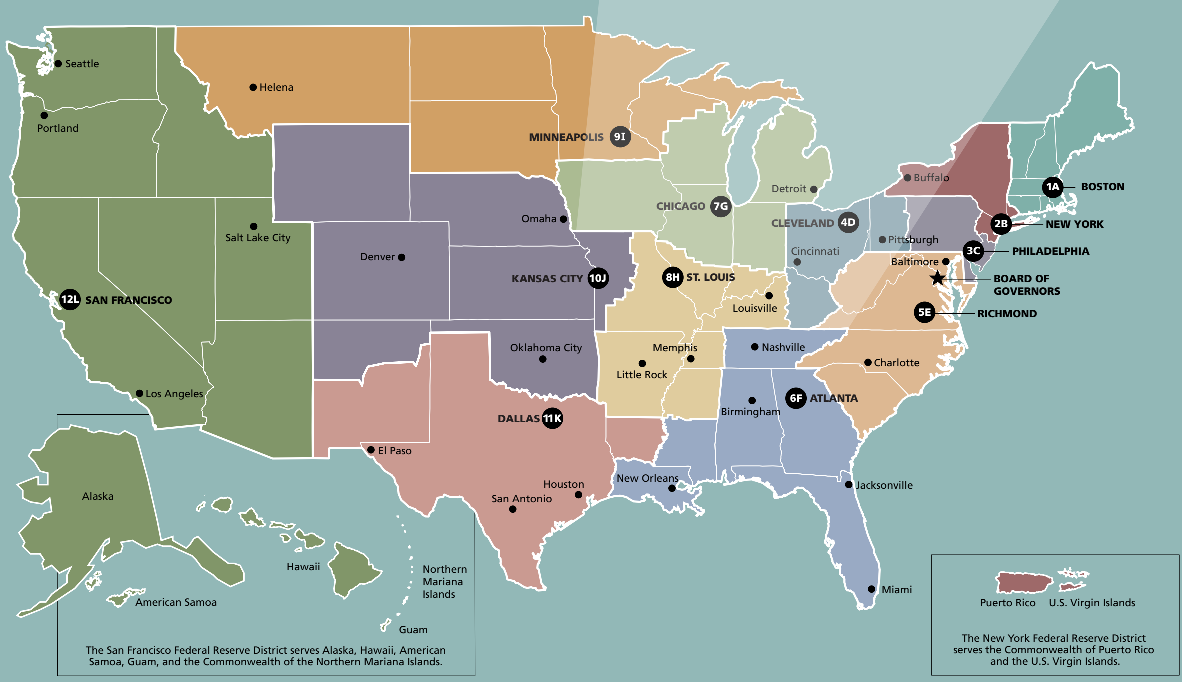
Six *Dialogue with the Fed* events, including one in Spanish, attended by more than **800 people** and watched by many more via webcast. The Dialogue series, begun in 2011, offers the general public an opportunity to discuss current financial and economic topics with Fed experts.

64,200 subscribers to our periodicals.

Our Leaders. Our Advisers.

The Federal Reserve's **decentralized** structure—the Board of Governors in Washington, D.C., and the 12 independent Reserve banks around the country—ensures that the economic conditions of communities and industries across the U.S. are taken into account in deciding monetary policy. The members of our boards of directors and of our advisory councils are among the many voices of **"Main Street"** that we listen to. On the following pages are current board members from each of the four offices of the St. Louis Fed: St. Louis, Little Rock, Louisville and Memphis. Members of our advisory councils are also listed, as are officers of the Bank. Finally, **we salute** those board members and advisory council members who have retired recently.

The Eighth Federal Reserve District is composed of four zones, each of which is centered around one of the four main cities: St. Louis, Little Rock, Louisville and Memphis.



The San Francisco Federal Reserve District serves Alaska, Hawaii, American Samoa, Guam, and the Commonwealth of the Northern Mariana Islands.

The New York Federal Reserve District serves the Commonwealth of Puerto Rico and the U.S. Virgin Islands.

Chairman's Message

"The St. Louis Fed remains a vibrant partner with its customers, the community and the country."

