

## IN THIS ISSUE

- Poverty from the Great Society to the Great Recession
- The Impacts of Public Transit on Traffic
- Location Choices of Foreign-Born Ph.D.s
- Limited Partner Performance and the Maturing of the Private Equity Industry
- Real Estate Speculation and American History
- Gasoline Taxation and Air Pollution

## Poverty from the Great Society to the Great Recession

**I**n *Winning the War: Poverty from the Great Society to the Great Recession* (NBER Working Paper No. 18718), **Bruce Meyer and James Sullivan** contradict the belief that efforts to reduce poverty in the United States have met with little success over the last half century. They find that moving from traditional income-based measures of poverty to a consumption-based measure and adjusting for bias in price indexes shows that the poverty rate declined by 26.4 percentage points between 1960 and 2010, with 8.5 percentage points of that decline occurring since 1980.

Examining income measures from the Annual Social and Economic Supplement to the Current Population Survey and consumption data from the Consumer Expenditure Survey, Meyer and Sullivan take into account vehicle ownership, housing, and other expenditures. They

also factor in inflation, changes in tax and transfer policies, and demographics. They conclude that tax changes, particularly expan-

---

“The combination of targeted economic policies and policies that support growth has had a significant impact on poverty.”

---

sions of the earned income tax credit, have noticeably reduced poverty. Increases in Social Security have played a large role since 1960. Other transfers have not been as important, at least in the past three decades. In addition, some of the decline in poverty can be explained by rising educational attainment.

Meyer and Sullivan suggest that figuring out who has benefitted from economic growth or redistributive policies and who would benefit from additional targeted policies depends critically on whether one examines consumption or income. The consumption-based pov-

erty results suggest much greater improvement for single parent families and the aged than do the income-based poverty mea-

asures. However, overall changes in consumption- and income-based measures are more similar for married two-parent families.

“Despite repeated claims of a failed war on poverty,” Meyer and Sullivan write, “our results show that the combination of targeted economic policies and policies that support growth has had a significant impact on poverty... There have been noticeable improvements in the last decade, though they are not as big as the improvements in some prior decades... We may not have won the war on poverty, but we are certainly winning.”

— Matt Nesvisky

## The Impacts of Public Transit on Traffic

While some have questioned the benefits of mass transit systems, which are used by only a small fraction of commuters, research by **Michael Anderson** suggests that transit riders likely would otherwise commute along already heavily congested roadways — and that congestion along those roadways would increase if mass transit were scaled back. In **Subways, Strikes, and Slowdowns: The Impacts of Public Transit on Traffic** (NBER Working Paper No. 18757), he studies traffic-congestion data from before, during, and after an October-November 2003 transit-worker strike in Los Angeles. He estimates that average highway con-

gestion delays increased 47 percent when public transit service was not available.

---

“Average highway congestion delays increased 47 percent when public transit service was not available.”

---

Public transit receives 23 percent of all federal highway dollars but represents only 1 percent of all U.S. passenger miles traveled. Federal, state, and local government subsidies for public transit exceed \$40 billion a year, and cover 100 percent of capital costs. There has been relatively little research, however, on the effects of mass transit availability on the peak hour congestion experienced by commuters on different roadways within the same metro-

politan area. This is because the counterfactual — the absence of mass transit access in cities with

mass transit systems — is not often observed.

Not surprisingly, Anderson finds that while average roadway delays increased during peak hours of the transit strike, the effects were largest on freeways running parallel with transit lines with heavy ridership. His estimates suggest a total “congestion relief benefit” of the Los Angeles public-transit system of between \$1.2 billion and \$4.1 billion per year.

— Jay Fitzgerald

## Location Choices of Foreign-Born Ph.D.s

The share of U.S. science and engineering Ph.D.s earned by foreign-born students rose from 23 percent in 1970 to 56 percent in 2007. In **Attracting Talent: Location Choices of Foreign-Born Ph.D.s in the US** (NBER Working Paper No. 18780), **Jeffrey Grogger** and **Gordon Hanson** note that science-and-engineering graduates have “relatively high propensities to produce and commercialize patents”

and to launch high-technology business ventures. Thus, where they choose to locate after they have completed their education is “likely to affect the global distribution of innovative capacity.”

