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during the low-interest-rate environment around 2003-2004 and refinanced in a high-rate environment in subsequent years indicates that lower rates were hardly the motivation behind subprime refinances. While we don't know for sure what the motivation was, the most plausible explanation would be to extract home equity.

### Why Did the Subprime Market Collapse?

The important thing to remember is that a borrower on the brink of default has an exit option: prepay the mortgage either by refinancing or selling the property. Interestingly, Bhardwaj and Sengupta found that the total proportion of loans that either went into default or were prepaid remained unchanged across all vintages. More important, there was a significantly high incidence of early prepayments on subprime originations of earlier vintages. However, this was followed by a sharp drop in prepayment rates after 2006, suggesting that fewer borrowers could use the prepayment exit option.

Why did prepayments decline for originations of later vintages? Herein lay the importance of the subprime mortgage design. Prepayments (either in the form of refinances or an outright sale of the property) were critical to the sustainability of subprime mortgages. In a regime of rising house prices, borrowers could avoid default by prepaying their loans (either through a refinance or a property sale). Moreover, if the house price appreciation was sufficiently large, a borrower could recover the costs of refinancing and even choose to extract equity. However, this option was no longer available when prices did not appreciate. Consequently, borrower defaults began to increase sharply in 2006, when house prices ceased to appreciate. 

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*Rajdeep Sengupta is an economist and Yu Man Tam is a senior research associate at the Federal Reserve Bank of St. Louis. See <http://research.stlouisfed.org/econ/sengupta/> for more on Sengupta's work.*

### ENDNOTES

- <sup>1</sup> During the fixed leg of the hybrid ARM, the mortgagee pays a lower introductory closing rate called the teaser rate. The teaser rate remains in effect until the reset date, after which the repayment schedule on the hybrid ARM resembles an ARM. The reset date, market index rate used and the margin are decided at the closing date.
- <sup>2</sup> These mortgages are also called the 2/28 (two-year teaser rate followed by a 28-year ARM) and a 3/27 (three-year teaser rate followed by a 27-year ARM) respectively.
- <sup>3</sup> See Adams, Einav and Levin.
- <sup>4</sup> See Gorton.
- <sup>5</sup> See Bhardwaj and Sengupta.
- <sup>6</sup> See Bhardwaj and Sengupta.

### REFERENCES

- Adams, William; Einav, Liran; and Levin, Jonathan. "Liquidity Constraints and Imperfect Information in Subprime Lending." *American Economic Review*, 2009, Vol. 99, No. 1, pp. 49-84.
- Bhardwaj, Geetesh; and Sengupta, Rajdeep. "Did Prepayments Sustain the Subprime Market?" Working Papers 2008-039, Federal Reserve Bank of St. Louis, 2008.
- Gorton, Gary. "The Panic of 2007." National Bureau of Economic Research Working Paper 14358, 2008.

### LETTER TO THE EDITOR

This is in response to "Inflation May Be the Next Dragon To Slay," an article that appeared in the January 2010 issue of *The Regional Economist*. To read more letters, go to <http://stlouisfed.org/publications/re/letters/index.cfm>

Feb. 2, 2010

### Dear Editor:

I would like to thank the researcher for clearly explaining the predicament that those in charge of the Fed will likely be facing. There is so much currency in the system, and the Fed continues to debase the dollar by printing money by the trillion. Where will it end? Does the American public realize the government isn't a separate entity but an extension of themselves? YOU the Americans will have to pay all the trillions in debt that the government is taking on. And your standard of living, based on debt and spending, cannot go on forever. It appears as though the high-octane lifestyle is almost at an end. Unusually, I found this article through the St. Louis Fed Reserve web site, which is interesting in itself because usually those who let the cat out of the bag, as it were, are most likely to conceal it. On the same page, a poll is being carried out about inflation. Currently, 812 people have taken the poll and 61 percent believe that inflation is "dead in the water." The dangers of such massive injections into the currency supply are being aired with increased vigor by many except the popular press. Unfortunately, the masses will not read the said article or know how to insulate themselves from the pain associated with high levels of inflation. I hope the problems do not come to light, but I bought 7 kg of silver today because I am betting that they do. Does anyone have a time frame to said inflation? I am guessing 2-3 years, but would welcome comments. Search for Bob Chapman. He constantly talks about said problems.

**John Kitcher**, English teacher in elementary school in Seoul, South Korea

Go to <http://stlouisfed.org/ExternalCFForms/EditorLetterEnt.cfm> to submit a letter electronically. You may also submit a letter to the editor using the e-mail address or street address on Page 2.

**ASK AN ECONOMIST**



**Carlos Garriga** has been an economist in the Research division of the Federal Reserve Bank of St. Louis since 2007. His main expertise is in macro-economics and the effects of government policy. Recently, Garriga has studied the effects of mortgage innovations in the recent housing boom and the role of the housing market in the financial crises. In his free time, he enjoys spending time with his family and any outdoor activity. See <http://research.stlouisfed.org/econ/garriga> for more on his work.

**How does the Fed make money for the Treasury, and are profits audited by Congress or any agency?**

The Federal Reserve System is an independent entity within the government. The Federal Reserve’s revenue is mainly derived from its regular operations, that is, from the interest on U.S. government securities and discount window lending.

