THE REGIONAL ECONOMIST

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THE FEDERAL RESERVE BANK OF ST. LOUIS

CENTRAL TO AMERICA'S ECONOMY®

Deficits and Debt

How We Got Here, Where We Could Go—plus a Q&A

Wage Gaps

Are Women, Obese People *Really* Being Shortchanged?

Is Shadow Banking Really Banking?

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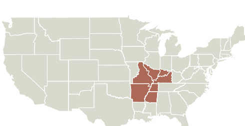

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James Bullard, President and CEO
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Economic Data: Appearances Can Be Deceiving

One of the challenges we face as policymakers is the availability of data to assess the state of the economy in real time. Many economic data series are released with delays of weeks or months and are subject to subsequent revisions that can be quite sizable and can alter our perceptions of the economic situation. When formulating monetary policy in real time, we must always keep that in mind.

As a prime example, estimates of the nation's gross domestic product (GDP) undergo multiple revisions as new information becomes available. The Bureau of Economic Analysis releases three estimates (advance, second and third) for each observation of GDP in the months after a quarter ends. These estimates are then subject to annual revisions, which generally cover the three previous years but sometimes more. The latest annual revision, released July 29, demonstrated that estimates of GDP can change substantially from earlier reports.

The revisions to the data included in the July 29 GDP report create a different view of economic growth in recent years. Based on these revisions, the 2007-2009 recession now appears to have been deeper than economists and other analysts previously estimated. For instance, while still the largest contraction of the recession, output during the fourth quarter of 2008 declined by 6.8 percent according to the prior release but by 8.9 percent according to the revised numbers. In addition, the economy appears to have grown more slowly during the first half of 2011 than reports suggested at the time. First-quarter GDP growth was revised down from 1.9 percent to 0.4 percent, and first-half growth came in at just over 1 percent, according to the data released July 29.[1]

While the revisions suggest weaker growth, the anecdotal reports that came in during the first half of 2011 are not consistent with the idea that the economy grew very slowly and that growth was actually slowing down. Corporate profits, for example, were quite strong during that period. This could mean that GDP will be revised further in the future to reflect the stronger anecdotal reports. Alternatively, perhaps these reports came from larger businesses that have some global presence in Asia or elsewhere outside the United States. For those companies, U.S. markets are important, but they are not definitive for corporate profits. The inconsistencies between the revised data and the anecdotal reports serve as a caution about interpreting too much from the data.[2]

The latest annual revision, released July 29, demonstrated that estimates of GDP can change substantially from earlier reports.

When taken at face value, however, these revisions possibly had an impact on how people view the U.S. economy's potential output. The revised GDP data suggest that trend output growth over the past decade was lower than previously thought. If, for example, stock market participants expect lower trend growth in the future, they may revalue equities downward and, thus, sell off stocks. Such revaluations seemed to have occurred in late July and early August. U.S. equity markets experienced large fluctuations, and at least some of that volatility can likely be explained by the GDP revisions.

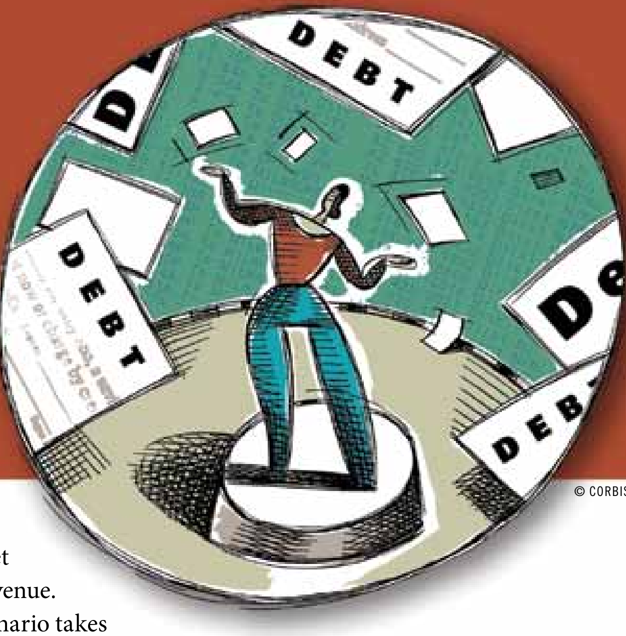
Overall, the July 29 GDP report was a major piece of news that appeared to alter expectations of economic growth going forward. An important point to keep in mind is that the data may be adjusted again with other annual revisions, as well as with the benchmark revisions that occur roughly every five years. These future revisions could end up telling yet another story about economic growth in recent years.

As mentioned above, interpreting real-time data poses a challenge for policymakers because we know the data can be revised substantially. Nevertheless, we must rely upon the information available to us, as well as expectations for future data, when making policy decisions. The St. Louis Fed houses a real-time database called ALFRED (ArchivaL Federal Reserve Economic Data), which provides vintage versions of economic data for more than 30,000 series. Having access to this type of information helps researchers and policymakers evaluate past policy actions. To do so properly, we should use the data that a policymaker had at the time of a given decision rather than revised data that are available several years later.[3]

Even though policymakers do not have the benefit of revised data when reaching decisions, we can learn from economic history. My colleagues at the Fed and I use many pieces of economic information, including the latest vintage of GDP data, to shape our perceptions about the U.S. economy as we formulate monetary policy to achieve the Fed's dual mandate. Ω

ENDNOTES

1 These growth rates are annual rates of change.
2 Further illustrating the inconsistencies, second-quarter GDP was revised down from 1.3 percent (the advance estimate) to 1 percent (the second estimate) in the Aug. 26 report.
3 For example, see Orphanides, Athanasios. "Monetary Policy Rules Based on Real-Time Data." *American Economic Review*, September 2001, Vol. 91, No. 4, pp. 964-85.



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Why Health Care Matters and the Current Debt Does Not

By Brett Fawley and Luciana Juvenal

The global financial crisis and resulting Great Recession accelerated both national and international debate over the sustainability of U.S. government spending. This is the direct consequence of the crisis pushing the U.S. ratio of gross debt to GDP over 90 percent, due both to large increases in government spending and large decreases in tax revenue. (See Figure 1.) The fresh sense of urgency that this has ignited to solve the debt situation, however, obscures the fact that U.S. government spending was no more sustainable prior to the Great Recession than it is now. Put another way, the recent large deficits change almost nothing about the long-term fiscal prospects of the United States. The overwhelming obstacle to a sustainable fiscal path for the United States, regardless of the size of the current debt, remains health-care spending.

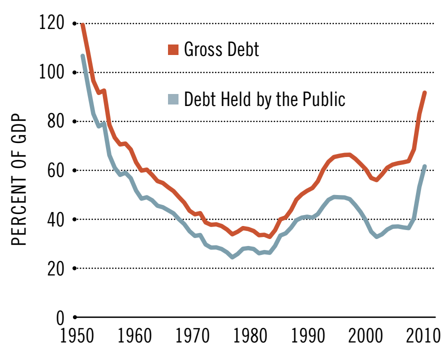
The Long-Run Outlook

The basic picture of the U.S. debt situation is presented by the Congressional Budget Office (CBO) in its Long-Term Budget Outlook.[1] Figure 2 shows the CBO's forecast of federal spending on net interest payments, Medicare/Medicaid and Social Security under two different scenarios. The primary differences between the extended-baseline scenario (solid lines) and alternative scenario (dotted lines) are the assumptions made regarding growth in government revenue.[2] The extended-baseline scenario adheres, in the words of the CBO, "closely to current law": The 2001 tax cuts expire, the reach of the alternative minimum tax grows, the tax provisions of the recent health-care legislation remain in place and the tax code remains largely in place. Under this scenario, the increase in health-care spending and Social Security is roughly offset by the steady growth in tax revenue. In contrast, the alternative scenario takes the opposite assumptions of the baseline and assumes that tax revenue will remain near its historical average of 18 percent of GDP. From Figure 2, three key inferences can be made:

1. If growth in government spending on health care and Social Security is matched by growth in government revenue, the cost of servicing the debt, and moreover the debt itself, will largely stabilize as a percent of GDP from 2020 to 2030. In other words, the current level of the debt is not by itself an obstacle to fiscal sustainability.
2. If, on the other hand, the government increases spending on health care and Social Security without raising additional revenue, the debt, and the cost of servicing the debt, will skyrocket toward unmanageable levels.
3. As a share of GDP, outlays on Social Security are expected to largely stabilize by 2030. Hence, the overwhelming driver of increases in government spending is health care.

FIGURE 1

The U.S. Federal Debt



SOURCE: Office of Management and Budget.

Data for 2008 through 2010 are estimates. Debt held by the public is gross debt less intra-governmental debt (i.e., government debt held by the government; the primary such holder is the Social Security fund) and financial assets owned by the government.

Health care is often thought of as a "superior" good: The wealthier that individuals are, the greater their share of income that they would prefer to spend on health care.[3] Therefore, it is sensible that the United States would wish to spend a larger and larger fraction of income on health care. The reality, though, is that rising health-care spending in the absence of revenue increases is unambiguously unsustainable, which was both true and well-documented prior to the current debt crisis.[4] At some point, tough decisions have to be made regarding whether health care is a universal right, and, if it is, who is going to pay for it.

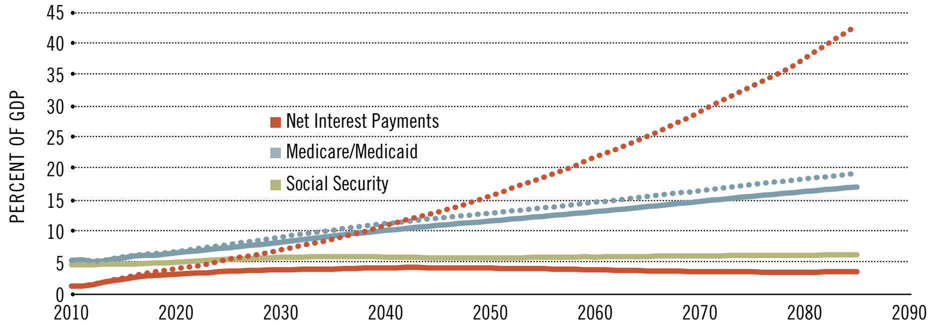
The Current Situation

As seen in Figure 2, net interest payments, and by association the debt level, should largely stabilize and even begin to fall as a fraction of GDP, provided future spending increases on health care are met by future revenue increases. Obviously, one critical part of this equation is GDP growth.

Historically, GDP growth has been the key ingredient for reducing the effective size of the U.S. debt. Figure 3 shows that the U.S. gross debt-to-GDP ratio declined from a post-war high of over 120 percent in 1946 to just under 38 percent by 1970. Figure 3 also shows that this decline was not due

FIGURE 2

The Congressional Budget Office's Long-Term Outlook for Federal Outlays



SOURCE: CBO.

NOTE: The solid lines denote the CBO baseline forecast where revenues increase as a share of GDP, while the dotted lines denote the CBO alternative forecast under constant tax revenues as a share of GDP. See endnote No. 2 for additional differences between scenarios.

to the government running surpluses, but almost entirely due to GDP growth: The average budget gap was a deficit equal to a half percent of GDP, as the government ran deficits in over two-thirds of the years covered. But because GDP grew on average 3 percent per year over this period, the ratio of gross debt to GDP fell precipitously.

One fair charge is that, in the current situation, we cannot rely on GDP growth to magically wipe away the debt. In particular, the assertion that a causal link exists between high debt and low growth is particularly worrisome, as it would imply a reinforcing cycle between low growth and rising debt.[5] But this is where it is important to remember that the government differs critically from businesses and individuals.

As the sole manufacturer of dollars, whose debt is denominated in dollars, the U.S. government can never become insolvent, i.e., unable to pay its bills.[6] In this sense, the government is not dependent on credit markets to remain operational. Moreover, there will always be a market for U.S. government debt at home because the U.S. government has the only means of creating risk-free dollar-denominated assets (by virtue of never facing insolvency and paying interest rates over the inflation rate, e.g., TIPS—Treasury Inflation-Protected Securities). Together with the unusually high, but manageable, level of the current debt, these facts imply that the current U.S. government can wait out any short-term economic developments until long-run growth is restored.[7] Further, without an immediate need to drastically reduce the debt, the mechanism between high debt and slow growth loses most of its credibility.

Of course, as we have already seen with health care, the government does not have the ability to systematically increase spending without any regard for funding it. And government borrowing can be extremely costly. The cost of government borrowing is the "crowding out effect": Investment funds mobilized by the government cannot be used in the private sector. It is in this framework, though, that classical economic theory argues the government should neither borrow nor lend, not because it has a moral obligation to run balanced budgets, but because it must consider the cost of diverting investment funds away from potentially more-productive uses.

In an economic environment like today's, where real interest rates are practically zero, if not negative, and the unemployment rate remains high, the opportunity cost to society of the government's mobilizing capital and labor is unprecedentedly low: The private sector is not fully utilizing these resources; so, no opportunities are lost if the government uses them. Assuming investment projects with a positive net expected return exist, as they surely do, there has hardly been a less costly time to start such projects.[8] What no country can afford, however, are permanent increases in government spending without increasing tax revenue. Ω

Luciana Juvenal is an economist and Brett Fawley is a senior research associate, both at the Federal Reserve Bank of St. Louis. See http://research.stlouisfed.org/econ/juvenal/ for more on Juvenal's work.

ENDNOTES

1 See Congressional Budget Office.
2 In addition to altering its assumptions about tax revenue in the alternative scenario, the CBO relaxes some of the assumptions that it makes regarding the full implementation of the recent health-care bill. This slightly modifies its projections for health-care spending, though this is of secondary importance to the tax revenue assumptions. The alternative scenario contains no changes in assumptions regarding Social Security; so, the solid and dotted lines fully overlap.
3 See Scheiber.
4 See Wasylenko.
5 See Reinhart and Rogoff.
6 Technically, the debt ceiling could render the government unable to pay its bills, but the law has little credibility because enforcing it would almost certainly cause more harm than good.
7 The long-run GDP growth assumed by the CBO is a fairly conservative 2.1 percent.
8 Note that we are drawing a strict distinction between investment projects, e.g., infrastructure, which enhances the capacity of the economy and will likely be needed down the line, and current spending, which only provides services today.

REFERENCES

Congressional Budget Office. "CBO's 2011 Long-Term Budget Outlook." June 2011. See www.cbo.gov/doc.cfm?index=12212

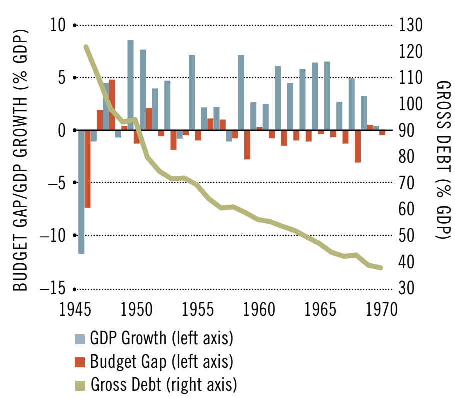
Reinhart, Carmen M.; and Rogoff, Kenneth S. "Growth in a Time of Debt." National Bureau of Economic Research Working Paper No. 15639, January 2010. See www.nber.org/papers/w15639

Scheiber, George J. "Health Care Expenditures in Major Industrialized Countries: 1960-1987." *Health Care Financing Review*, Summer 1990, Vol. 11, No. 4, pp. 159-67.

