

FEDERAL RESERVE BANK OF KANSAS CITY

# ECONOMIC REVIEW

---

*First Quarter 2019*

*Volume 104, Number 1*

---

Do Changes in Reserve Balances Still Influence the Federal Funds Rate? 5

*By A. Lee Smith*

What Explains Lifetime Earnings Differences across Individuals? 35

*By José Mustre-del-Río and Emily Pollard*

The Rise and Fall of College Tuition Inflation 57

*By Brent Bundick and Emily Pollard*

---

## *Do Changes in Reserve Balances Still Influence the Federal Funds Rate?*

*By A. Lee Smith*

Over the past decade, the implementation of U.S. monetary policy has changed significantly. Rather than adjusting the quantity of reserves in the banking system, policymakers now primarily use the interest rate paid on reserve balances, the IOR rate, to bring the federal funds rate within the target range. However, the recent rise in the federal funds rate relative to the IOR rate has raised questions about the primary drivers of the spread between the federal funds rate and the IOR rate in the Federal Reserve's new operating framework.

A. Lee Smith examines the role declining reserve balances have played in influencing the federal funds-IOR spread. He finds that declining reserve balances have placed upward pressure on the federal funds rate in recent years despite the payment of interest on reserve balances. His findings suggest that the funds rate may continue to move higher relative to the IOR rate as reserve balances decline, potentially motivating further adjustments to the implementation of U.S. monetary policy.

## *What Explains Lifetime Earnings Differences across Individuals?*

*By José Mustre-del-Río and Emily Pollard*

Expected lifetime earnings are a key factor in many individual decisions, such as whether or not to go to college and what kind of occupation to pursue. However, lifetime earnings differ widely across individuals, and uncovering the factors that explain these differences can be challenging. Some characteristics, such as race and sex, are observable. But other intangible characteristics, such as work performance, are more difficult to quantify. To what degree observable characteristics explain lifetime earnings is an empirical question.

José Mustre-del-Río and Emily Pollard use a unique data set combining administrative and survey data to assess how much variation in lifetime earnings across individuals can be explained by observable characteristics such as sex, race, education, and labor market experience. They find that labor market experience—that is, the fact that some individuals work more years than others—accounts for roughly 40 percent of the difference in earnings. Standard demographic characteristics such as sex, race, or education alone explain about 15 percent of these differences. In total, observable characteristics account for a little more than half of lifetime earnings differences.

---

---

## *The Rise and Fall of College Tuition Inflation*

*By Brent Bundick and Emily Pollard*

The cost of college tuition increased rapidly from 1980 to 2004 at a rate of about 7 percent per year, significantly outpacing the overall inflation rate. Since 2005, college tuition inflation has slowed markedly and has averaged closer to 2 percent per year for the last few years. Understanding what drives tuition inflation is important for predicting future tuition as well as personal income mobility. However, untangling the various supply and demand factors influencing college tuition can be challenging.

Brent Bundick and Emily Pollard document changes in college tuition inflation over time and attempt to explain the long rise and subsequent fall in college tuition inflation. They find that supply factors such as wages in the education sector and state appropriations to higher education both play important roles in explaining changes in college tuition inflation. In contrast, they find little evidence that demand factors such as changes in the availability of student loans have a significant effect on college tuition.

# Economic Review

---

## PRESIDENT AND CHIEF EXECUTIVE OFFICER

Esther L. George

## RESEARCH STEERING GROUP

Kelly J. Dubbert, First Vice President and Chief Operating Officer

Kevin L. Moore, Senior Vice President

Diane M. Raley, Senior Vice President

Luke Woodward, Senior Vice President

## EDITOR-IN-CHIEF

George A. Kahn, Vice President and Economist

## MANAGING EDITOR

Elizabeth Cook Willoughby, Communications Consultant

## ASSOCIATE EDITORS

Jason P. Brown, Assistant Vice President and Economist

Nicholas Sly, Assistant Vice President and Economist

Huixin Bi, Senior Economist

José Mustre-del-Rfo, Senior Economist

## RESEARCH STAFF

Jonathan L. Willis, Vice President and Senior Research and Policy Advisor

Alison Felix, Vice President and Branch Executive, Denver Branch

Nathan Kauffman, Vice President and Branch Executive, Omaha Branch

Chad Wilkerson, Vice President and Branch Executive, Oklahoma City Branch

Willem Van Zandweghe, Assistant Vice President and Economist

Jim Wilkinson, Assistant Vice President and Economist

Brent Bundick, Senior Economist

Taeyoung Doh, Senior Economist

Kelly D. Edmiston, Senior Economist

Fumiko Hayashi, Senior Economist

Jun Nie, Senior Economist

Jordan Rappaport, Senior Economist

A. Lee Smith, Senior Economist

Didem Tüzemen, Senior Economist

Nida Çakır Melek, Economist

Cortney Cowley, Economist

W. Blake Marsh, Economist

Rajdeep Sengupta, Economist

David Rodziewicz, Commodity Specialist

Jesse Maniff, Senior Analyst

## EDITORIAL SUPPORT

Richard A. Babson, Senior Editor

Beth Norman, Layout Designer

*First Quarter 2019, Volume 104, Number 1*

---

The *Economic Review* (ISSN0161-2387) is published quarterly by the Federal Reserve Bank of Kansas City, 1 Memorial Drive, Kansas City, Missouri 64198-0001. Subscriptions and additional copies are available without charge. Send requests to the Public Affairs Department, Federal Reserve Bank of Kansas City, 1 Memorial Drive, Kansas City, Missouri 64198-0001. Periodical postage paid at Kansas City, Missouri.

POSTMASTER: Send address changes to *Economic Review*, Public Affairs Department, Federal Reserve Bank of Kansas City, 1 Memorial Drive, Kansas City, Missouri 64198-0001. The views expressed are those of the authors and do not necessarily reflect the positions of the Federal Reserve Bank of Kansas City or the Federal Reserve System. If any material is reproduced from this publication, please credit the source.