As the U.S. economy continues to slowly grow out of the depths of the 2007-2009 recession, I continue to be impressed with the vital role the Federal Reserve System plays in nurturing this healing process, a role best exemplified by the Federal Reserve Bank of St. Louis.

Foremost has been the implementation of a monetary policy that has restored liquidity to the markets and that has driven down interest rates in an effort to support investment and demand. Our president, James Bullard, has been a key contributor to this process, and his effectiveness has been enhanced by the insights of the Eighth District's impressive team of economists and analysts. The St. Louis Fed is an economic research powerhouse—highly ranked, not just in the Federal Reserve System but in the world. What better basis from which to guide monetary policy?

Explaining monetary policy, and how it works within the broader economy, is vital to the policy's effectiveness. Fortunately, the Eighth District is blessed with a group of dedicated professionals who are adept at communicating this Bank's role in shaping the economy. Assisting the president in his communication role, reaching out to business and community leaders, and implementing community-wide programs are just some of the functions of our outstanding public affairs organization.

Ensuring that the banking system is sound is yet another important job of the St. Louis Fed. We take our regulatory responsibilities seriously and are fortunate to have a best-in-class bank regulatory organization, one that not only regulates banks within the District but is a national leader in training other regulatory bodies.

Finally, the St. Louis Fed is the key coordinator of a range of services provided to the U.S. Department of the Treasury on behalf of the entire Federal Reserve System. Our leadership in this area has been outstanding, as evident by the extraordinary approval rankings from this key customer and by the expanded range of services the Federal Reserve System is providing to the Treasury.

The St. Louis Fed remains a vibrant partner with its customers, the community and the country. On behalf of the board of directors, whose job is oversight, I thank the Bank's executives for their outstanding leadership, and I thank all the Bank's colleagues for their dedication and effectiveness.

Sincerely,

Ward M. Klein
Chairman of the Board of Directors

St. Louis Board

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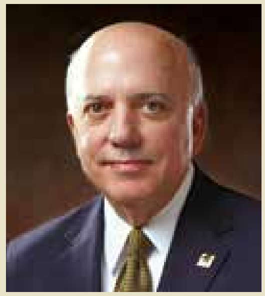

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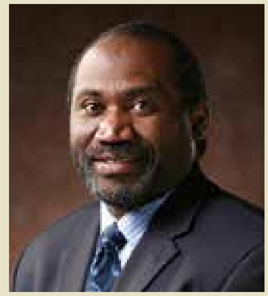

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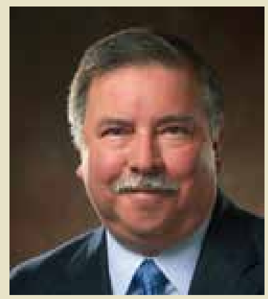

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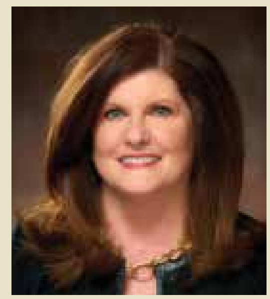

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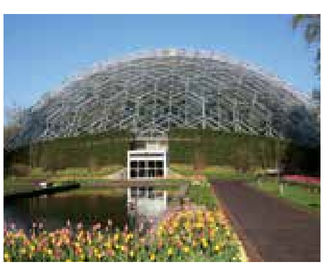

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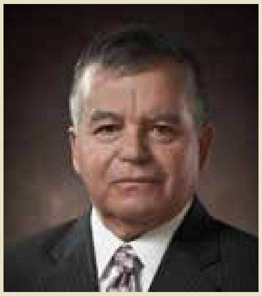

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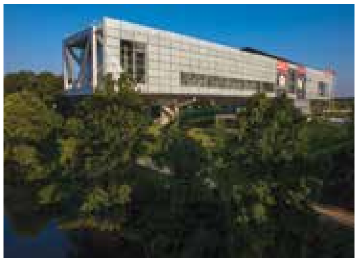

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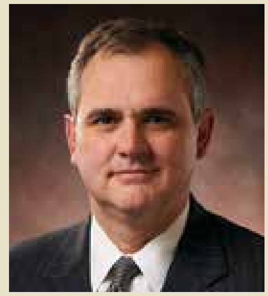