Wasylenko, Michael. "Health Care and the Looming Fiscal Crisis in the United States." *Revista Chilena de Administracion Publica* (Chilean Journal of Public Administration), June 2007, Issue 9, pp. 65-78. See http://surface.syr.edu/cgi/viewcontent.cgi?article=1003&context=ecn

FIGURE 3

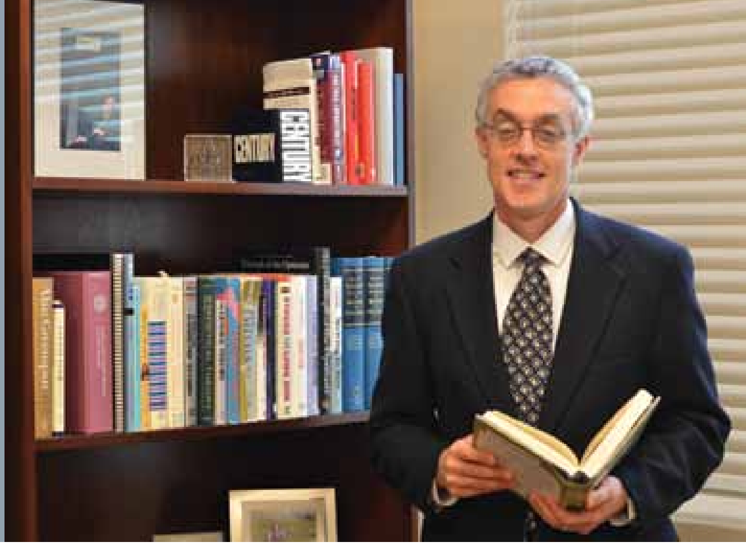
The Evolution of the U.S. Debt: 1946-1970



SOURCES: Bureau of Economic Analysis and Office of Management and Budget.

Questions about the Budget Deficit of the U.S. Have No Easy Answers

with William R. Emmons



The St. Louis Fed's new discussion series for the public, "Dialogue with the Fed: Beyond Today's Financial Headlines," is under way. Economists and others from the Bank talk about pressing issues related to the economy, after which the audience asks questions. William R. Emmons, an economist in the Banking Supervision and Regulation division, will be the featured speaker Oct. 18. His talk will be titled "What's Driving the Federal Budget Deficit, and What Can We Do About It?" What follows is a preview of his talk, based on questions he often receives.

Q. *Do we really have a problem with our federal budget, or has this been blown out of proportion?*

A. We really do have a problem—in both the short-term and long-term. The reasons behind the former are, of course, the recent recession and financial crisis; their severity led to a huge expansion of the deficit. It would have been virtually impossible to prevent this large increase in the deficit after such an economic and financial shock. That's because our laws include many provisions that operate automatically ("automatic stabilizers") with no input from Congress or the president unless they choose to revise those laws—which they would be loath to do during a recession. Examples of spending categories that increase automatically when the economy slows include unemployment insurance and income-based benefits for health care and food. On the other side of the ledger, tax payments by individuals and businesses go down when their incomes fall.

Q. *How much are we talking about?*

A. Automatic stabilizers were $34 billion (7 percent of the deficit) during fiscal year 2008, $312 billion (22 percent of the deficit) during 2009 and $359 billion (28 percent of the deficit) during 2010. (The total deficits for these years were $459 billion, $1.413 trillion, and $1.294 trillion, respectively; the Congressional Budget Office [CBO] expects the 2011 deficit to come in at about $1.284 trillion.) These amounts will taper off if and when the economy picks up steam.

Q. *But that still leaves about three quarters of the 2009 and 2010 deficits that weren't automatic. What else was going on?*

A. Congress and the president agreed to significant increases in federal spending and decreases in tax revenues intended to cushion the blow of the severe recession and prevent the economy from sliding into a repeat of the Great Depression. These included increased infrastructure spending, substantial assistance for state and local governments, and purchases of financial assets and entire financial institutions—for example, Fannie Mae and Freddie Mac. Some types of taxes were decreased, and the large tax cuts of President Bush's era that were scheduled to expire at the end of 2010 were extended.

Q. *Help me with the math—how much do these discretionary deficits amount to?*

A. The discretionary components of the federal budget deficit during fiscal years 2008, 2009 and 2010 were $425 billion, $1.1 trillion and $935 billion, respectively.

Q. *And what is driving the long-term federal budget problem?*

A. Two main factors, according to the CBO: an aging population and the rapid increase in spending on health care. (See related article on pp. 4-5.)

Q. *Which budget problem is more serious —the short-term or the long-term?*

A. The long-term. In the short term, renewed economic growth and a few budget adjustments would bring the deficit back down to a reasonable level. Investors both at home and abroad show limited concern about short-run deficits.

On the other hand, we know the long-term problem is being taken more seriously by investors because, in part, Standard & Poor's downgraded the Treasury's long-term debt recently. And financial history is full of countries that let their deficits run out of control to the point that the interest on the debt itself starts to compound at a frightening pace. At some point, these countries cannot raise enough tax revenue or borrow from investors, and they default.

Q. *Couldn't the government refinance its debt at low interest rates for the long haul, just as an individual combines his credit-card and other debts and takes out a home equity loan at a fixed low rate for 30 years?*

A. The Treasury could, in principle, borrow a lot more at very long maturities to lock in current rates. It is unlikely to do that. Among the reasons:

a) The Treasury's debt-management strategy targets an average maturity of closer to five or six years. This lowers the short-term cost of borrowing (shorter maturities are cheaper to issue) and conforms to long-standing practice and market expectations. The Treasury believes that it can minimize its borrowing costs over time by maintaining deep and liquid markets all along the Treasury yield curve, from a few days out to 30 years. As for going further out—50 or 100 years, for example—I don't think such a move would conform to the Treasury's strategy. It would also be difficult to maintain liquid markets at maturities that extend that far into the future.

b) There is no guarantee that current long-term rates would be favorable for the Treasury. Long-term rates could go lower—look at Japan.

c) Long-term rates are comparatively expensive today. The Treasury pays 3.5 percent to borrow at 30 years, but it pays essentially zero to borrow for a few months.

Q. *What is the tipping point for the debt—the point where, as you say, deficits run out of control and interest on the debt starts to compound at a frightening pace?*

A. No one really knows. Some well-known economists have been preaching that a debt-to-GDP ratio of 90 percent is the tipping point, based on their study of other countries' debt crises. Critics of these economists, however, say that this is a simplistic and naïve number based on countries that are not relevant for comparison to the U.S. As a counter-example, Japan has outstanding government debt of over 200 percent of GDP, and that country has had no trouble to date in borrowing at very low rates.

Another approach to this question is to look at the very long term—say, 50 or 100 years out or more—and define the determinants of a sustainable long-run debt roll-over strategy. Economists have done this and have concluded that a country with a primary budget balance of zero (the budget balance excluding interest payments) can roll over its debt indefinitely, however large it may be, as long as the average interest rate it pays is no higher than the growth rate of its potential revenue—essentially, the growth rate of the economy. Looking back, the U.S. has been in this position for significant parts of its history.

To be in this position again, we would need to bring our primary budget deficit down and hope that the economy continues to grow while investors continue to accept very low Treasury interest rates. Using fiscal year 2011 (Oct. 1, 2010-Sept. 30, 2011) as an example, the growth rate of nominal GDP was 3.7 percent (through the second quarter of 2011), and the average rate of interest paid on the outstanding debt was about 3 percent. Thus, if these rates persisted indefinitely, we could "afford" a primary deficit of about 0.7 percent of GDP each year and still roll over our debt successfully, even after making interest payments.

Unfortunately, our primary deficit during fiscal 2011 was about 7 percent of GDP—far too large to be covered by our modest financing advantage relative to GDP growth. The point remains, however, that it is conceivable the U.S. could roll over a very large stock of outstanding debt forever under the right circumstances. In fact, the CBO projects that our primary deficit will be close to zero by fiscal year 2014 if current policies—including the expiration of all temporary tax cuts and other scheduled provisions—are carried out.

Q. *These discussions always end up with the experts saying that the only solution is to trim Medicare/Social Security for baby boomers. Is that true?*

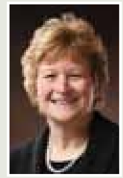
A. Yes, unless we are willing to raise taxes a great deal, which would harm the economy. The aging population and federal spending on health care are the two issues the CBO highlights in its long-term budget outlook. The way the CBO explains it, the aging of the population creates big budget pressures for a few decades, but then it recedes a bit. The aging of the population goes beyond the baby-boom generation, however, because even after all baby boomers have died, demographers expect the remaining population structure to be permanently older on average. That's because people will keep living longer, and the birth rate is flat or declining.

So, the aging population is a huge issue until about 2035; then, it becomes "just" a big issue.

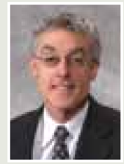
Federal health-care expenditures, on the other hand, threaten to grow faster indefinitely than the economy and tax revenues unless we find a way to bring them under control. Ω

DIALOGUE WITH THE FED

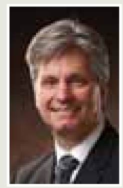
Beyond Today's Financial Headlines



The first Dialogue with the Fed was Sept. 12. Julie Stackhouse, senior vice president of Banking Supervision and Regulation, discussed lessons learned from the financial crisis.



On Oct. 18, economist William R. Emmons of Banking Supervision and Regulation will discuss the federal deficit.



On Nov. 21, Christopher J. Waller, research director, will discuss the ramifications of lingering high unemployment rates.

To keep abreast of this series, see www.stlouisfed.org/dialogue

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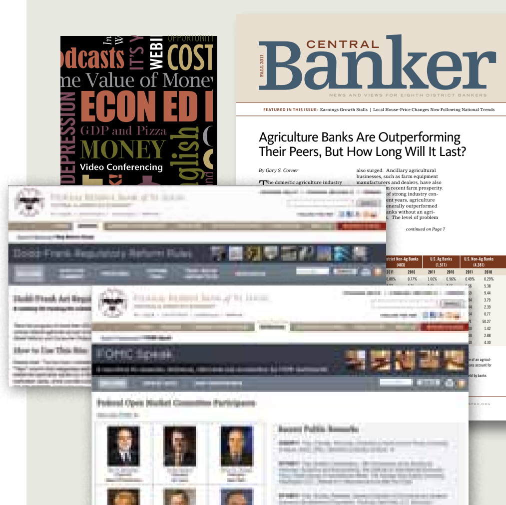
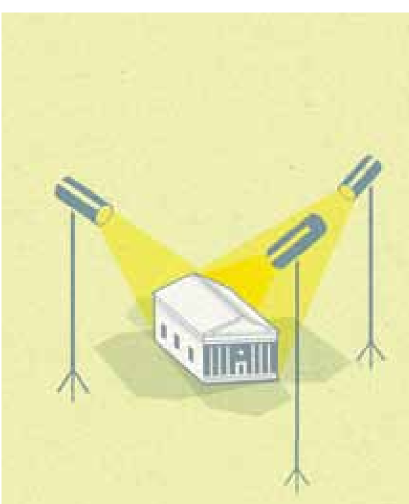


Is Shadow Banking Really Banking?

The size of the shadow banking sector was close to $20 trillion at its peak and shrank to about $15 trillion last year, making it at least as big as, if not bigger than, the traditional banking system.

By Bryan J. Noeth and Rajdeep Sengupta



The term "shadow banking" has been attributed to 2007 remarks by economist and money manager Paul McCulley to describe a large segment of financial intermediation that is routed outside the balance sheets of regulated commercial banks and other depository institutions. Shadow banks are defined as financial intermediaries that conduct functions of banking "without access to central bank liquidity or public sector credit guarantees."[1] As shown in Figure 1, the size of the shadow banking sector was close to $20 trillion at its peak and shrank to about $15 trillion last year, making it at least as big as, if not bigger than, the traditional banking system.[2] Given its size and role in the financial crisis, it would be useful to understand the mechanics of shadow banking. To do so, some basics of traditional banking need to be understood first.

Simply put, banks are intermediaries that obtain funds from lenders in the form of deposits and provide funds to borrowers in the form of loans.[3] The principal function of a bank is that of *maturity transformation*—coming from the fact that lenders prefer deposits to be of a shorter maturity than borrowers, who typically require loans for longer periods. It is important to point out that, because of sudden liquidity needs of individual agents or businesses, this function cannot be performed by individual agents or businesses alone—therein lies the rationale for a bank. Banks are able to achieve this transformation by exploiting the fact that only a small fraction of depositors have liquidity needs at a given time. Therefore, the bank can store a small fraction of its deposits in the form of liquid assets (readily convertible to cash) and lend out the rest in the form of term (illiquid) loans. This function is also known as *qualitative asset transformation* because, by changing the maturity of its assets, the bank also changes their liquidity.[4]

However, by performing this function, a bank is essentially rendered fragile. The fragility comes from the fact that even a healthy bank can be the victim of a *bank run*. If all depositors demand their deposits back, the bank would have to liquidate all its assets (even those that are not liquid) to fulfill depositors' demands. Since almost no bank can liquidate all its assets within a short period without suffering a loss in value, a problem of illiquidity can essentially turn into a problem of insolvency and the collapse of the bank. Accordingly, depositors are acting rationally when they withdraw their deposits even at the smallest hint of bad news.[5] More often than not, such bank runs are hardly limited to just one bank, precipitating what is called a *banking panic*.

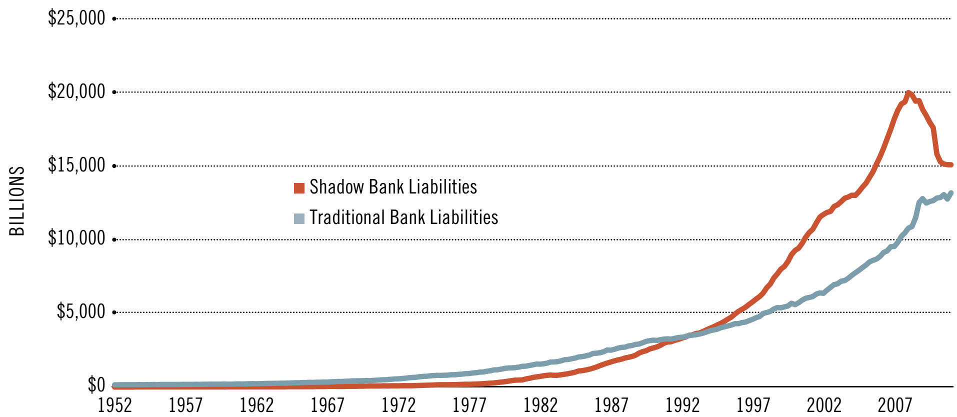
Given their inherent fragility, banks typically require credit enhancements in the form of insurance of deposits or emergency access to funds from the central bank.[6] In most countries, public funds are the source of such provisions of emergency funding. Indeed, the financial history of the United States is replete with stories about bank runs and bank failures prior to 1934. In that year, the Federal Deposit Insurance Corp. was created, ending runs on commercial banks in the U.S.