The National Science Foundation Survey of Earned Doctorates contains information on the characteristics of all individuals receiving a Ph.D. from a U.S. university since 1958 and includes a question on whether

the graduate intends to stay in the United States. Previous work has shown that the reported intent to stay closely tracks actual rates of stay as calculated from Social Security Administration earnings reports. Almost 80 percent of foreign-born Ph.D.s who earned degrees between 1960 and 2008 reported intending to stay.

The authors find that the most important factor affecting post-graduation intent to stay

is economic performance. An increase of 1.2 percent in lagged U.S. GDP raises the intent-to-stay rate by 3.3 percent. An increase of 4.3 percent in a graduate's birth-country GDP is associated with a 2 percent decline in the intent-to-stay-rate: as economic development accelerates in birth-countries, graduates become more likely to return home. Graduates are also more likely to return home if the government in their birth country becomes more democratic.

Graduates with stronger academic ability, measured by whether they received university support for a research or a teaching assistantship, had a 6.8 percent higher stay rate. Assistantships were the primary means of support for 52 percent of the sample; 11 percent of the sample was supported by a university fellowship or scholarship, which was associated with a 2.7 percent higher stay rate. Students supported by foreign funding, 4 percent of the sample, had an intent to stay that was 26.7 points lower.

As one would expect, ties to

the United States are also important. Foreign-born U.S. citizens have a 19.5 percent higher stay

---

“Almost 80 percent of foreign-born Ph.D.s who earned degrees between 1960 and 2008 reported intending to stay.”

---

rate; green card holders have a 15.3 percent higher stay rate; and U.S. college graduates have a 3.6 percent higher stay rate.

To more closely examine how economic growth might affect stay rates, the authors analyze the characteristics of the 9.3 percent of U.S.-born Ph.D. graduates who have reported planning to work for a business since 1984. The shares were highest in plastics engineering (50.5 percent), ceramics sciences engineering (44.6 percent), metallurgical engineering (41.3 percent), polymer chemistry (42.3 percent), forestry science (40.0 percent), and food science (33.8 percent). The effect of lagged GDP growth on the foreign-born stay rates in these fields was one-third larger than in other fields. Of the non-science fields, only economics and management had intent-to-

stay rates that were similarly sensitive to the business cycle.

China, India, Korea, and

Taiwan accounted for 60.7 percent of all U.S. science and engineering Ph.D.s awarded to non-U.S. students in 2007. Over the period, new U.S. Ph.D. rates per 10,000 birth-country inhabitants averaged 34 for the United States, 30 for Taiwan, 13 for Korea, 3 for China, 2 in non-U.S. high income countries, 1.7 for India, 1.5 for middle-income countries, and 0.6 for inhabitants of other low-income countries. Almost all of the variation in the stay rate over time for India was explained by lagged U.S. and home country GDP growth. Stay rates for graduates from Korea and Taiwan were increased by the 1997 Asian financial crisis. Stay rates for graduates from Korea were reduced by that country's transition from military rule to democracy in 1988.

—Linda Gorman

## Limited Partner Performance and the Maturing of the Private Equity Industry

During the 1990s, returns among endowments investing in private equity funds soared and endowments outperformed other

private equity investors. This was not the case between 1999 and 2006. In **Limited Partner Performance and the Maturing**

**of the Private Equity Industry** (NBER Working Paper No. 18793), **Berk Sensoy, Yingdi Wang, and Michael Weisbach**

conclude that: “The disappearance of abnormal performance by endowments is consistent with changes in the economics underlying the private equity industry.” In fact, the private equity industry had matured. In 1990, private equity was a little-known niche, with \$6.7 billion in investments. By 2008, just prior to the financial crisis, the industry had ballooned into a \$261.9 billion mainstay of institutional portfolios.

Based on a sample of 14,380 investments by 1,852 limited partners in 1,250 buyout and venture funds between 1991 and 2006, the authors confirm that endowments outperformed other investors early on because they had access to the most successful funds while other investors did not. Rather than expand or charge higher fees, the best private equity partnerships rationed access to their funds, accepting investments from favored investors, such as prestigious educational and other nonprofit endowments, to the exclusion of others. Also, endowments were better able to evaluate alterna-

tive investments, such as private equity, that were unfamiliar at the time.