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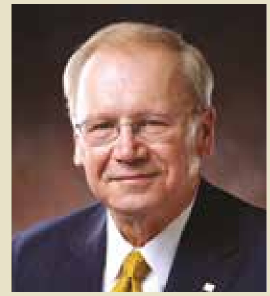

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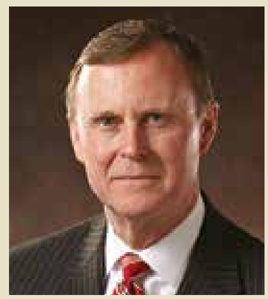

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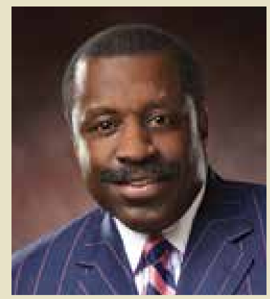

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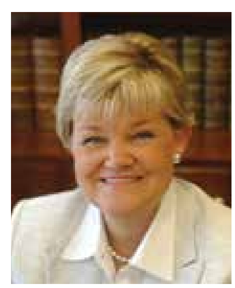

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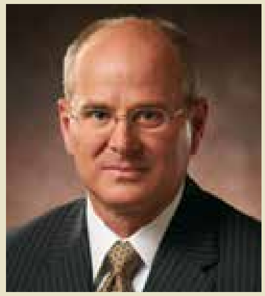
Commercial Bank and Trust Co.
Memphis, Tenn.

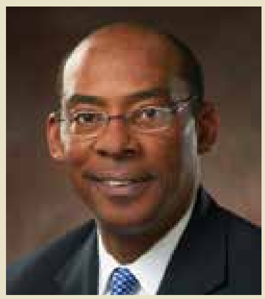


Mark P. Fowler
Vice Chairman
Liberty Bank of Arkansas
Jonesboro, Ark.

Lisa McDaniel Hawkins
President
Room to Room Inc.
Tupelo, Miss.

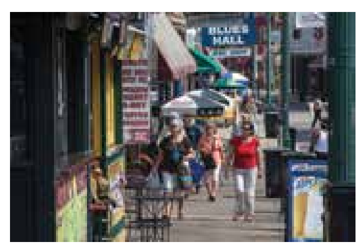
Lawrence C. Long
Partner
St. Rest Planting Co.
Indianola, Miss.

Clyde Warren Nunn
Chairman and President
Security Bancorp of Tennessee Inc.
Halls, Tenn.



Charlie E. Thomas III
Regional Director
of External and Legislative Affairs
AT&T Tennessee
Memphis, Tenn.

Martha Perine Beard
Regional Executive
Memphis Branch
Federal Reserve Bank of St. Louis



Industry Councils

Council members represent a wide range of Eighth District businesses from four key industries and periodically report on economic conditions to help inform monetary policy deliberations.

AGRIBUSINESS
Based in Little Rock, Ark.

Sam J. Fiorello
Chief Operating Officer
and Senior Vice President
Donald Danforth Plant
Science Center
St. Louis

Timothy J. Gallagher
Executive Vice President
Bunge North America Inc.
St. Louis

Keith Glover
President and CEO
Producers Rice Mill Inc.
Stuttgart, Ark.

Bert Greenwalt
Professor of Agricultural Economics
Arkansas State University
Jonesboro, Ark.

Leonard J. Guarraia
Chairman
World Agricultural Forum
St. Louis

Richard M. Jameson
Owner
Jameson Family Farms Partnership
Brownsville, Tenn.

John C. King III
Owner
King Farms
Helena, Ark.

Lyle B. Waller II
Owner
L.B. Waller and Co.
Morganfield, Ky.

HEALTH CARE
Based in Louisville, Ky.