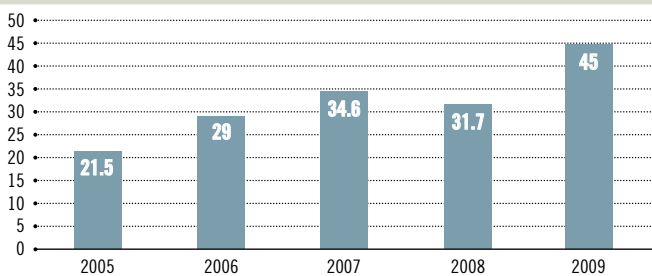
The open market operations are used to buy and sell U.S. Treasury and federal agency securities in the open market, whereas the discount window is used to lend to depository institutions directly from the Fed’s lending facility. These operations are used to affect the demand for and supply of balances of depository institutions and affect the federal funds rate.

Other sources of income are the interest on foreign currency investments held by the System and fees received for services provided to depository institutions (for example, check clearing, funds transfers and automated clearinghouse operations). After paying its expenses, the Federal Reserve turns the rest of its earnings over to the U.S. Treasury.

For 2009, the Fed returned about \$45 billion to the Treasury. This is the most in the 96-year history of the central bank. The record amount results from the programs the Fed initiated as a response to the largest crises since the Great Depression. These programs included the purchase of bonds and mortgage-backed securities to reduce the interest rate and, therefore, to stimulate the economy. The profit last year was 30 percent higher than the largest previous refund to the Treasury, which occurred in 2007. Despite its independence, the Federal Reserve System and the Reserve banks are audited and reviewed at different levels every year. The complete reports, audits and assessments by the Government Accountability Office (GAO) and the Board’s Office of Inspector General (OIG) are available in the Board’s annual report. Go to [www.federalreserve.gov/boarddocs/rptcongress/](http://www.federalreserve.gov/boarddocs/rptcongress/) to read the report. Because the Fed is self-financed, it is not subject to the congressional budgetary process.

**Fed Earnings**

FEDERAL RESERVE EARNINGS PAID TO THE U.S. TREASURY, IN BILLIONS OF DOLLARS



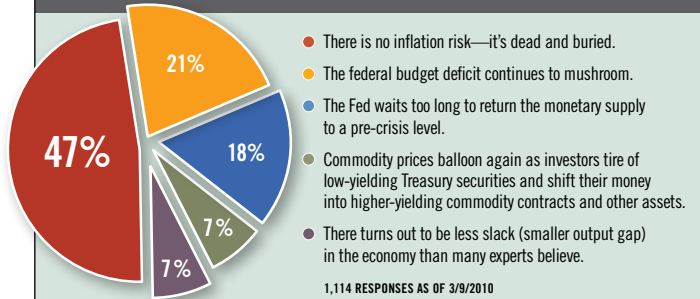
SOURCE: Federal Reserve Board of Governors

Submit your question in a letter to the editor. (See Page 2.) One question will be answered by the appropriate economist in each issue.

**FED FLASH POLL RESULTS**

When a new issue of *The Regional Economist* is published, a new poll is posted on our web site. The poll question is always pegged to an article in that quarter’s issue. Here are the results of the poll that went with the January issue. The question stemmed from the article “Inflation May Be the Next Dragon To Slay.”

**WHICH DO YOU THINK IS THE TOP RISK FOR REIGNITING INFLATION OVER THE NEXT SEVERAL YEARS?**



**THIS ISSUE’S POLL QUESTION:**

*Which scenario do you think is most likely for the world economy?*

1. “Big spender” countries (especially U.S.) live within their means, and miserly countries (especially China) break open the piggy bank.
2. Countries don’t coordinate policies. Trade imbalances return—in spades. Boom followed by bust (again).
3. Economic restructuring stalls. Stimuli end. Private spending slows. Economies tank.

After reading “Economic Hangover: The Recovery Is Likely To Be Prolonged, Painful,” go to [www.stlouisfed.org/publications/re](http://www.stlouisfed.org/publications/re) to vote. (This is not a scientific poll.)

**FED PROGRAM TO FOCUS ON COMMUNITY DEVELOPMENT**

“Exploring Innovation in Community Development Week” will be April 19-23. The public is invited to partake in the events of the week, organized by the Federal Reserve Bank of St. Louis. Programs are being planned throughout the Eighth District.

The premiere event, “Restructuring and Retooling for the Future,” will take place April 20. It is the first in a yearlong series of public policy dialogues on the essential elements of great community development. The program will be at the Fed in St. Louis and will be broadcast via videoconference to audiences at the Bank’s branches in Little Rock, Louisville and Memphis. Confirmed national panelists include Ruth McCambridge of the *Nonprofit Quarterly* and Ray Boshara, vice president and senior research fellow at the New America Foundation. Attendees will also hear about the St. Louis Fed’s “10,000-Hour Challenge,” a campaign to encourage community development professionals to become experts in innovation.

Other activities include an April 21 screening of the documentary “New Neighbors,” the Greater Louisville Nonprofit Technology Summit on April 22 and the St. Louis Regional Housing Conference on April 23.

Go to [www.stlouisfed.org/event/01ED](http://www.stlouisfed.org/event/01ED) for a complete schedule and registration information.