However, the end of bank runs does not imply the end of bank failures. Indeed, the inclusion of such credit-enhancement measures, especially those funded by third parties, creates a significant moral hazard for banks.[7] Banks investing in risky loans benefit from higher returns on the slim chance of success, whereas the taxpayer is left to bail out depositors in the likely event that the banks fail.[8] Regulations seeking to prevent such moral hazard require banks to hold significantly higher capital for increased riskiness of loans (assets) on their balance sheet—known as a *risk-weighted capital adequacy requirement*. Banks view raising such capital as costly and often engage in practices that would help prevent them from having to do so.[9] One such practice is the creation of off-balance-sheet entities to host some of the banks' assets and, thereby, reduce their regulatory capital requirements. This practice is often viewed as one of the major reasons behind the creation and growth of shadow banking.

Broadly speaking, credit intermediation through the shadow banking system is much like that through a traditional bank—it fulfills the principal function of qualitative asset transformation. However, unlike traditional banking, which involves a simple process of deposit-taking and originating loans that are held to maturity, shadow banking employs a much more complicated process to achieve maturity transformation. At the deposit end of the shadow banking system are wholesale investors (providers of funds) using the *repo market* and money market intermediaries such as *money market mutual funds* (MMMFs) to provide short-term

FIGURE 1

Shadow Bank vs. Traditional Bank Liabilities



SOURCE: Federal Reserve Board/Haver Analytics and calculations from Adrian, Ashcraft, Boesky and Pozsar.

loans that are essentially withdrawable on demand. At the loan origination end are finance companies and even traditional banks that engage in the activity of originating loans, much like the traditional banking system.

The shadow banking system intermediates between the ultimate consumer of funds (borrower) and the wholesale investor of funds, whose liquidity needs may preclude long-term investments. Shadow banking comprises a chain of intermediaries that are engaged in the transfer of funds channeled upstream in exchange for securities and loan documents that are moving downstream. Therefore, what was once accomplished under a single roof in the traditional banking system is now done over a sequence of steps in the shadow banking system, each performed by specialized entities that are not vertically integrated.

The Deposit End of the Shadow Banking System

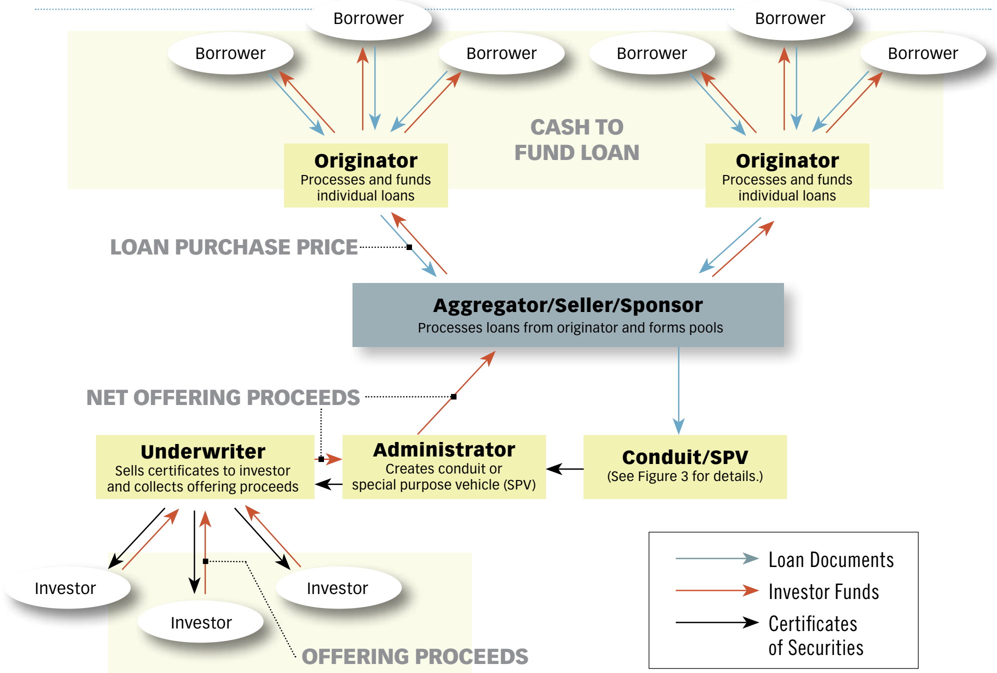
Most advanced economies have solved the problem of bank runs by the creation of deposit insurance. In 1980, deposit insurance in the U.S. was capped at $100,000; after the crisis, this limit was raised to $250,000. This meant that the demand for safe, short-term investments from large, cash-rich financial and nonfinancial companies remained unfulfilled. The shadow banking system fulfilled this demand in two ways—both of which made extensive use of widely available financial securities.

The first of these arrangements uses repo,

Banks view raising such capital as costly and often engage in practices that would help prevent them from having to do so. One such practice is the creation of off-balance-sheet entities. ... This practice is often viewed as one of the major reasons behind the creation and growth of shadow banking.

FIGURE 2

The Creation of Securities from Loans



The diagram shows a simplified, five-step process for converting loan originations into final securities. **First,** auto loans, student loans, mortgages and other loans are originated by regulated commercial banks and unregulated financial firms. **Second,** a warehouse bank (aggregator) buys loans from one or more originators and pools the loans. **Third,** the pooled loans are sold to an administrator, usually a subsidiary of a large commercial or investment bank; the administrator creates a special purpose vehicle (SPV) to hold the loans; the SPV issues securities against loans held in its portfolio. **Fourth,** the securities created by the SPV are sold by an underwriter, typically an investment bank. **Finally,** the securities are bought by investors.

or repurchase, transactions, whereby firms with surplus cash buy securities for cash only and then resell them back after a short term. Effectively, this repo transaction is a short-term cash loan to the seller of the security, with the security acting as collateral on the loan. Repo transactions can be open-ended and rolled over on a daily basis, making them analogous to deposits at a traditional bank that are withdrawable on demand. However, unlike demand deposits, which derive their safety from deposit insurance, repo transactions derive their safety from the underlying security that is the collateral on the loan. In the event of default on the loan, the lender retains the right to sell the security in the open market and collect the proceeds.

To enhance the safety of the transactions, repos are overcollateralized—that is, the loan amount is typically less than the face value of the securities used as collateral. In this manner, overcollateralization imposes a "haircut" on the repo, a haircut that varies with the credit risk on the security put up for collateral. Naturally, haircuts on repo transactions using Treasury securities are lower than haircuts using comparable private-label securities.

The second alternative for cash-rich investors is to purchase shares in money market mutual funds. In MMMFs, investors pool funds to invest in high-quality short-term securities of the government and corporations. Notably, investments (shares) in MMMFs are withdrawable on demand. The safety of investments in MMMFs comes from the fact that the securities they invest in are regulated to be of high quality and short maturity, such as Treasury bills and highest-grade commercial paper. While Treasury bills are regarded as securities with no credit risk, commercial paper is backed by assets that possess some credit risk. To alleviate concerns for investors, Rule 2a-7 of the Securities and Exchange Commission's Investment Company Act of 1940 restricts the quality, maturity and diversity of investments by MMMFs.

Cash-rich investors looking for safe investments that are withdrawable on demand can either purchase shares in MMMFs that are redeemable on demand or can purchase securities under a repo agreement, whereby the seller promises to purchase the securities back at a later date. The two avenues are somewhat different. Investments in MMMFs are in the form of a continuing contract with variable returns. On the other hand, a repo transaction is a one-time contract with fixed returns.

The Loan Origination End of the Shadow Banking System

This section refers to the processes by which the securities used in the deposit end of the system are created, either to be used as collateral in a repo transaction or as investments for MMMFs. The processes described below are a simple prototype of numerous schematics involved in the creation of such securities. In practice, the chains used in warehousing, securitization and servicing can be significantly more complicated than the illustrations given below.

Financial intermediation has moved from an originate-to-hold model of traditional banking to an originate-to-distribute model of modern securitized banking. Economist Gary Gorton argued in a book last year that deregulation and increased competition in banking rendered the traditional model of banking unprofitable. In modern banking, origination of loans is done mostly with a view to convert the loan into securities—a practice called *securitization*, whereby the transaction, processing and servicing fees are the intermediaries' principal source of revenue.

Figure 2 illustrates the process of converting loan originations into final securities. The starting point in this process is the origination of loans such as auto loans, mortgages and student loans by regulated commercial banks and unregulated finance companies. Under the traditional model of banking, this loan would reside on a bank's balance sheet, with the bank holding capital against the loan. Under the securitized model of banking, the bank arranges to sell the loan.

The second step of the process involves warehousing the loan. This includes a warehouse bank that purchases loans from one or more originators to form a pool of such loans. The warehouse bank is also known as the aggregator, seller or sponsor. In some cases, this entity can be the same as the originator. Typically, this financing occurs in the form of an extension of a line of credit from the warehouse bank to the originator of the loan (a finance company or a small community bank) that closes on the loan with such funds. The loan documents are then sent downstream to the warehouse bank to serve as collateral for the line of credit.

The third step in the process involves a sale of the pooled loans to an administrator, typically a subsidiary of a large commercial or investment bank. The role of the administrator is to purchase the loans from the aggregator and create the special purpose vehicle (SPV), which would finally hold the loans. Often, the administrator of the SPV receives a fee for services rendered. The SPV issues securities against loans held on its portfolio. (See sidebar on Page 12.)

The fourth step involves the sale of the securities created by the SPV. Almost always, the securities are not sold directly by the administrator—the creator of the trust. Typically, the administrator sells the certificates of the trust to the underwriter. The underwriter, which is generally an investment bank, purchases all such securities from the administrator with the responsibility of offering them up for sale to the ultimate investors. Notably, the underwriter can even retain some of these securities in its own portfolio. Retaining the riskiest securities is often viewed as a mechanism to signal the quality of those on sale.

The fifth and final step of the process involves the purchase of securities by the investor. The investor is then entitled to receive monthly payments of principal and interest on the securities from the SPV in their order of priority. The order of priority on the payment of principal and interest is determined by payment rights accorded to investors, depending on the class or tranche of security certificates purchased. The order of payment is determined in advance and stated on the indenture (legal document) that circumscribes the deal of securities generated in the process. At this stage, the ultimate investors of such securities can hold them on their balance sheet, sell them or even use them as collateral in a repo arrangement.

Is Shadow Banking Really Banking?

The five steps above describe the simplest process of securitization by which securities are created from originated loans. In some cases, segments of the process are repeated to create more securities. Typically, the class of securities issued depends on the maturity and type of underlying collateral (loans originated upstream). For example, mortgage-backed securities that are backed by residential or commercial mortgages typically have longer maturities than does asset-backed commercial paper (ABCP) that is typically backed by loan receivables or credit card receivables.[10]

MMMFs are among the principal investors in short-term ABCP. As mentioned above, MMMFs finance such investments with shares that can be redeemed on demand. On the other hand, repo transactions employ securities of longer maturity as collateral for short-term borrowings of cash. In both cases, the liability formed is theoretically withdrawable on demand and of shorter maturity than the assets financed. In this way, the mechanics of the shadow banking system typically resemble the functions of a commercial bank.

In the creation of securities, the cash proceeds from the sale of securities are passed upstream to all participating entities—administrator, aggregator and finally to the originator of the loans. At each stage, therefore, each participating entity relies on the sale of the securities and loan documents for revenue. In addition, almost all of the participating entities require sources of short-term funding. This can arise for two reasons. First, as described earlier, the maturity on the securities can be of a shorter length than the maturity of the loans, requiring the entity to roll over the securities or use short-term funds to pay investors. Second, at each stage in the process of securitization, the need for short-term funding arises in the interval between the purchase of loans and their subsequent sale downstream.

It has also been observed that all of the entities typically use a whole host of short-term instruments, like financial commercial paper, ABCP and repo transactions, to fulfill their short-term funding requirements.[11] To the extent that each entity uses short-term funding in the creation of assets (loans and securities) of longer maturity, these entities perform the functions of a bank. In this sense, individual entities of the credit intermediation process fulfill the functions of banking.

> The process transforms longer-term loans with significant credit risk into instruments of shorter maturity and of considerably lower risk that are redeemable on demand.

Moreover, the process as a whole transforms longer-term loans with significant credit risk (such as the origination of mortgages upstream) into instruments of shorter maturity and of considerably lower risk that are redeemable on demand (such as investment shares in MMMFs). In so doing, the credit intermediation process as a whole mimics the function of a bank.

Shadow Banking and the Financial Crisis of 2007-2008

Given the discussion at the beginning of this essay, an obvious corollary that follows is the fragility of the shadow banking system. In traditional banking, the fragility originates in a run by the bank's depositors. In securitized banking, the run comes from

continued on Page 13

The Special Purpose Vehicle Plays a Key Role in Shadow Banking

The Special Purpose Vehicles (SPV) are typically organized as trusts to which the seller/sponsor transfers the loan documents (receivables)—sometimes on a rolling basis. The trust issues securities or trust certificates, which are then sold to investors.

Notably, SPVs are legal entities with no employees and no locations, merely created by the administrator to hold the pool of loans and generate the securities. Technically, an SPV is bankruptcy-remote; this implies that if the administrator (creator of the SPV) were to enter a bankruptcy procedure, the administrator's creditors cannot seize the assets of the SPV. On the other hand, administrators will often provide an implicit guarantee beyond their contractual obligations to provide support to the SPV in the event of deterioration in asset performance.[13]

The conduit for securitization is formed by the SPV and various third parties that provide liquidity and credit enhancements to increase the marketability of the security certificates sold to investors (Figure 3). In some cases, the maturity of the certificates issued is shorter than the maturity on the originated loans, requiring the conduit to roll over maturing securities to pay off investors. Consequently, investors are exposed to roll-over risk and may require some form of liquidity provision as insurance against such risk. In addition, investors can require credit enhancement (against credit risk on loans that may default) in the form of a letter of credit from a bank or insurance company. The entities providing the liquidity and credit enhancements, as well as administrative services, are external to the SPV. It is possible that the administrator of the SPV is the same entity providing the liquidity and credit enhancements.