Calvin Anderson
Chief of Staff and
Senior Vice President
of Corporate Affairs
Blue Cross Blue Shield
of Tennessee
Memphis

Steven J. Bares
President and Executive Director
Memphis Bioworks Foundation
Memphis

Jeffrey B. Bringardner
President of Kentucky Market
Humana-Kentucky Inc.
Louisville

Paul Halverson, M.D.
Director, State Health Officer
Arkansas Department of Health
Little Rock

Susan L. Lang
CEO
HooPayz
St. Louis

Rich A. Lechleiter
Chief Financial Officer
Kindred Healthcare Inc.
Louisville

Dixie L. Platt
Senior Vice President
Mission and External Relations
SSM Health Care
St. Louis

Stephen A. Williams
President and CEO
Norton Healthcare
Louisville

REAL ESTATE
Based in St. Louis

Joseph D. Hegger
Director
Jeffrey E. Smith Institute
of Real Estate
University of Missouri-Columbia
Columbia, Mo.

Janet Horlacher
Principal and Executive Vice President
Janet McAfee Inc.
St. Louis

J. Scott Jagoe
Owner
Jagoe Homes Inc.
Owensboro, Ky.

Larry K. Jensen
President and CEO
Commercial Advisors LLC
Memphis

Chuck Kavanaugh
Executive Vice President
Home Builders Association of Louisville
Louisville

Gregory J. Kozicz
President and CEO
Alberici Corp.
St. Louis

Jack McCray
Managing Director
KW Commercial Little Rock
Little Rock

William M. Mitchell
Vice President and Principal Broker
Crye-Leike Realtors
Memphis

Lynn B. Schenck
Executive Vice President and
Director of Leasing and Sales
Jones Lang LaSalle
St. Louis

E. Phillip Scherer III
President
Commercial Kentucky Inc.
Louisville

Mary R. Singer
President
CresaPartners Commercial Realty Group
Memphis

TRANSPORTATION
Based in Memphis, Tenn.

Bob Blocker
Senior VP Sales and Customer Service
American Commercial Lines
Jeffersonville, Ind.

Charles L. Ewing Sr.
President
Ewing Moving Service and Storage Inc.
Memphis

Rhonda Hamm-Niebruegge
Director of Airports
Lambert International Airport
St. Louis

Richard McClure
President
UniGroup Inc.
St. Louis

Judy R. McReynolds
President and CEO
Arkansas Best Corp.
Fort Smith, Ark.

Mitch Nichols
President
UPS Airlines
Louisville

Dennis B. Oakley
President
Bruce Oakley Inc.
North Little Rock, Ark.

John F. Pickering
Chief Operations Officer
Cass Information Systems Inc.
Bridgeton, Mo.

David L. Summitt
President
Summitt Trucking LLC
Clarksville, Ind.

Paul Wellhausen
President
Lewis and Clark Marine
Granite City, Ill.

Community Development Advisory Council

The council keeps the Bank's president and staff informed about community development in the Eighth District and suggests ways for the Bank to support local development efforts.

Joe W. Barker
Executive Director
Southwest Tennessee
Development District
Jackson, Tenn.

Whitney Bishop
Executive Director
Southern Indiana Asset
Building Coalition
Jeffersonville, Ind.

Tamika Edwards
Director of Public Policy
Southern Bancorp
Community Partners
Little Rock, Ark.

Brian Fogle
President and CEO
Community Foundation
of the Ozarks
Springfield, Mo.

George Hartsfield
Community Volunteer
Jefferson City, Mo.

David Howard Jr.
Vice President of Equity
Federation of Appalachian
Housing Enterprises Inc.
Berea, Ky.

Edgardo Mansilla
Executive Director
Americana Community Center
Louisville, Ky.

Paulette Meikle
Chair and Associate Professor
Delta State University
Cleveland, Miss.

Joe Neri
President
IFF
Chicago

Ines Polonius
Executive Director
alt.Consulting
Pine Bluff, Ark.

Eric Robertson
President
Community LIFT
Memphis, Tenn.

Royce Sutton
Vice President,
Community Development Manager
Fifth Third Bank
St. Louis

Elizabeth Trotter
Senior Vice President/CRA Director
IBERIABANK
Lafayette, La.

Keith Turbett
First Vice President
Community Development Manager
Memphis and Nashville Regions
SunTrust Bank
Memphis, Tenn.

Cary Tyson
Assistant Director
Arkansas Historic Preservation Program
Little Rock, Ark.

Johanna Wharton
Executive Vice President
Grace Hill Settlement House
St. Louis

Deborah Williams
Chief Executive Officer
HANDS Inc.
Bowling Green, Ky.