From 1991 to 1998, endow-

---

“Endowments outperformed other investors early on because they had access to the most successful funds while other investors did not.”

---

ments enjoyed an average 13.38 percent internal rate of return on private equity investments, the highest of any limited partnership groups. “The performance gap is driven entirely by endowments’ investments in the venture industry, which benefited most from the 1990s technology boom,” the authors write. “Compared with other types of institutions, endowments were more likely to invest in older partnerships, which not only were more likely to restrict access but also earned higher returns.”

In the aftermath of the technology bust of the 2000s, which put an end to booming returns from venture capital, that outperformance had evaporated. The authors find that endowment investors’ skill in picking venture funds declined significantly after

the tech bust. The marginal out-performance that could be attributed to the funds they invested in, relative to those that they did

not invest in, fell to levels similar of other institutional investors during 1999–2006. And, endowment investors didn’t show particular skill in picking first-time funds, which were unlikely to restrict access, either before the tech crash or afterward.

The authors explain this pattern as the result of maturation of the private equity industry. In the early years, high returns were earned in part by purchasing mismanaged companies and improving their operations. Investments in high-tech companies were also an important driver of venture capital returns in the 1990s. Over time, though, the “low-hanging fruit” was picked, and the dispersion of returns across different private equity groups shrunk dramatically.

— Laurent Belsie

## Real Estate Speculation and American History

Between January 2000 and March 2006, the Case-Shiller 20-city real estate price index rose by 76 percent in real terms.

Between March 2006 and May 2009, it declined by 36 percent. In **A Nation of Gamblers: Real Estate Speculation and**

**American History** (NBER Working Paper No. 18825), **Edward Glaeser** studies nine historical episodes from the frontier

lands of the 1790s to today, drawing key lessons from the past that help to explain recent real estate price movements.

He finds that the swings in house prices and construction that occurred between 1996 and 2010 have many precedents in U.S. history. Americans often speculate heavily on real estate, with vast fortunes won and lost. And, there are many similarities between the most recent boom and previous events: rising prices reflected optimistic expectations, and credit market conditions played a supporting role. As in many previous situations, optimistic expectations seemed justifiable based on coincident experience or cross-regional comparisons of land prices and rents.

In the most recent boom, an optimistic assessment of future house price growth was needed to justify paying high prices for real estate. Glaeser points out that the expectation of a promising future also was critical to the rural land booms on the New York frontier in the 1790s and in Iowa in 1910, and to the urban booms of Chicago in the 1830s and Los

Angeles in the 1880s and 1980s.

Booms end when optimistic projections fail to materialize, at

---

“There are many similarities between the most recent boom and previous events: rising prices reflected optimistic expectations, and credit market conditions played a supporting role.”

---

least in the short run. In many cases, however, these developments, which seem to shock some market participants, should have been predictable based on the power of long-run elastic housing supply. For example, a sufficiently well informed buyer in Alabama in 1819 might have forecast that world-wide cotton supply would push prices there down, just as a skyscraper builder in 1920s Manhattan might have foreseen that abundant office space should decrease apartment rents dramatically. In the recent boom, the question is why well informed buyers in cities like Las Vegas did not recognize that the abundance of desert space would ultimately limit the long-run value of homes on the urban fringe of such metropolitan areas.

While hindsight is always

helpful in assessing asset market bubbles, the difficulties in forecasting the impact of sup-

ply are both understandable and hard to arbitrage. The cognitive requirements needed to forecast the impact of global supply conditions on local property values are large. After the fact, the drop in cotton prices after 1819 may seem highly predictable, but why should that have been true among cotton farmers on America’s frontier?

This paper notes that periods of excessive optimism in real estate markets can have broad implications in financial markets, because real estate loans represent an important component of bank balance sheets. When prices drop, as they did recently, it can trigger distress throughout the financial system.