Interestingly, the credit enhancements on the securities can also be internally generated. Two popular ways in which credit enhancement is achieved are overcollateralization and loan subordination (*tranching*). Overcollateralization is achieved when either the SPV purchases loans at less than face value or issues certificates whose total program size is less than that of the value of the loans purchased or both.

Tranching is the process by which payouts on the obligations are sliced, or tranched, into classes, whereby the highest (senior-most) class of securities has seniority of claim over subordinated securities. Accordingly, the more senior-rated tranches are less risky and generally have lower yields and higher bond credit ratings than the lower-rated tranches. An SPV may sell tranches of various classes linked by a waterfall structure—a term referring to loans that are paid sequentially from the most senior-rated tranches to most-subordinate tranches (Figure 4). It is important to note that the liquidity and credit enhancements on the securities can be provided by one or all of the methods stated above.

The sequence of payouts from the repayment on loans determines the rating and liquidity of each class of securities. The lowest tranche is known as the *equity tranche*—because it refers to the practice whereby the administrator or underwriter retains this tranche to mitigate problems of moral hazard and adverse selection. However, this norm has often been violated in practice.[14] At the peak of the recent financial boom in the U.S., underwriters were able to sell equity tranches to investors with appetites for high risk.

FIGURE 3

The Special Purpose Vehicle and Conduit

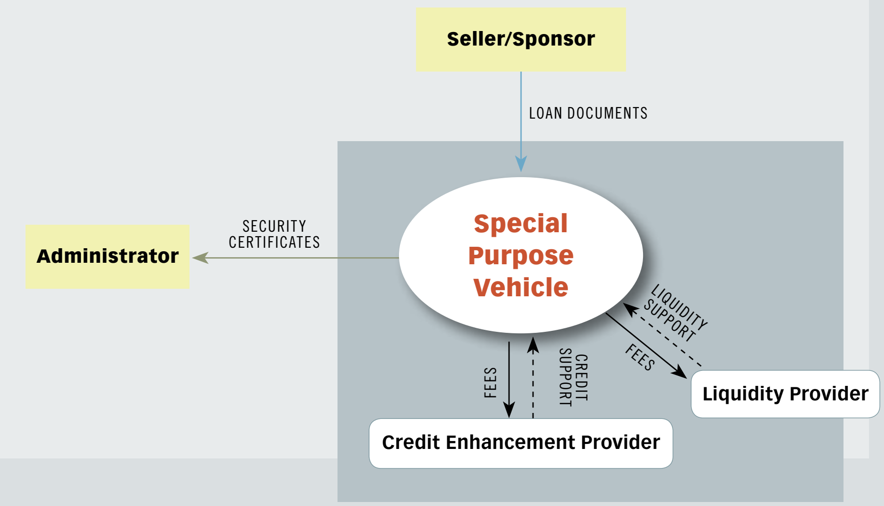
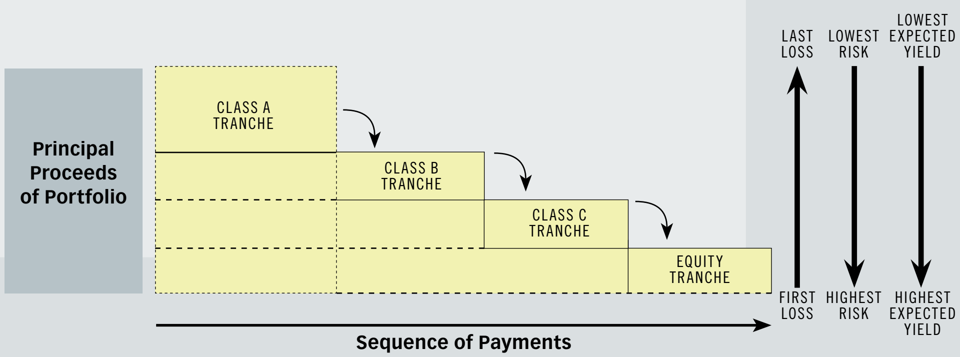


FIGURE 4

Tranching of Securities in a Waterfall Structure



continued from Page 11

the deposit end—the providers of wholesale funding to the shadow banks. The two markets in which such runs are most likely are the repo market and the commercial paper market.

The evidence on runs in the markets for wholesale funding demonstrated the parallel between traditional bank runs by depositors in the banking panics prior to 1934 and the recent panic in credit markets that relied on wholesale funding. As wholesale funding dried up for troubled shadow banks, they were forced to sell off assets in order to meet liquidity demands of investors. Such a fire sale of assets lowered the prices of assets on similar collateral throughout the market, raising the cost of funding for healthy shadow banks precipitously.

This trend was first pointed out for the repo market in a series of papers that are summarized in work by Gorton. In the interdealer repo market, a run occurred primarily through increased haircuts on the securities posted as collateral.[12] In the case of some securities, especially those backed by troubled mortgage loans, the haircuts were close to 100 percent—implying that these assets were no longer eligible for repo transactions. An increase in the haircuts on the repo implies an increased demand for collateral on the same loan or, conversely, a reduction in the supply of funds for a given amount of collateral. Since the supply of collateral in the entire shadow banking system is fixed over the short run, this meant that there was a significant liquidity crunch (shortfall in the supply of funds) and a steep rise in the cost of funding through repo transactions.

In the case of funding through MMMFs, the panic was witnessed in two major shocks to the commercial paper market in 2007-2008. The first shock came around July-August 2007 with the collapse of certain financial entities that had invested heavily in subprime mortgages. This led investors to question the quality of even highly rated ABCP. As a result, the spread of ABCP over the federal funds rate increased from 10 basis points before the shock to 150 basis points in the days after the shock.

The second and more severe shock occurred with the collapse of Lehman Brothers in September 2008. This led to a direct default on commercial paper issued by Lehman Brothers, $785 million of which was held by the Reserve Primary Fund—one of the largest MMMFs, with more than $65 billion in assets. Needless to say, the news of exposure triggered a run on this fund and quickly spread to other MMMFs. To stem the run on MMMFs, the U.S. Treasury announced a temporary deposit insurance covering all money market instruments only three days after the collapse of Lehman.

Conclusion

The reader may question the rationale behind the development of the shadow banking system and all its components. While some analysts have asserted that the shadow banking system is redundant and inefficient, it is not difficult to see the benefits of securitized banking. Securitization allows for risk diversification across borrowers, products and geographic location. In addition, it exploits benefits of both scale and scope in segmenting the different activities of credit intermediation, thereby reducing costs. Moreover, by providing a variety of securities with varying risk and maturity, it provides financial institutions opportunities to better manage their portfolios than would be possible under traditional banking. Finally, and contrary to popular belief, this form of banking increases transparency and disclosure because banks now sell assets that would otherwise be hosted on their opaque balance sheets.

In summary, the shadow banking system can be viewed as a parallel system—one that is a complement to and not a substitute for traditional banking. The challenge going forward is to harness the benefits and mitigate the risks and redundancies of such a parallel banking system. Ω

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ENDNOTES

[1, 2, 11, 14] See Adrian, Ashcraft, Boesky and Pozsar.

[3] Strictly speaking, this description fits commercial banks, which along with thrift institutions (savings and loans and credit unions) make up the set of depository institutions in the U.S.

[4] In addition, credit intermediation involves "brokerage," whereby the bank also reduces pre- and post-contractual informational asymmetries between the borrower and the lender. Note that this brokerage function is not necessarily exclusive to credit intermediation because many other intermediaries, such as used-car dealers, perform a similar function. For more, see work by Greenbaum and Thakor.

[5] This key insight developed by Bryant and formalized in Diamond and Dybvig is arguably the most celebrated work in banking theory.

[6] See Diamond and Dybvig.

[7] See Wheelock and Wilson.

[8] See Morrison and White.

[9] See Admati, DeMarzo, Hellwig and Pfleiderer.

[10] See Anderson and Gascon for details on MMMFs and ABCPs.

[12] The evidence is somewhat different for the tri-party repo market. See Copeland, Martin and Walker for details.

[13] See Gorton and Souleles.

REFERENCES

Admati, Anat R.; DeMarzo, Peter M.; Hellwig, Martin F.; and Pfleiderer, Paul. "Fallacies, Irrelevant Facts, and Myths in the Discussion of Capital Regulation: Why Bank Equity Is Not Expensive." Research Papers 2065, Stanford University Graduate School of Business, 2010.

Adrian, Tobias; Ashcraft, Adam; Boesky, Hayley; and Pozsar, Zoltan. "Shadow Banking." Staff Reports 458, Federal Reserve Bank of New York, July 2010.

Anderson, Richard G.; and Gascon, Charles S. "The Commercial Paper Market, the Fed, and the 2007-2009 Financial Crisis." Federal Reserve Bank of St. Louis *Review*, Vol. 91, No. 6, November 2009, pp. 589-612.

Bryant, John. "A Model of Reserves, Bank Runs, and Deposit Insurance." *Journal of Banking and Finance*, Vol. 4, No. 4, 1980, pp. 335-44.

Copeland, Adam; Martin, Antoine; and Walker, Michael. "The Tri-Party Repo Market before the 2010 Reforms." Staff Reports 477, Federal Reserve Bank of New York, November 2010.

Diamond, Douglas W.; and Dybvig, Philip H. "Bank Runs, Deposit Insurance, and Liquidity." *Journal of Political Economy*, Vol. 91, No. 3, June 1983, pp. 401-19.

Gorton, Gary B. *Slapped by the Invisible Hand: The Panic of 2007.* Oxford University Press, 2010.

Gorton, Gary B.; and Souleles, Nicholas S. "Special Purpose Vehicles and Securitization." in Carey, Mark; and Stulz, René M. eds., *The Risks of Financial Institutions.* University of Chicago Press, 2007.

Greenbaum, Stuart; and Thakor, Anjan V. *Contemporary Financial Intermediation: Second Edition*. Elsevier, 2007.

McCulley, Paul. "Teton Reflections." *PIMCO Global Central Bank Focus,* 2007.

Morrison, Alan; and White, Lucy. "Crises and Capital Requirements in Banking." *American Economic Review*, Vol. 95, No. 5, December 2005, pp. 1548-72.

Wheelock, David C.; and Wilson, Paul W. "Explaining Bank Failures: Deposit Insurance, Regulation, and Efficiency." *The Review of Economics and Statistics,* Vol. 77, No. 4, November 1995, pp. 689-700.

Gender Wage Gap May Be Much Smaller Than Most Think

By Natalia Kolesnikova and Yang Liu

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The gap between earnings of male and female workers has declined significantly over the past 30 years. The Bureau of Labor Statistics reports that in 1979 median weekly earnings of full-time female workers were 63.5 percent of male workers' earnings, implying a gap of 36.5 percent. The earnings gap dropped to 30 percent in 1989 and to 23.7 percent in 1999. In the second quarter of 2011, the gap reached a low of 16.5 percent.

Despite the accuracy of these numbers, many researchers believe that the mere comparison of median weekly earnings of male and female workers presents an incomplete picture. First, women are likely to work fewer hours than men, which would make a gap in *weekly earnings* between the two groups substantial even if their *hourly wages* are the same. For this reason, most economic studies of a gender gap, including all of the studies reviewed in this article, use hourly wages instead of weekly earnings as a measure. Second, many other factors (such as education and labor force attachment) could affect wages. Research suggests that the actual gender wage gap (when female workers are compared with male workers who have similar characteristics) is much lower than the raw wage gap.

Many studies point out that differences in educational attainment, work experience and occupational choice contribute to the gender wage gap. Economists Francine Blau and Lawrence Kahn found that women's gains in education and work experience together accounted for one-third of the decline in the gap in the 1980s and 1990s.[1] As women become more educated, they have more employment opportunities in occupations that require higher skills and pay higher wages.

Such occupational "upgrades" helped to narrow the wage gap. However, there are still significantly fewer women in highly paid occupations. Men are more likely to be lawyers, doctors and business executives, while women are more likely to be teachers, nurses and office clerks. This gender occupational segregation might be a primary factor behind the wage gap.

Another important reason for the gender gap is the difference in labor force attachment between men and women. Women are likely to leave their careers temporarily for childbirth and raising children. Such leaves may be associated with a decrease in human capital and with temporary delays in training and promotion, which consequently lead to lower wages. In addition, women are more likely to work part time and less likely to work overtime than men because of family responsibilities.

One study found that, because women have weaker labor force attachment than men, women tend to be assigned to positions where turnover is less costly.[2] As a result, women are employed in positions that have a shorter duration of on-the-job training and that use less capital. The study concludes that these differences in on-the-job training and capital in positions filled by men and women, along with an implied lower value placed on women's prior labor market experience, account for a substantial part of the gap in wages between males and females.

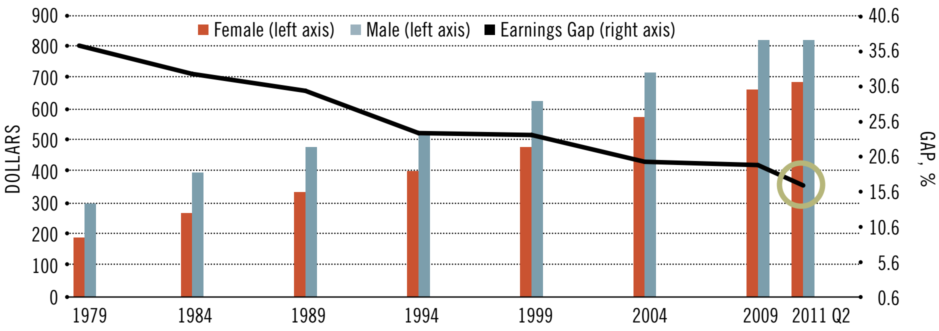
A recent report prepared for the U.S. Department of Labor analyzed the gender wage gap using Current Population Survey (CPS) data for 2007.[3] The report takes into account differences between men and women in educational attainment, work experience, occupation, career interruptions, part-time status and overtime worked. The result is striking—these factors explain approximately three-fourths of the 2007 raw gender hourly wage gap of 20.4 percent. The adjusted 2007 gender hourly wage gap is roughly 5 percent.[4]

To better match women and men with similar characteristics relevant in a job market, another study used the very detailed National Survey of College Graduates 1993 (NSCG), which provides information not only on the highest degree attained, but also on major field of study and labor force experience.[5] To explore racial differences in the gender wage gap, the study compared women of various ethnicities with white men who had similar education, work experience and academic major and who spoke English at home. The study reports a wage gap of 9 percent for white women, 13 percent for black women, 2 percent for Asian women and 0.4 percent for Hispanic women. When the analysis was restricted to unmarried, childless women only, the wage gap shrunk to 7 percent for white women, 9 percent for black women and to virtually zero for Asian and Hispanic women.

Some researchers believe that it is not enough to compare wages of similar men and women. They argue that total compensation

First, women are likely to work fewer hours than men, which would make a gap in *weekly earnings* between the two groups substantial even if their *hourly wages* are the same.

Median Weekly Earnings of Full-time Workers



SOURCE: Bureau of Labor Statistics (BLS).