Community Depository Institutions Advisory Council

The members meet twice a year to advise the Bank's president on the credit, banking and economic conditions facing their institutions and communities. The council's chairman also meets twice a year in Washington, D.C., with his counterparts from the 11 other Fed districts and with the Federal Reserve chairman.

Chairman
Glenn D. Barks
President and CEO
First Community Credit Union
Chesterfield, Mo.

Kirk P. Bailey
CEO
Magna Bank
Memphis, Tenn.

Carolyn "Betsy" Flynn
President and CEO
Community Financial Services Bank
Benton, Ky.

H. David Hale
Chairman, President and CEO
First Capital Bank of Kentucky
Louisville, Ky.

Gary E. Metzger
President
Liberty Bank
Springfield, Mo.

Larry W. Myers
President and CEO
First Savings Bank
Clarksville, Ind.

Frank M. Padak
President, CEO and Treasurer
Scott Credit Union
Collinsville, Ill.

Mark A. Schroeder
Chairman and CEO
German American Bancorp
Jasper, Ind.

Steve Stafford
President and CEO
First National Bank in Green Forest
Green Forest, Ark.

Gordon Waller
President and CEO
First State Bank & Trust
Caruthersville, Mo.

Larry T. Wilson
President and CEO
First Arkansas Bank & Trust
Jacksonville, Ark.

Vance Witt
Chairman and CEO
BNA Bank
New Albany, Miss.

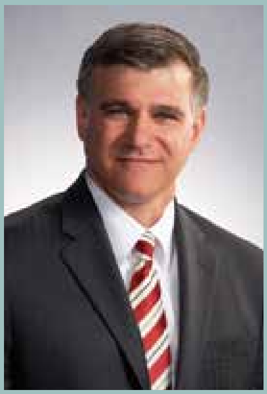
Federal Advisory Council Member

The council is composed of one representative from each of the 12 Federal Reserve districts. Members confer with the Fed's Board of Governors at least four times a year on economic and banking developments and make recommendations on Fed System activities.

D. Bryan Jordan
Chairman, President and CEO
First Horizon National Corp.
Memphis, Tenn.

Management Committee

James Bullard
President and CEO



David A. Sapenaro
First Vice President and COO

Karl W. Ashman
Senior Vice President
Administration and Payments

Karen L. Branding
Senior Vice President
Public Affairs

Cletus C. Coughlin
Senior Vice President
and Policy Adviser to the
President

Mary H. Karr
Senior Vice President,
General Counsel and Secretary
Legal

Kathleen O'Neill Paese
Senior Vice President
Treasury Services

Julie L. Stackhouse
Senior Vice President
Banking Supervision, Credit,
Community Development
and Learning Innovation

Christopher J. Waller
Senior Vice President
and Director of Research

Bank Officers

ST. LOUIS

James Bullard
President and CEO

David A. Sapenaro
First Vice President and COO

Karl W. Ashman
Senior Vice President

Karen L. Branding
Senior Vice President

Cletus C. Coughlin
Senior Vice President
and Policy Adviser to the President

Mary H. Karr
Senior Vice President,
General Counsel and Secretary

Kathleen O'Neill Paese
Senior Vice President

Michael D. Renfro
Senior Vice President
and General Auditor

Julie L. Stackhouse
Senior Vice President

Christopher J. Waller
Senior Vice President
and Director of Research

Richard G. Anderson
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David Andolfatto
Vice President

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Vice President

Timothy C. Brown
Vice President

Marilyn K. Corona
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of Office of Minority
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Vice President

Anna M. Helmering Hart
Vice President

Roy A. Hendin
Vice President, Deputy General Counsel
and Assistant Corporate Secretary

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Vice President

Debra E. Johnson
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Vice President

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Diane E. Berry
Assistant Vice President