— Lester Picker

## Gasoline Taxation and Air Pollution

Driving a car produces an externality — pollution — that imposes various economic costs, but drivers do not directly pay for that

externality. The efficient economic remedy would tax individual drivers based on their vehicles’ emissions, but that is currently

impractical. Taxing gasoline purchases, which are related to emissions, is an indirect alternative, but the gasoline tax does not take

into account the variation across vehicles in per-gallon emissions. In **The Welfare Impact of Indirect Pigouvian Taxation: Evidence from Transportation** (NBER Working Paper No. 18849), **Christopher Knittel** and **Ryan Sandler** examine how differences in consumers' price sensitivity of demand for gasoline, and variation in per-gallon emissions across vehicles, affect the efficiency of the gasoline tax as a policy instrument for reducing pollution.

Using vehicle data from California for the period 1998 to 2008, they find that the variation in vehicle emissions is correlated with how vehicle-specific-miles-driven respond to a change in gasoline prices. The drivers of dirtier vehicles respond substantially more to changes in fuel prices than the drivers of clean vehicles.

This means that the local pollution-lowering benefits from an increase in the gasoline tax are larger than estimates based on

---

**“The drivers of dirtier vehicles respond substantially more to changes in fuel prices than the drivers of clean vehicles.”**

---

equal-demand responses across all drivers.

In fact, the authors estimate that the health benefits of a gasoline tax would increase by 90 percent once the variation in responsiveness of vehicle emissions is taken into account. This result is not driven by a vintage effect, whereby older vehicles are more responsive to changes in gasoline prices and at the same time have higher emissions.

The authors find that a uniform tax on emissions — currently impractical but often discussed — would perform poorly

in eliminating the inefficiencies associated with vehicle emissions. Over 75 percent of those inefficiencies would remain with such

a tax. The dirtiest vehicles, which are most responsive to an emissions tax, would not be taxed enough while some clean vehicles would be over-taxed. One potential strategy for reducing these inefficiencies would be to condition taxes based on vehicle type, and particularly on the age of the vehicle. Another route would be to scrap the dirtiest 10 percent of vehicles, or to retire the most polluting vehicles through cash-for-clunkers or allowing gasoline taxes to be county-specific.

— Claire Brunel

---

## NBER

---

*The National Bureau of Economic Research is a private nonprofit research organization founded in 1920 and devoted to objective quantitative analysis of the American economy. Its officers are:*

*James M. Poterba— President and Chief Executive Officer*

*Kathleen B. Cooper— Chairman*

*Martin B. Zimmerman— Vice Chairman*

*The NBER Digest summarizes selected Working Papers recently produced as part of the Bureau's program of research. Working Papers are intended to make preliminary research results available to economists in the hope of encouraging discussion and suggestions for revision. The Digest is issued for similar informational purposes and to stimulate discussion of Working Papers before their final publication. Neither the Working Papers nor the Digest has been reviewed by the Board of Directors of*

*the NBER.*

*The Digest is not copyrighted and may be reproduced freely with appropriate attribution of source. Please provide the NBER's Public Information Department with copies of anything reproduced.*

*Individual copies of the NBER Working Papers summarized here (and others) are available free of charge to Corporate Associates. For all others, there is a charge of \$5.00 per downloaded paper or \$10.00 per hard copy paper. Outside of the United States, add \$10.00 per order for postage and handling. Advance payment is required on all orders. To order, call the Publications Department at (617) 868-3900 or visit [www.nber.org/papers](http://www.nber.org/papers). Please have the Working Paper Number(s) ready.*

*Subscriptions to the full NBER Working Paper series include all 1000 or more papers*

*published each year. Subscriptions are free to Corporate Associates. For others within the United States, the standard rate for a full subscription is \$8000; for academic libraries and faculty members, \$6500. Higher rates apply for foreign orders. The on-line standard rate for a full subscription is \$1925 and the on-line academic rate is \$900.*

*Partial Working Paper subscriptions, delineated by program, are also available. For further information, see our Web site, or please write: National Bureau of Economic Research, 1050 Massachusetts Avenue, Cambridge, MA 02138-5398.*

*Requests for Digest subscriptions, changes of address, and cancellations should be sent to Digest, NBER, 1050 Massachusetts Avenue, Cambridge, MA 02138-5398. Please include the current mailing label.*