The graph shows median weekly earnings of males and females as reported by the BLS and the corresponding earnings gap between males and females. For example, in the second quarter of 2011 the gap in weekly earnings was 16.5 percent. The studies reviewed in the article show, however, that the gap in hourly wages between males and females who have similar characteristics is much smaller, about 5 percent, or about $35 a week.

(wages together with benefits) must be compared. Women of child-bearing age may prefer jobs with a lower wage but with employer-paid parental leave, sick leave and child care to jobs with a higher wage but without such benefits. A study that used National Longitudinal Survey of Youth 1979 (NLSY79) found that female workers were indeed more likely to receive family-friendly fringe benefits.[6] Some economists believe that female workers "pay" for the benefits they prefer by accepting a lower wage. If that is the case, excluding fringe benefits would exaggerate the actual gender wage disparity.

Economists Eric Solberg and Teresa Laughlin applied an index of total compensation, which accounts for both wages and benefits, to analyze how these benefits would affect the gender gap.[7] They found a gender gap in *wages* of approximately 13 percent. But when they considered *total compensation*, the gender gap dropped to 3.6 percent.

Despite the difficulty in measuring the gender gap in earnings, the topic attracts much attention of policymakers and pay-equity advocates. Hopefully, continued economic research on the subject will add to a meaningful discussion and will guide effective public policy. Ω

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ENDNOTES

1 See Blau and Khan.
2 See Barron et al.
3 CONSAD Research Corp.
4 It is reasonable to believe, therefore, that the actual gender earnings disparity in the second quarter of 2011 is closer to 4 to 5 percent rather than 16.5 percent as presented in the graph. Put differently, the current gender gap in average weekly earnings is about $35.
5 See Black et al.
6 See Lowen and Sicilian.
7 See Solberg and Laughlin.
8 In our estimation, the gap is 18.4 percent.

REFERENCES

Barron, John M.; Black, Dan A.; Loewenstein, Mark A. "Gender Differences in Training, Capital, and Wages." *Journal of Human Resources*, 1993, Vol. 28, No. 2, pp. 343-64.

Black, Dan A.; Haviland, Amelia M.; Sanders, Seth G.; and Taylor, Lowell J. "Gender Wage Disparities among the Highly Educated." *Journal of Human Resources*, 2008, Vol. 43, No. 3, pp. 630-59.

Blau, Francine D.; and Kahn, Lawrence M. "The U.S. Gender Pay Gap in the 1990s: Slowing Convergence." *Industrial and Labor Relations Review*, 2006, Vol. 60, No. 1, pp. 45-66.

Bureau of Labor Statistics. "Usual Weekly Earnings of Wage and Salary Workers—Second Quarter 2011." July 19, 2011. See http://www.bls.gov/news.release/pdf/wkyeng.pdf

CONSAD Research Corp. "An Analysis of Reasons for the Disparity in Wages between Men and Women." January 2009. See www.consad.com/content/reports/Gender%20Wage%20Gap%20Final%20Report.pdf

Lowen, Aaron; and Sicilian, Paul. " 'Family-Friendly' Fringe Benefits and the Gender Wage Gap." *Journal of Labor Research*, 2009, Vol. 30, No. 2, pp. 101-19.

National Bureau of Economic Research. "CPS Merged Outgoing Rotation Groups, 2010" See www.nber.org/data/morg.html

Solberg, Eric; and Laughlin, Teresa. "The Gender Pay Gap, Fringe Benefits, and Occupational Crowding." *Industrial and Labor Relations Review,* 1995, Vol. 48, No. 4, pp. 692-708.

Gender Earnings Gap in the Eighth Federal Reserve District

How does the raw gender earnings gap in the Eighth District compare with the national gap? The Bureau of Labor Statistics (BLS) does not provide the median weekly earnings data by state or metro area. Fortunately, the National Bureau of Economic Research provides the data used by the BLS for its estimates through 2010. Using these data, we were able to closely replicate the raw U.S. gender earnings gap of 18.8 percent as reported by the BLS for 2010.[8] We then expanded the analysis and calculated the raw gender gaps in weekly earnings for states and large metro areas in the Eighth Federal Reserve District.

Among the states within the Eighth District, Arkansas has the lowest gender earnings gap (18.5 percent), slightly better than the national gap. Gender earnings gaps in Tennessee (19.4 percent) and Mississippi (20.5 percent) are slightly higher than the nation's, while the gap in Illinois (22.2 percent) is 21 percent higher than the nation's. Kentucky (24.3 percent), Missouri (24.8 percent) and Indiana (25.0 percent) have the highest gender earnings gaps among the Eighth District's states, each about a third above the national average.

All major metro areas within the Eighth District exhibit higher gender earnings gaps than the national average. Memphis has a gender earnings gap of 23.3 percent, while Louisville posts a gap of 23.4 percent. Despite Arkansas' having the lowest gender earnings gap among the Eighth District's states, the gender gap in Little Rock is as high as 25 percent. St. Louis has the highest gender gap among the major metro areas in the District (27.3 percent), which is 48 percent higher than the national average.

The available data do not allow us to estimate the degree to which differences in education, occupational choice, and labor force experience and attachment between men and women in the Eighth District account for higher gender earnings gaps in the District.

Worth Your Weight? Re-examining the Link between Obesity and Wages

By Michael T. Owyang and E. Katarina Vermann

Since 1960, the percentage of American adults who are overweight or obese has risen from 46 percent to 74 percent.[1] The clinically overweight are those with a body mass index (BMI)[2] between 25 and 30; the clinically obese have a BMI greater than 30. Not only are heavier individuals at greater risk for coronary heart disease, hypertension and other health problems, but, according to obesity specialists Rebecca Puhl and Chelsea Heuer, are "highly stigmatized … [and this] weight bias translates into inequities in employment settings, health-care facilities and educational institutions … leaving [them] vulnerable to social injustice, unfair treatment and impaired quality of life."[3]

If such a stigma exists, does this mean that your weight can affect your wage?

Although wage penalties may exist because of stigma, they also exist because of differences in productivity or perceived productivity. Overweight or obese individuals, for example, might receive lower wages if employers believe that their weight could affect their health and, thereby, their productivity. Others contend that—because weight is tied to appearance—an overweight/obesity wage penalty is the flip side of the beauty premium. Finally, wage differentials might reflect differences in socioeconomic status and education, as the rates of obesity/overweight are higher among groups with lower socioeconomic status.

The Obesity Penalty?

Economic studies relating wages and weight suggest that obese women are less likely to be employed, relative to "normal" weight individuals (BMI of 20 to 25). Among the employed, heavier women tend to earn less. These penalties have not only increased over the past few decades, but continue to increase as women age.

The wage penalty for women also varies by race. Economist John Cawley estimates that overweight and obese white women earn 4.5 and 11.9 percent less, respectively, than normal weight white women. Among African-American and Hispanic women, on the other hand, obese women earn between 6 and 8 percent less than those of the same race with a BMI under 25; there is no penalty for black or Hispanic women who are only overweight. A similar study by economists Christian Gregory and Christopher Ruhm found that the wages of white women peak at a BMI of 22.5 (well within the normal range), while wages for black women peak at a BMI of 26.1 (just above the normal range).

Unlike the findings for women, which consistently indicate the presence of a weight-wage penalty, the results for men are more ambiguous. Some studies found that underweight and obese white males earn less than their normal weight counterparts, while overweight white males earn more. Not only is the relationship between earnings and weight inconsistent across weight categories, but inconsistent across races. To illustrate, a 2004 study estimated that obese Hispanic males earn less than normal weight Hispanic males, but obese African-American males earn more than normal weight black males. Other studies found that overweight/obese status rarely affects hourly wages for males but does decrease the likelihood of being employed for all males except African-Americans.[4]

Is BMI the Wrong Measure?

The apparent discrepancy between the genders, however, may be misleading. Most studies that examine the relationship

FIGURE 1

Women's Income and Body Size

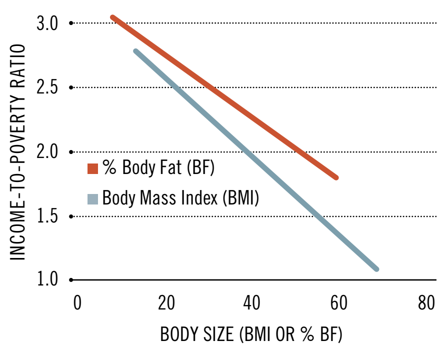
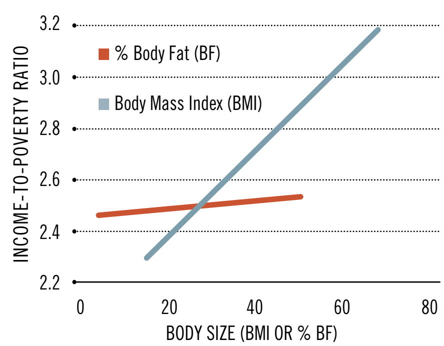


FIGURE 2

Men's Income and Body Size



SOURCE: National Health and Nutrition Examination Survey.

For the poverty index in the charts, a value below 1 indicates that the family's income is below the poverty threshold. (For example, a value of 0.87 would indicate that the family's income is 87 percent of the poverty threshold.) A value above 1 indicates that the family's income is above the poverty threshold. (A value of 1.87 would indicate that the family's income is 187 percent of the poverty threshold.)

between weight and wages use BMI, which categorizes individuals based solely on weight and height. The medical literature, however, argues that BMI is problematic because it is largely arbitrary: It emerged because the insurance industry wanted a measure for the mortality risk associated with weight gain. As such, the "normal" range for BMI was defined because of its correlation with the lowest risk of death (based on life insurance tables).[5] Further, BMI is a poor proxy for excess fat, as the index provides no information on body shape and has no way to distinguish body fat from lean body mass.

In a study last year, economists Joanna Parks, Aaron Smith and Julian Alston recommended using a measurement of body fat that takes into account weight, height and body composition, rather than using BMI. According to these economists' measures, BMI overestimates the prevalence of underweight, normal weight and overweight males, while underestimating the prevalence of obese males because BMI understates differences in body fat. Among women, BMI overestimates the prevalence of underweight and normal weight women, while underestimating the prevalence of overweight and obese women. As a result, approximately 60 percent of men and 45 percent of women are misclassified into weight categories when using BMI as opposed to using percent body fat or percent fat-free mass. This finding indicates that national health statistics are likely to underestimate the true prevalence of people who are overweight or obese.

Alternative to BMI Changes Results

The accompanying figures show the relationship between an individual's weight and household income-to-poverty ratio using data from the National Health and Nutrition Examination Survey. The panels depict how the weight-wage relationship changes depending on the measure used.

Figure 1 shows the relationship between income-to-poverty ratios and both BMI and percent body fat for women. This relationship is more pronounced when using BMI. Regardless of the measure used, there remains a negative relationship between body size and economic status. Since the income-to-poverty ratio is a proxy for socioeconomic status, this finding may imply that studies attributing a wage penalty to a woman's body weight may be picking up on unmeasurable differences in social class.

Figure 2 shows a clear, positive relationship between higher body mass and higher income-to-poverty ratios for men. For body fat, however, the relationship with wages is much less apparent. Instead, there appears to be very little association between economic standing and body fat. Regardless, Figure 2 suggests that BMI may overestimate the relationship between wages and weight, or that the estimated correlation between wages and weight may be spurious.

Because of the potential problems with using BMI as a measure of obesity, a 2010 study by economists Roy Wada and Erdal Tekin used percent body fat and percent fat-free mass to examine the weight-wage gap. This study found that increases in body fat reduce wages but that increases in fat-free mass increase wages. For example, a one kilogram increase in body fat was associated with approximately a 1 percent decrease in wages for all groups except black males. At the same time, a one kilogram increase in fat-free mass increases wages between 1.4 and 1.8 percent for males and between 0.3 to 0.5 percent for females.

Summary

Studies that use BMI as a measure of body fat find inconsistent evidence for an obesity wage penalty both across genders and races. However, later studies that examine wages and weight controlling for body composition find that, regardless of gender and race, excess weight due to fat is statistically related to lower wages, but excess weight due to muscle is statistically related to higher wages, regardless of occupation. These findings indicate that there is, in fact, a consistent wage penalty for body fat and a wage premium for muscle, but discrimination might not necessarily be the cause. While the results support the notion that appearance is an important determinant of wages, the average wage differentials could exist if employers believed health and productivity were related and/or if high body fat were taken as a signal of possible long-term poor health. Ω

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ENDNOTES

1 See www.cdc.gov/NCHS/data/hestat/obesity_adult_07_08/obesity_adult_07_08.pdf
2 Calculated as mass / height^2. Mass is in kilograms, and height is in meters.
3 See Puhl and Heuer.
4 Nonetheless, Cawley's findings are attributable to unobserved heterogeneity: Lighter white males have more human capital than heavier white males, while heavier black males have more human capital than lighter black males.
5 See Parks, Smith and Alston.

REFERENCES

Burkhauser, Richard V.; and Cawley, John. "Beyond BMI: The Value of More Accurate Measures of Fatness and Obesity in Social Science Research," *Journal of Health Economics*, March 2008, Vol. 27, No. 2, pp. 519-29.

Cawley, John. "The Impact of Obesity on Wages." *Journal of Human Resources*, Spring 2004, Vol. 39, No. 2, pp. 451-74.

Gregory, Christian A.; and Ruhm, Christopher J. "Where Does the Wage Penalty Bite?" in Michael Grossman and Naci H. Mocan, eds., *Economic Aspects of Obesity*. National Bureau of Economic Research. Chicago: University of Chicago Press, 2011.

Han, E.; Norton, E.C.; and Stearns, S.C. "Weight and Wages: Fat Versus Lean Paychecks." *Health Economics*, May 2009, Vol. 18, No. 5, pp. 535-48.

Parks, Joanna C.; Smith, Aaron D.; and Alston, Julian M. "Quantifying Obesity in Economic Research: How Misleading Is the Body Mass Index?" Working Paper No. 61841, Agricultural and Applied Economics Association, 2010.

Puhl, Rebecca M.; and Heuer, Chelsea A. "The Stigma of Obesity: A Review and Update." *Obesity Research*, 2009, Vol. 15, No. 5, pp. 941-64.

Wada, Roy; and Tekin, Erdal. "Body Composition and Wages," *Economics and Human Biology*, July 2010, Vol. 8, No. 2, pp. 242-54.

These findings indicate that there is, in fact, a consistent wage penalty for body fat and a wage premium for muscle, but discrimination might not necessarily be the cause.

Immigrants: Skills, Occupations and Locations

By Rubén Hernández-Murillo and Christopher J. Martinek

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In a previous *Regional Economist* article, we remarked that in order to assess the costs and benefits of immigration (both legal and illegal) one has to consider the distribution of skills in the foreign-born population and compare it with the distribution of skills among U.S.-born workers.[1] Although an influx of low-skilled immigrants tends to negatively affect the wages of similarly skilled U.S.-born workers, this influx could increase the productivity of medium-skilled workers, who comprise the majority of U.S.-born workers, if their skills complement each other's.