Dennis W. Blase
Assistant Vice President

Winchell S. Carroll
Assistant Vice President

Hillary B. Debenport
Assistant Vice President

William R. Emmons
Assistant Vice President

William M. Francis
Assistant Vice President

Mary C. Francone
Assistant Vice President

James W. Fuchs
Assistant Vice President

Timothy R. Heckler
Assistant Vice President

Paul M. Helmich
Assistant Vice President

Cathryn L. Hohl
Assistant Vice President

Joel H. James
Assistant Vice President

Visweswara R. Kaza
Assistant Vice President

Catherine A. Kusmer
Assistant Vice President

Michael Z. Markiewicz
Assistant Vice President

Michael W. McCracken
Assistant Vice President

Raymond McIntyre
Assistant Vice President

Christopher J. Neely
Assistant Vice President

Arthur A. North II
Assistant Vice President

Glen M. Owens
Assistant Vice President

Kathy A. Schildknecht
Assistant Vice President

Philip G. Schlueter
Assistant Vice President

Scott B. Smith
Assistant Vice President

Katrina L. Stierholz
Assistant Vice President

Kristina L.C. Stierholz
Assistant Vice President

James L. Warren
Assistant Vice President

Yi Wen
Assistant Vice President

Carl D. White II
Assistant Vice President

Marcela M. Williams
Assistant Vice President

Christian M. Zimmermann
Assistant Vice President

Subhayu Bandyopadhyay
Research Officer

Heidi L. Beyer
Research Officer

Cassie R. Blackwell
Treasury Officer

Ray Boshara
Community Development Policy Officer

Adam L. Brown
Information Technology Officer

Carlos Garriga
Research Officer

Patricia M. Goessling
Treasury Officer

Stephen P. Greene
Public Affairs Officer

Karen L. Harper
Treasury Officer

Terri L. Kirchhofer
Audit Officer and Assistant General Auditor

Kevin L. Kliesen
Research Officer

Jackie S. Martin
Support Services Officer

Alexander Monge-Naranjo
Research Officer

Michael Thomas Owyang
Research Officer

Jennifer L. Robinson
Financial Management Officer

Abby L. Schafers
Human Resources Officer

Yvonne S. Sparks
Community Development Officer

Rebecca M. Stoltz
Information Technology Officer

Mary C. Suiter
Economic Education Officer

Donald J. Trankler
Information Technology Officer

LITTLE ROCK

Robert A. Hopkins
Regional Executive

LOUISVILLE

Maria G. Hampton
Regional Executive

Ronald L. Byrne
Vice President

MEMPHIS

Martha L. Perine Beard
Regional Executive

Ranada Y. Williams
Assistant Vice President

Retirees from the Boards of Directors and Advisory Councils

We bid farewell and express our gratitude to those members of the boards of directors and of our advisory councils who retired recently.

From the Boards of Directors

Little Rock
William C. Scholl
C. Sam Walls

Louisville
Barbara Ann Popp

Memphis
Allegra C. Brigham

From the Community Development Advisory Council

The Rev. Adrian Brooks
Brian Dabson
Trinita Logue
Sara Oliver
Kevin Smith
Emily Trenholm
Sherece West

From the Industry Councils

Agribusiness
Ted Huber
Steven Turner
David Williams

Health Care
Kevin Bramer
Robert Gordon
Russell Harrington
Richard Pierson
Jan Vest

Real Estate
Steven Lane

Transportation
Gene Huang

From the Community Depository Institutions Advisory Council

D. Keith Hefner
William J. Rissel
Dennis M. Terry
Larry Ziglar

The Federal Reserve Bank of St. Louis is one of 12 regional Reserve banks that, together with the Board of Governors, make up the nation's central bank. The St. Louis Fed serves the Eighth Federal Reserve District, which includes all of Arkansas, eastern Missouri, southern Illinois and Indiana, western Kentucky and Tennessee, and northern Mississippi. The Eighth District offices are in St. Louis, Little Rock, Louisville and Memphis.

Federal Reserve Bank of St. Louis
One Federal Reserve Bank Plaza
Broadway and Locust Street
St. Louis, MO 63102
314-444-8444

Louisville Branch
National City Tower
101 S. Fifth St., Suite 1920
Louisville, KY 40202
502-568-9200

Little Rock Branch
Stephens Building
111 Center St., Suite 1000
Little Rock, AR 72201
501-324-8205

Memphis Branch
200 N. Main St.
Memphis, TN 38103
901-579-2404

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