Not only is the distribution of skills among the foreign-born population widely different from that of their U.S.-born counterparts, but the choices these immigrants make when deciding where to live in the U.S. also differ considerably from those choices made by natives. Furthermore, for similar levels of skill or education, immigrant workers tend to choose different occupations than native workers do.

Identifying the differences in the composition of skills across local markets can help analyze the impact of immigration because an increase in the number of immigrants may have different effects across locations. There may also be effects unrelated to the effects on wages. For example, low-skilled immigrants have had a positive impact on the labor supply decisions of high-skilled U.S.-born women. For another example, high-skilled immigrants have boosted the innovation rate in the U.S.

Geographic Distribution

A recent report by the Brookings Institution that uses data from the 2009 American Community Survey summarized the skills composition among the foreign-born and U.S.-born populations across the 100 largest metropolitan statistical areas (MSAs). Foreign-born workers have, for the most part, either low or high levels of skills; therefore, the ratio of high-skilled individuals (those with a bachelor's degree or higher) to low-skilled individuals (those with less than high school education) of working age provides a concise, representative measure of their skills distribution. Across the largest 100 metropolitan areas, the study found, the ratio of high-skilled to low-skilled individuals among the foreign born varied considerably.

The table presents a list of the top and bottom 10 MSAs ranked in terms of the skill ratio among the foreign-born population for 2009. The average skill ratio among the top metro areas was 275, indicating that high-skilled workers outnumbered low-skilled workers by 2.75 to 1. Among the bottom 10 metro areas, the average ratio was 29. Among the top metro areas, St. Louis, Mo.-Ill., with a skill ratio of 305, ranked in third place. Its ratio indicates that a very large proportion of foreign-born workers in this city are high-skilled and outnumber low-skilled immigrants by about 3 to 1. Immigrants, however, represent only a small proportion of the overall population in the top 10 MSAs, 5.4 percent on average. The bottom 10 MSAs, in contrast, have a substantially larger proportion of immigrants, 19.4 percent on average. The 10 MSAs with the lowest skill ratio among the foreign-born are almost all located in California, New Mexico or Texas, while the 10 MSAs with the highest skill ratio among the foreign-born are scattered mostly across the Northeast and Midwest.

The skill composition of immigrants does not necessarily line up with the skill composition of U.S.-born workers. Among the bottom 10 MSAs, the skill ratio among the foreign-born population is substantially lower than that for the native population, while among the top 10 MSAs, the ratios are more similar. Also, the 10 metropolitan areas with the lowest skill ratios among foreign-born workers had larger population growth overall than areas with higher skill ratios.

Occupational Choices

The skill ratios discussed above were computed in terms of educational attainment levels, but immigrant workers differ from the native population also in terms of their occupation choices. Even within similar education levels, foreign-born workers choose very different occupations than native workers do.

A recent study by economist Todd Schoellman analyzed the connection between immigrants' skills and their occupational choices. He defined skills broadly in terms of education, training and experience, cognitive ability, physical skills, and language and communication skills. Immigrants are more likely than natives to work in manual occupations that are intensive in physical ability skills; immigrants are also more likely than natives to work in occupations that are intensive in cognitive ability, particularly in science and engineering. In contrast, natives are more likely to work in communications-intensive occupations, such as management, and in experience- and training-intensive occupations, such as repair services.

A similar study by economists Giovanni Peri and Chad Sparber focused only on immigrants and native workers with graduate degrees. Categorizing skills into two broad types, they found that immigrants and native workers choose different occupations. Highly educated immigrants specialize in occupations that require quantitative and analytical skills, while highly educated natives specialize in occupations that require interactive and communication skills.

Unexpected Effects of Immigration

Economists Patricia Cortés and José Tessada recently found that the rise in low-skilled immigration during the 1980-2000 period increased the hours that highly educated U.S.-born women devote to work outside the home and decreased the amount of time that these women devote to household work (and consequently increased the amount they spend on housekeeping services contracted in the market).

The reason for this effect is not too surprising: Low-skilled immigrants work disproportionately in sectors that provide services that are close substitutes for services that would otherwise be produced in the home (such as gardening, housekeeping and child care). The recent waves of low-skilled immigration have caused the prices of these services to fall. This price decline, in turn, has led women to reduce their own time spent producing these services at home and to instead purchase them in the market at reduced prices. It turns out that women at the top quartile of the wage distribution are most likely to benefit from the exchange because their time in the workplace is more valuable than what it costs them to hire out household services. In fact, the authors found only reduced effects for women with wages above the median wage but below the top quartile and no effect for women with wages below the median.

Looking at the opposite end of the skill spectrum, economists Jennifer Hunt and Marjolaine Gauthier-Loiselle assessed the impact of high-skilled immigrants on the rate of innovation in the U.S., as measured by the count of patents for each person in the U.S. Understanding this connection is important because the rate of innovation has been linked in other studies to the rate of technological progress, productivity and, ultimately, economic growth. The authors analyzed the rise in the share of population of college-graduate immigrants during the period 1990-2000 and found that it led to an increase in patents per capita of up to 21 percent. Focusing only on the rise in the share of population of immigrant scientists and engineers with post-college degrees, the authors found an increase in patents per capita of up to 32 percent. Their estimates account for the possibility of positive and negative spillover effects.

The ways high-skill immigrants increase the patent rate include direct effects, through the greater concentration of the foreign-born in science and engineering occupations relative to U.S.-born individuals with similar levels of education, and via indirect effects, by making natives move innovative through collaboration. Even immigrants who do not get patents themselves, the authors explain, may provide support to U.S.-born scientists by providing complementary skills or by founding high-tech companies. Of course, a larger presence of immigrant scientists may have negative effects if it discourages natives from working in science and engineering, but that does not seem to be the case. Ω

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Skill Ratios in the 100 Largest Metropolitan Statistical Areas (MSAs)	MSA Population Size Ranking	Percent Foreign-born Population	Native Skill Ratio	Foreign-born Skill Ratio	MSA Total Population Growth: 2005-2009
Top 10 MSAs by Skill Ratio of Foreign-born					
Pittsburgh, Pa.	22	3.01%	305.8	391.3	1.73%
Dayton, Ohio	61	3.02	212.7	330.2	2.17
St. Louis, Mo.–Ill.	18	4.03	257.7	304.9	3.69
Baltimore–Towson, Md.	20	8.28	294.1	278.8	4.14
Cincinnati–Middletown, Ohio–Ky.–Ind.	24	3.76	226.7	274.9	7.14
Madison, Wis.	88	6.26	808.5	259.1	9.76
Virginia Beach–Norfolk–Newport News, Va.–N.C.	36	5.84	260.1	231.7	5.70
Harrisburg–Carlisle, Pa.	96	4.49	255.2	230.7	7.31
Jacksonville, Fla.	40	7.99	233.4	223.4	8.49
Albany–Schenectady–Troy, N.Y.	57	6.92	367.2	221.8	5.09
Average for the Top 10		**5.36%**	**322.1**	**274.7**	**5.52%**
Bottom 10 MSAs by Skill Ratio of Foreign-born					
Providence–New Bedford–Fall River, R.I.–Mass.	37	12.54%	247.4	42.1	2.21%
Albuquerque, N.M.	58	9.69	336.5	38.8	9.22
Riverside–San Bernardino–Ontario, Calif.	14	21.32	169.1	38.6	8.23
Lakeland–Winter Haven, Fla.	87	10.25	121.4	37.0	10.05
Stockton, Calif.	78	23.74	134.5	32.6	4.43
El Paso, Texas	68	25.35	175.4	26.3	6.07
Fresno, Calif.	54	21.43	149.5	22.5	6.56
Modesto, Calif.	100	20.90	119.7	21.3	2.53
McAllen–Edinburg–Mission, Texas	70	28.98	90.2	18.1	10.30
Bakersfield, Calif.	63	19.72	95.6	13.3	11.49
Average for the Bottom 10		**19.39%**	**163.9**	**29.1**	**7.11%**

Data are from the 2005 and 2009 American Community Survey. The skill ratio is defined as the ratio of those with a bachelor's degree or higher to those with less than a high school degree, multiplied by 100.

ENDNOTE

[1] See Hernández-Murillo, 2006.

REFERENCES

Cortés, Patricia; and Tessada, José. "Low-Skilled Immigrations and the Labor Supply of Highly Skilled Women." *American Economic Journal: Applied Economics*, Vol. 3, No. 3, July 2011, pp. 88-123.

Hall, Matthew; Singer, Audrey; De Jong, Gordon F.; and Graefe, Deborah Roempke. "The Geography of Immigrant Skills: Educational Profiles of Metropolitan Areas." *State of Metropolitan America Series*. Washington, D.C.: Brookings Institution, June 2011.

Hernández-Murillo, Rubén. "Adding Up the Effects of Immigration." *The Regional Economist*. October 2006, Vol. 14, No. 4, pp. 12-13.

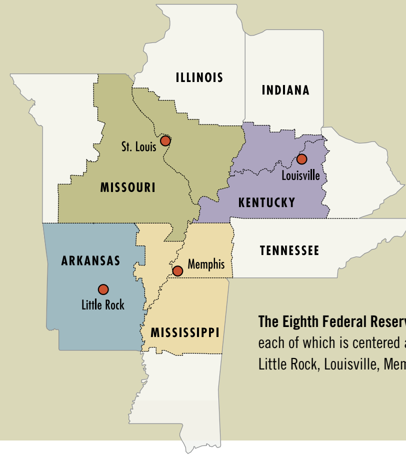
Hunt, Jennifer; and Gauthier-Loiselle, Marjolaine. "How Much Does Immigration Boost Innovation?" *American Economic Journal: Macroeconomics*, Vol. 2, No. 2, April 2010, pp. 31-56.

Peri, Giovanni; and Sparber, Chad. "Highly Educated Immigrants and Native Occupational Choice." *Industrial Relations: A Journal of Economy and Society,* Vol. 50, No. 3, July 2011, pp. 385-411.

Schoellman, Todd. "The Occupations and Human Capital of U.S. Immigrants." *Journal of Human Capital*, Vol. 4, No. 1. Spring 2010, pp. 1-34.

Revised Data Show that District Gained, Not Lost, Jobs in 2010

By Natalia Kolesnikova and Yang Liu



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

On March 11, 2011, the Bureau of Labor Statistics (BLS) released its annual benchmark revision to the April 2009—December 2010 payroll employment data for metro areas in the United States. The revision incorporates information from a comprehensive count of employment and provides more accurate estimates of actual payroll employment. (See the sidebar for a discussion of the revision details.) This revision is particularly interesting because it reveals the development in national and local job markets during 2010, the second year of the economic recovery.

Employment in the Eighth District

The annual revision suggests that the recent performance of the Eighth Federal Reserve District labor market is more robust than originally reported but still weaker than the nation's. The new data indicate that the Eighth District gained 15,200 jobs in 2010, rather than losing 7,800 jobs, as estimated earlier. Percentage-wise, employment growth was revised from a 0.2 percent decline to a 0.4 percent increase. The revised 2010 District employment growth rate, however, remained below the national average of 0.7 percent.

As the table shows, revisions for different metropolitan areas in the Eighth District were quite mixed, with the employment growth being revised upward for some metro areas and revised downward for others. (The latter are highlighted in blue.)

St. Louis

Employment in the St. Louis metro area for December 2010 is now estimated to have been 1,299,300, which is a decrease of 700 jobs from the original estimate. Still, the St. Louis labor market generated more jobs during 2010 than initially thought. The December 2009 to December 2010 job growth rate was revised from 0.2 percent to 0.7 percent because of a moderate downward revision of December 2009 payroll employment (to 1,290,100 from 1,297,200). At the industry level, the largest positive revisions of 2010 job growth occurred in the leisure and hospitality sector (to 3,800 jobs from 600) and in the professional and business services sector (to a gain of 600 jobs from a loss of 1,600 jobs). Meanwhile, government jobs were subject to a substantial downward revision (to a loss of 2,200 jobs from a gain of 100 jobs).

Little Rock

The revision completely reversed the employment growth picture in Little Rock. December 2010 payroll employment was revised upward to 340,800 from 332,700, while December 2009 payroll employment experienced a relatively small revision to 338,000 from 336,600. As a result, the 2010 employment growth rate is now 0.8 percent, significantly higher than the original estimate of –1.2 percent. This change indicates that Little Rock not only experienced labor market recovery during 2010, but also had the highest employment growth among the District's large metro areas. The professional and business services sector saw the largest revision, from a loss of 2,000 jobs to a gain of 2,200 jobs.

Louisville

Before the revision, payroll employment in Louisville was estimated to be 588,000 in December 2010 and 595,500 in December 2009. The new report decreased the December 2009 employment numbers by 200 but raised December 2010 employment numbers by 5,700. Because of this, Louisville lost fewer jobs than originally estimated. The 2010 employment growth rate was revised upward to –0.3 percent from –1.3 percent. At the industry level, the manufacturing and the trade/transportation/utilities sectors experienced significant positive revisions. Manufacturing jobs were revised from a loss of 3,500 to a gain of 1,300, and trade/transportation/utilities jobs were revised from a loss of 2,200 to a gain of 400. In contrast, the natural resources/mining and the construction sectors lost more jobs than initially estimated. The new numbers indicate a loss of 4,400 jobs rather than the previously estimated loss of 2,100 jobs.

Memphis

In Memphis, the overall negative employment growth was only slightly affected by the revised data. December 2010 payroll employment is now at 591,000 jobs (an upward revision of 1,300 jobs from the original estimate), while the December 2009 payroll employment is now at 598,100 jobs (an upward revision of 2,700 jobs). These changes indicate that Memphis lost slightly more jobs than originally estimated. Its 2010 employment growth rate dropped to –1.2 percent from –1.0 percent.

Although the overall employment growth was changed slightly by the revision, payrolls in several sectors were affected considerably. Government jobs were revised downward from a gain of 300 jobs to a loss of 2,000 jobs during 2010. The leisure and hospitality sector lost 3,900 jobs (1,700 more jobs than originally estimated). The professional and business services sector saw an upward revision: Its employment growth is now estimated at 2,700 jobs, compared with a loss of 100 jobs in the initial report.

How the Data Are Collected

Current Employment Statistics (CES) is a monthly survey that is compiled from information from about 140,000 businesses and government agencies, representing approximately 410,000 individual work sites around the United States. Although the survey covers hundreds of thousands of employers, these employers make up only a small percentage of all businesses and work sites in the country.

The Quarterly Census of Employment and Wages (QCEW) is a tabulation of employment information for workers covered by state and federal unemployment insurance programs. As its name suggests, the QCEW is a census that achieves nearly 100 percent sampling of the nation's employment and is, therefore, very accurate. Lags in the compilation of the data, however, mean that the QCEW is not a very good source for up-to-date information.

To bridge the gap, the Bureau of Labor Statistics (BLS) augments the CES with an estimate of the number of establishments in the area. This can be difficult: When the economy is going into a recession, for example, old firms might be going out of business, while the formation of new firms might be slowing. The BLS doesn't find out about the changes until the unemployment insurance records are updated, which can take several months or more. This lag is compounded by the fact that small firms might need to provide unemployment insurance information only once a year rather than monthly or quarterly, as is required of larger firms.

Because of the lags and revisions to the QCEW data, the annual benchmarking affects employment data from the CES going back 21 months. Consequently, the estimates that were released in March have affected the yearly employment changes for 2009 and 2010. Note also that the estimates for job growth in 2010 will change again in March 2012, when the data for 2010 will once again be revised in the annual benchmark revision process.

ENDNOTE

[1] The sidebar is updated from Garrett and Pakko.

REFERENCE

Garrett, Thomas A.; and Pakko, Michael R. "Annual Revision of Metro Jobs Data Shows Little Change from Earlier Reports." *The Regional Economist*, Vol. 17, No. 2, April 2009, pp. 24-25.

Small and Medium Metro Areas

Some significant revisions occurred for the 15 smaller metro areas in the Eighth District. Nine of these metro areas experienced upward revisions of employment growth, while the other six saw downward revisions.

The annual revision improved the 2010 job market picture in the Fayetteville, Ark., and Evansville, Ind., metro areas. New data indicate that payroll employment in Fayetteville rose 1.6 percent during 2010, rather than declined 1.1 percent as initially estimated. Specifically, trade/transportation/utilities jobs were revised from a loss of 500 jobs to a gain of 1,400 jobs. Similarly, Evansville saw a 1.5 percent rise in payroll employment compared with a 0.6 percent drop in the original data release. Government jobs in Evansville were revised from a loss of 900 jobs to a gain of 600 jobs.

The Elizabethtown, Ky., metro area had a positive revision of employment growth—to 5.1 percent from 2.6 percent. Its professional and business services sector generated 800 more jobs than initially reported.

The largest downward revision occurred for the Hot Springs, Ark., metro area. The 2010 payroll employment growth rate was revised to –0.3 percent from 4.1 percent. Ω

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Metro-Area Employment Changes

	December 2009 – December 2010			
	Original Estimate as of January 2011		Revised Estimate as of March 2011	
	Thousands of Jobs Lost or Gained	Percent Change	Thousands of Jobs Lost or Gained	Percent Change
Large Metro Areas				
Little Rock–N. Little Rock, Ark.	–3.9	–1.2%	2.8	0.8%
Louisville, Ky.–Ind.	–7.5	–1.3	–1.6	–0.3
Memphis, Tenn.–Ark.–Miss.	–5.7	–1.0	–7.1	–1.2
St. Louis, Mo.–Ill.	2.8	0.2	9.2	0.7
Small and Medium Metro Areas				
Columbia, Mo.	0.5	0.5	1.1	1.2
Jefferson City, Mo.	0.2	0.3	0.5	0.6
Springfield, Mo.	3.5	1.8	0.4	0.2
Fayetteville–Springdale–Rogers, Ark.	–2.2	–1.1	3.2	1.6
Fort Smith, Ark.–Okla.	–0.7	–0.6	–0.2	–0.2
Hot Springs, Ark.	1.5	4.1	–0.1	–0.3
Jonesboro, Ark.	0.4	0.8	0.7	1.4
Pine Bluff, Ark.	–0.6	–1.6	–1.2	–3.2
Texarkana, Texas–Ark.	1.3	2.3	0.6	1.1
Evansville, Ind.–Ky.	–1.0	–0.6	2.5	1.5
Bowling Green, Ky.	0.9	1.5	1.2	2.0
Elizabethtown, Ky.	1.2	2.6	2.3	5.1
Owensboro, Ky.	0.6	1.2	0.1	0.2
Clarksville, Tenn.–Ky.	0.8	1.0	0.9	1.1
Jackson, Tenn.	0.1	0.2	–0.1	–0.2
Eighth District Total	**–7.8**	**–0.2%**	**15.2**	**0.4%**

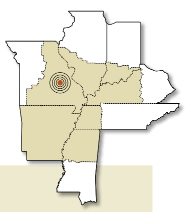
SOURCE: Bureau of Labor Statistics.

The table shows how the estimates of jobs lost and gained between December 2009 and December 2010 changed between reports that came out in January and March 2011. For example, according to the estimate released in January 2011, the St. Louis metropolitan statistical area (MSA) had gained 2,800 jobs between December 2009 and December 2010. But, according to the revised estimate that was released in March 2011, the St. Louis MSA had gained 9,200 jobs between December 2009 and December 2010. Downward revisions (between the two reporting periods) are in blue.

Plentiful Green Space along Interstate
Drives Economy of Tiny Missouri Town

PHOTO BY STEVE SMITH STUDIOS

St. James had what Wal-Mart wanted—200 flat, buildable acres near an interchange. In return, the town got 1,000 jobs.



St. James/Phelps County, Mo.
by the numbers

	CITY	COUNTY
Population	4,216	45,156 *
Labor Force	NA	22,300 **
Unemployment Rate	NA	7% **
Per Capita Personal Income	NA	$39,768 ***

* U.S. Census Bureau, 2010 census
** BLS/HAVER, July 2011, seasonally adjusted
*** BEA/HAVER, 2009

LARGEST EMPLOYERS

Wal-Mart Distribution Center	1,000
Boys & Girls Town of Missouri	280
St. James Public Schools	225 †
Missouri Veterans Home	185
Tacony Corp.	150

SOURCE: Self-reported
† Includes five part-time

By Susan C. Thomson

Interstate 44 runs more than 600 miles across the center of the country, between St. Louis and Wichita Falls, Texas—and right through St. James, Mo. The tiny town has parlayed the thoroughfare that divides it and the acres of developable land nearby into its biggest economic assets.

For Tacony Corp., one of the initial attractions to St. James was its location just 80 miles down I-44 from the company's corporate headquarters in suburban St. Louis, says the president and chief operating officer, Bill Hinderer. Bucking a trend, the privately held company moved manufacturing to the United States from Asia. Hinderer says Tacony was unhappy with the quality of the vacuum cleaners it was making in Taiwan and with the engineering expertise there for product development.

To help make the move possible, the city of St. James secured $153,240 in state and federal grants and added $50,000 out of its own coffers to upgrade and improve street access to a vacant, city-owned building. Tacony started out there in 1997, with 30 employees. It now has five times that number.

The interstate worked again in the city's favor when Wal-Mart was scouting a 100-mile stretch of I-44 for a site for a regional distribution center. The company found in St. James exactly what it had been seeking—200 flat, buildable acres near an interchange.

In 2001, less than a mile from the intersection of I-44 and state Highway 68, Wal-Mart opened its center. Hiring 1,000 people right off the bat, Wal-Mart immediately became, by far, St. James' largest employer ever. State and federal grants totaling $182,500 paid for utilities and a new access road. The city issued $59 million in 20-year industrial revenue bonds to buy the land and to build and equip the 1.2-million-square-foot center. The company is leasing it all for an amount equal to the principal and interest and will become the owner when the bonds are paid off.

From its investments in the two companies, the city's payoff has been hundreds of jobs—secure and with competitive wages and benefits, says Bob Wilson, executive vice president of Phelps County Bank and a long-time member of St. James' Industrial Development Authority (IDA). "We now have younger citizens staying in the area to work and raise a family," he says.

The new corporate jobs have also plumped up the cushion against economic jolts, a cushion that has long been provided by the city's substantial base of steady public and nonprofit employers.

One of these is the private social service agency originally called Boys Town, a St. James mainstay since its 1949 founding as a home for troubled boys. It went on to serve girls as well, change its name accordingly and offer outpatient care. Since merging in 2009 with an agency in St. Louis, it has moved its headquarters there while keeping its 442-acre St. James campus.

The Missouri Veterans Home, one of seven the state operates, has been a St. James stalwart since the home's founding in 1896. Fifteen years ago, it moved into a new 150-bed building on the same park-like, 40-acre site.

The city also gets a sustaining economic lift from a private philanthropy, the James Foundation. Lucy Wortham James (1880-1938), a descendant of the family that established an ironworks in the area in 1826 and gave the town its name, set it up for her hometown's benefit. Annual income of about $1.7 million from the trust's investments maintains the city's park, cemetery and library, as well as the 1,860-acre Maramec Spring Park, a few miles southeast of town. The foundation also sets aside $5,000 a year for grants to various civic betterment projects. It deeded 2.25 park acres to the city for the $2 million swimming pool it opened this past summer.

The foundation has been a community cornerstone, "a critical element for stability and beautification over the years," says Peter Hofherr, chief executive of St. James Winery.

PHOTO BY SUSAN C. THOMSON

PHOTO BY STEVE SMITH STUDIOS

PHOTO BY STEVE SMITH STUDIOS

His family-owned business is the largest of the state's approximately 100 wineries, with sales of about 500,000 gallons last year, a 9 percent increase from 2009. St. James is also home to Meramec Vineyards, and there are three other wineries within a few miles.

Capitalizing on the local wine culture, the St. James Chamber of Commerce underwrites four wine and grape-themed festivals a year, three of them new since 2009. Attendance increases at each of the two- and three-day festivals every year, according to the chamber's president, Renee Ridling. "I think our future in St. James is going to be enhanced by tourism growth," she says. To better promote it, the chamber took over the city's tourist information center near I-44 and expanded its hours in mid-2011.

Top Left: Ken Wilkinson assembles a vacuum cleaner at the Tacony Corp. plant in St. James. Tacony, based in St. Louis, moved its manufacturing from Taiwan to the U.S. because it wasn't happy with the quality of the work or the product development expertise it had found overseas.

Top Right: At St. James Winery, Jimmy Bailey (left) and Trevor Metzger transfer "must" to tanks for the first pressing of a batch of grapes.

Bottom: In the tasting room at St. James Winery, Maribeth Wronkiewicz prepares to serve customers. St. James Winery is the largest of about 100 wineries in the state and one of about five in the St. James area. To draw tourists to the St. James area, several wine and grape-themed festivals are held every year.

PHOTO BY STEVE SMITH STUDIOS

PHOTO BY SUSAN C. THOMSON

PHOTO BY STEVE SMITH STUDIOS

PHOTO BY STEVE SMITH STUDIOS

Top: The city's library and new swimming pool are among the legacies of a private philanthropy, the James Foundation, which was established by a descendant of the family that gave the town its name.

Above Left: Buel F. Leuthen enjoys the fresh air at the Missouri Veterans Home in St. James, one of the nonprofit employers that have kept the economy on an even keel over the decades.

Above Right: Tom Gasko relaxes at Tacony's vacuum cleaner museum, where he is the curator. Room after room of vacuums—some at least 100 years old—help to draw tourists to St. James. Gasko, a longtime collector, donated the vacuums.

Around the same time, the city acquired yet another tourist attraction when Tacony opened a vacuum cleaner museum. The display of machines, dating back to the early 1900s, is in the company's present plant in the city's 121-acre industrial park. To accommodate the growing company's move from its original location, the city gave it 11.4 park acres valued at $228,000.

The company has expanded its new building three times to a total of 200,000 square feet as it boosted production and added jobs, most recently 35 of them in 2009 and 2010, Hinderer says. Along the way, the city has arranged $518,849 in community development block grants, which were used to build a new water storage tank for the plant and to pave and light an access street.

Tacony is the only full-line vacuum cleaner plant left in the U.S., producing the high-end Riccar and Simplicity brands, sold through dealers. With the move stateside, the company has "succeeded in making higher quality products, better engineered for the U.S. market but at higher costs," Hinderer says. But the move has been worth it, he insists.

Tacony is the largest tenant in the park, which is home to 10 businesses, including two machine shops, a cabinet manufacturer, a concrete block maker, the offices of a trucking company and a new high-tech startup.

The last is Product Innovation and Engineering LLC, which sells unique software for high-speed manufacturing. The software was developed at the National Science Foundation's Small Business Technology Transfer program at Missouri University of Science and Technology (MS&T) in Rolla, Mo. The software was based on research by Frank Liou, a professor there. The eight-employee company, now co-owned by Liou and his wife, Lisa, put up a 3,500-square-foot building in the industrial park and moved there in July. Lisa Liou is president.

The company took advantage of the city's offer of 1.5 free acres in the industrial park for every eight jobs created there. The offer stands, and about half of the 30-year-old park remains available.

For years, the city hoped to find a single taker for one 40-acre parcel there, says Butch Tucker, president of the Industrial Development Authority. That no longer seems realistic to him. Nor does he expect more developments on a Wal-Mart scale or, given the current international business climate, more corporate repatriates like Tacony.

Hinderer agrees. Although reaction to the company's move has been overwhelmingly positive, he says, he knows of no others that have followed suit as a result.

While receptive to prospects of any size, the IDA is mostly counting on smaller manufacturing, wholesale and retail enterprises, Tucker says.

"Home runs [like Tacony and Wal-Mart] are few and far between," says Brad Frazier, the Wal-Mart center's civic-minded general manager. "What I'd like to see is a group of smaller businesses"—singles, in baseball terms. As possibilities, he and others mention more spin-offs from MS&T, which is just 10 miles away.

Community leaders are just as eager for more commercial development. In the city's local customer base, they count not only residents but also Wal-Mart's 1,000 employees, drawn from as far as 50 miles away. These people are already shopping at local gas stations and convenience stores, says Mayor Dennis Wilson. "Additional retail would be an enticement to these folks when they get off shift to stop and shop more," he says. It would also provide the city with much-needed additional sales tax revenue, says Bob Wilson, the banker and the mayor's brother.

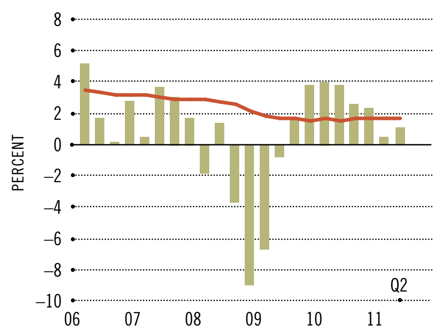
Toward that end, the city is promoting one 13-acre parcel, about a block from the interstate, with a half-empty strip shopping center on it. Candace Connell, the city's community development director, envisions a mixed-used development, possibly including a grocery store, farm supply store, discount store, and hotel or motel. The city has signaled its willingness to offer tax-increment financing to a developer.

In all, the mayor estimates that there are at least 100 acres of developable land left within the city limits, most of it "fronting or just a few blocks off the interstate." Ω

Susan C. Thomson is a freelance writer.

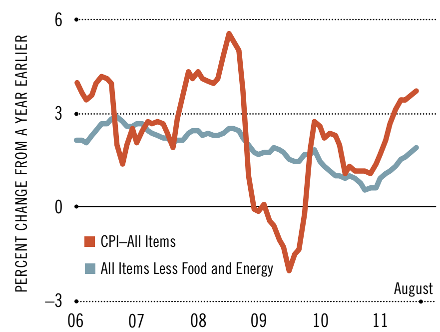
Eleven more charts are available on the web version of this issue. Among the areas they cover are agriculture, commercial banking, housing permits, income and jobs. Much of the data is specific to the Eighth District. To see these charts, go to stlouisfed.org/economyataglance

REAL GDP GROWTH

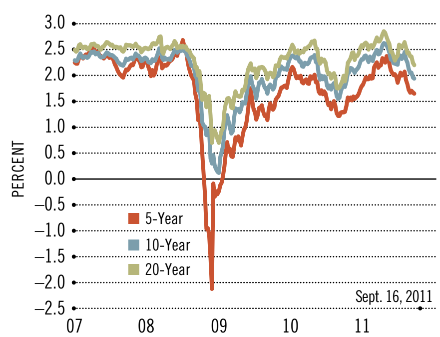


NOTE: Each bar is a one-quarter growth rate (annualized); the red line is the 10-year growth rate.

CONSUMER PRICE INDEX

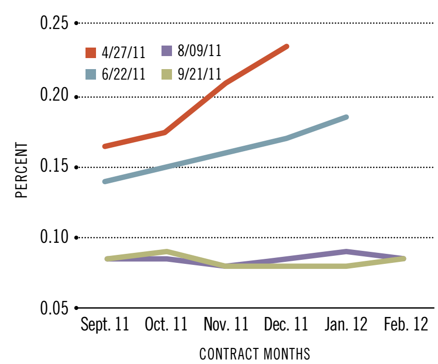


INFLATION-INDEXED TREASURY YIELD SPREADS

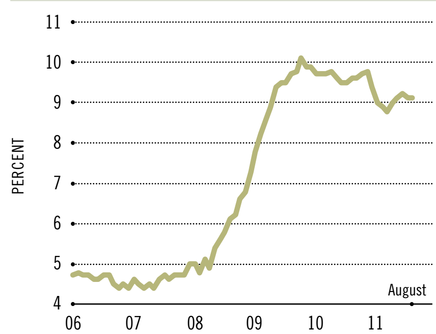


NOTE: Weekly data.

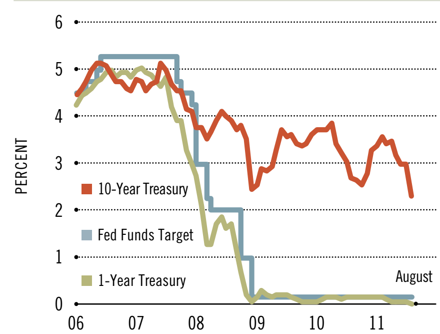
RATES ON FEDERAL FUNDS FUTURES ON SELECTED DATES



CIVILIAN UNEMPLOYMENT RATE

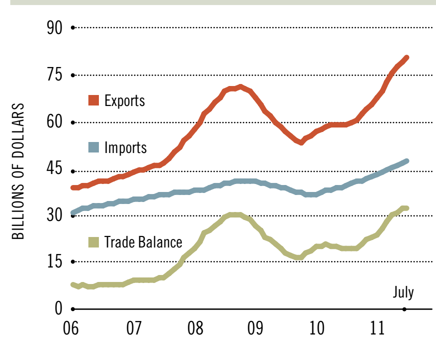


INTEREST RATES



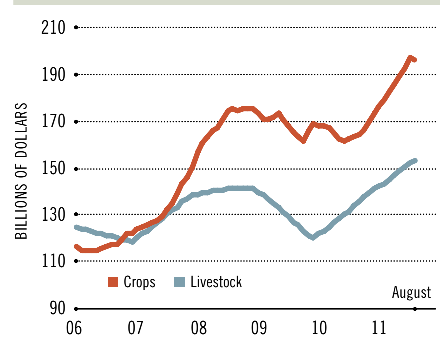
NOTE: On Dec. 16, 2008, the FOMC set a target range for the federal funds rate of 0 to 0.25 percent. The observations plotted since then are the midpoint of the range (0.125 percent).

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.

New Data Elevate Uncertainty about Outlook on the Economy

By Kevin L. Kliesen

Economic analysts and policymakers received a jolt July 29, when the Bureau of Economic Analysis (BEA) announced that real GDP rose by only 1.3 percent at an annual rate in the second quarter (since revised to only 1 percent). Perhaps more startling, the BEA also reported that growth of real GDP in the first quarter was revised markedly lower, to 0.4 percent from 1.9 percent. The new data showed that the U.S. economy was much weaker than forecasters had expected over the first half of the year.

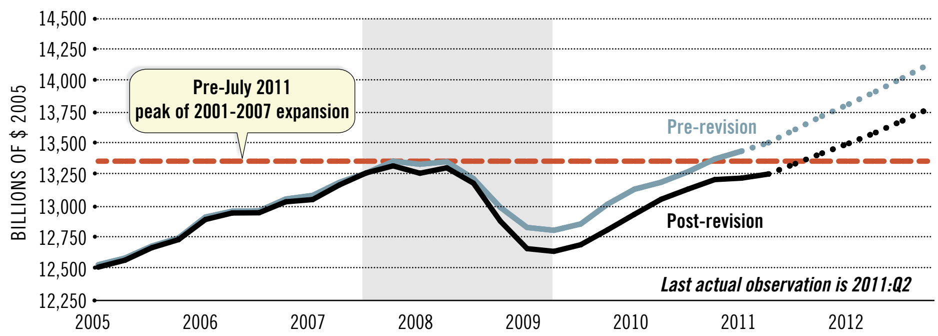
In response, forecasters and policymakers subsequently downgraded their projections for real GDP growth over the second half of this year and for all of next year. According to August's Survey of Professional Forecasters, real GDP is expected to increase by about 1.75 percent this year and by about 2.5 percent next year.

In short, the recovery continues at a disappointing pace with a stubbornly high unemployment rate—currently about 9 percent. For those seeking some clarity on the strength of the U.S. economy, the latest numbers have merely served to elevate this uncertainty.

Other Factors: Europe, S&P

A few other developments may have magnified the economic uncertainty, which seems prevalent among many policymakers, investors, households and business leaders. First, worries about slowing growth in Europe, the financial health of several of Europe's banks and an unwillingness of European policymakers to tackle their fiscal problems spilled over into U.S. equity markets in July and August—much like a year earlier. Falling stock prices tend to slow the growth of current and prospective spending by consumers and businesses. Compounding these uncertainties, the drawn-out debate over the extension of the debt ceiling and the decision by Standard & Poor's to reduce its rating on U.S. sovereign debt from AAA to AA+ may have further worsened the erosion in business and consumer confidence.

Real Gross Domestic Product Before and After July 29, 2011, GDP Revision



SOURCE: Blue Chip Indicators and Bureau of Economic Analysis.

Many key economic indicators, including GDP, are updated for years after the data were originally reported. The latest revisions showed that the most-recent recession (shaded area) was deeper and the recovery milder than originally estimated. In this chart, the solid lines show actual values of real GDP before and after the July 29, 2011, revision. The dotted lines represent forecasts of GDP that were made before and after that date.

In early September, the Bureau of Labor Statistics reported that private-sector employment rose by only 17,000 in August, much weaker than forecasters were expecting and well below the gain of 156,000 registered in July. This report added to the worries of those economists who believe that the economy is dangerously close to falling into another recession. A recession coming on the heels of a very weak recovery would be exceedingly bad news for the labor markets because almost 50 percent of the nation's unemployed have been out of work for at least six months.

When assessing the risk of a recession, economists and forecasters tend to use two main approaches. One looks at statistical models that are designed to estimate the probability of the economy being in a recession or expansion by using key data, such as employment. Using data through July, many of these models indicated a very small probability (less than 10 percent) of an impending recession.

Another approach is to continually update the best-guess scenario (a consensus forecast) by using the flow of key economic data, such as real GDP, payroll employment and industrial production. Although the forecasts continue to point toward stronger growth next year, one drawback to this approach is that the data are backward-looking and often are revised significantly—as the most recent GDP revisions attest.

To help minimize the chances of a false recession signal, some economists will also look at key financial market indicators. Despite their uneven predictive power, popular indicators in the past have been stock prices and money growth. Although stock prices in early September had declined by 13 percent from their early-July peak, the M2 money stock has continued to grow at a brisk rate. Adding to the uncertainty, the St. Louis Financial Stress Index was signaling abnormally high levels of financial stress in early September.

In years past, high and rising inflation often increased the risk of recession. Heading into the second half of 2011, though, oil and commodity prices—the impetus for higher headline inflation rates earlier this year—have retreated in the face of some weakening in the growth of U.S. and global economic activity. Moreover, long-term inflation expectations appear well-anchored, and forecasters see only a small probability of inflation exceeding 3 percent next year.

On the One Hand...

Importantly, then, with short-term interest rates near zero, and with the Federal Open Market Committee indicating that its policy rate is likely to remain near zero "at least through mid-2013," the Fed's accommodative policy stance should help bolster economic conditions going forward. That said, the economy is usually more vulnerable to a recession when output growth is weak than when it is strong. Ω

Kevin L. Kliesen is an economist at the Federal Reserve Bank of St. Louis. See http://research.stlouisfed.org/econ/kliesen/ for more on his work.

ASK AN ECONOMIST

Rajdeep Sengupta has been an economist in the Research division of the Federal Reserve Bank of St. Louis since 2006. His main expertise is financial intermediation and corporate finance. Recently, Sengupta also has studied the behavior of subprime mortgages prior to the financial crisis. He is from India and has been in the U.S. since 2001. He is an avid fan of cricket and soccer. For more on his work, see http://research.stlouisfed.org/econ/sengupta/

Sengupta in Vancouver, Canada.

Q. What impact will the downgrade of U.S. debt have on the country's ability to sell debt in the future?

On Aug. 5, Standard & Poor's downgraded the United States' credit rating for the first time in the history of credit ratings. This was a major development because, throughout recorded financial history, U.S. Treasury debt has been considered the safest debt instrument available. The reason for the downgrade was given as "the prolonged controversy over raising the statutory debt ceiling and the related fiscal policy debate." Taken at face value, this implies increased uncertainty of timely payment of interest and principal on U.S. Treasury obligations.

Typically, the downgrade of sovereign credit ratings is accompanied by a flight of capital away from the country and, in some cases, a sharp depreciation of the sovereign currency. Surprisingly, however, what occurred following the U.S. downgrade was the exact opposite: a sharp decline in both equity and commodity markets and a flight toward U.S. Treasury securities—the subject of the downgrade. Consequently, the yields on the benchmark 10-year Treasury notes fell to their lowest levels since January 2009.

This anomalous behavior can have several explanations. First, despite the downgrade, the financial markets continue to believe in the creditworthiness of the U.S. Treasury. Second, the downgrade occurred during a period of increased uncertainty about the European debt crisis; consequently, U.S. Treasury securities were still a safe haven relative to the sovereign credit risk of other major economies. Third, immediate market reactions to sovereign credit rating downgrades have often been determined by factors other than the downgrade; following the S&P downgrade of Russia's foreign-currency sovereign credit ratings in December 2008, equity markets in Moscow actually posted gains, buoyed by soaring commodity prices.

In the future, the borrowing costs of the U.S. will almost certainly depend on its ability to resolve some of its long-term fiscal challenges. If uncertainty over U.S. debt repayment continues, global investors will seek a safer alternative to U.S. Treasuries—an alternative that has yet to emerge.

Submit your question in a letter to the editor. (See instructions at right.) One question will be answered by the appropriate economist in each issue.

LETTERS TO THE EDITOR

This is in response to an article headlined "The Mismatch Between Job Openings and Job Seekers," which appeared in the July issue.

Dear Editor:

Your excellent July issue of *The Regional Economist* concludes that mismatch (structural unemployment) only accounts for a small part of the problem. I would urge you to check (whether) the influence of massive and growing inequality of income, wealth and opportunity might be a major cause. The latest *New Yorker*, in discussing a spectacularly successful hedge fund, suggests that the rapid growth of corporate salaries may have been accelerated by the competition with hedge fund salaries. If we had the data, I think we could find that prior to each major recession was a rapid increase in income inequality. The few very large incomes drain a lot of purchasing power and leave corporations with piled-up cash and no good markets for new investments.

With this "demand side" analysis, much of the current panic response to growing federal debt is cutting jobs, particularly at the state level. Tax cuts for the affluent never trickled down, but more income at the bottom would surely rapidly move up.

Jim Morgan, professor of economics, emeritus, University of Michigan, Ann Arbor

This is in response to "Commodity Price Gains: Speculation vs. Fundamentals," which appeared in the July issue.

Dear Editor:

I found your piece "Speculation vs. Fundamentals" very interesting. One thing that I did find missing was any mention of how futures contract margins are adjusted in response to higher/lower prices and how this, along with interest rates, impacts the cost of holding futures. I've attached the link to the CME web site which contains the historical margin rates for your reference: www.cmegroup.com/clearing/risk-management/historical-margins.html

I also suspect that the terms and willingness at which banks extend credit to businesses, like that of the athletic apparel wholesaler cited in your piece, may have an impact on commodity prices.

I've always wanted to take the time to try and understand better many of the points raised in your piece; so, I appreciate your work.

Mark Pfeiff, portfolio director, Kaiser-Francis Oil Co., Tulsa, Okla.

This is in response to another article in the July issue, "The Foreclosure Crisis in 2008: Predatory Lending or Household Overreaching?" Because this letter was unusually long, only a portion appears here; the rest can be read online at www.stlouisfed.org/publications/re/letters/index.cfm

Dear Editor:

The authors conclude that the spike in mortgage defaults is not explained by lenders behaving as the equivalent of drug dealers in the schoolyard, leaving "overreaching" as the default explanation. The authors observed that prevention "requires the ability to 1) recognize an asset bubble, 2) classify the bubble as a systemic risk to the economy and 3) curb the formation of the bubble." My suggestion is to use the Federal Reserve's Z.1 balance sheet reports as an assets "overreach" detection and diagnostics data source. Although the Federal Reserve's Z.1 release notes barely acknowledge the existence, let alone the dynamism, of assets and asset values, Z.1 reporting fortunately includes balance sheets, which I suggest be made more inclusive and available in normalized "real" dollar variants to help with time series analysis of asset trends.

Fulton Wilcox, senior partner, Colts Neck Solutions Inc., Colts Neck, N.J.

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www.stlouisfed.org/re/letter
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Hernández-Murillo

Los clips de audio, son presentados por el economista Rubén Hernández-Murillo. En sus resúmenes sobre las condiciones económicas generales del Octavo Distrito de la Reserva Federal y del resto de la nación, Hernández-Murillo provee información acerca de:

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