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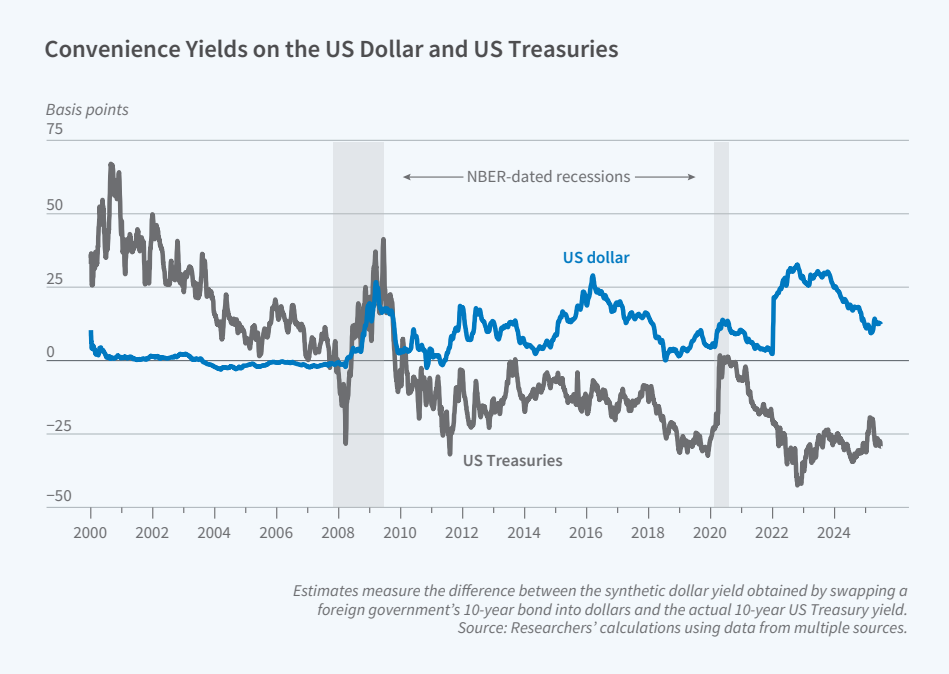
Convenience Yields: The US Dollar vs. US Treasuries

In Decoupling Dollar and Treasury Privilege (NBER Working Paper 35000), Wenxin Du, Ritt Keerati, and Jesse Schreger document a pronounced divergence between the convenience yields on the US dollar and US Treasury securities since the early 2010s. The convenience yield—the premium investors implicitly pay for the safety, liquidity, and collateral value of an asset—has historically been positive for both. While the dollar retains strong convenience in global markets, the convenience yield on Treasuries has declined and turned negative relative to government bonds of other developed economies.

The researchers measure convenience yields using deviations from covered interest parity (CIP), which stipulates that the cost of borrowing in one currency should equal the cost of borrowing in another after hedging exchange rate risk. They compute CIP deviations for risk-free benchmark rates—capturing dollar convenience—and separately for government bond yields—capturing Treasury convenience—across currencies of the G10 nations and 19 emerging markets at maturities from three months to 30 years.

The median five-year Treasury convenience relative to G10 currencies became negative in 2012 and has declined since then, averaging –26 basis points from 2021 onward compared with –7 basis points during 2012–20. Short-term Treasury convenience yields at three-month and one-year horizons became persistently negative in 2023 and have remained below zero since then. Meanwhile, the dollar convenience yield has remained positive throughout the post–global financial crisis period. It averaged roughly 20 basis points across G10 currencies from 2021 to 2025.



Estimates measure the difference between the synthetic dollar yield obtained by swapping a foreign government's 10-year bond into dollars and the actual 10-year US Treasury yield. Source: Researchers' calculations using data from multiple sources.

For more than a decade, the dollar has displayed a positive global convenience yield while there has been a negative convenience yield on US Treasuries relative to G10 government bonds.

The researchers show that the decoupling of the dollar and Treasury convenience yields is driven primarily by the collapse of US swap spreads—the difference between the interest rate swap rate and the Treasury yield. These spreads have become deeply negative, especially at longer maturities. The risk properties of the two measures have also diverged: while the dollar convenience yield tends to rise during periods of elevated global stress, the Treasury convenience yield has been moving in the opposite direction at medium- and long-term maturities during the 2020s.

A key driver of the Treasury convenience decline is the relative supply of government bonds. Estimates covering 2000–24 show that a 1 percent increase in the US debt-to-GDP ratio is associated with a 0.37 to 0.86 basis point decrease in Treasury convenience, while increases in foreign government debt-to-GDP ratios are associated with higher relative Treasury convenience. The response to the April 2025 reciprocal tariff announcement further illustrates this pattern as the Treasury premium declined most against countries with low government debt burdens, such as Australia, Germany, and Sweden, but barely moved against high-debt countries like the United Kingdom and Japan. The findings suggest that the sheer volume of US government debt issuance has eroded the convenience yield of Treasuries, even as the dollar's central role in global finance remains intact.

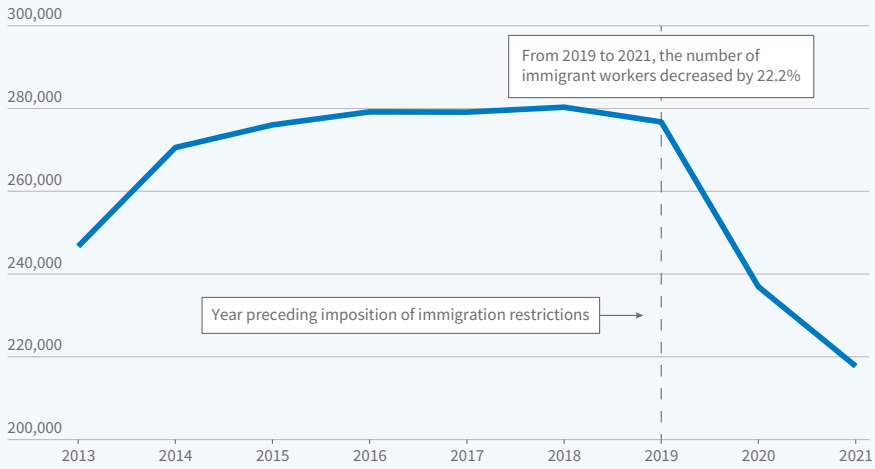
What Happens When the Flow of Immigrant Workers Suddenly Stops?

South Korea is one of the fastest-aging countries in the world. Its fertility rate, which has been below replacement level since the 1970s, dropped below one after 2020, producing a sharp contraction in the supply of young workers willing to take physically demanding, low-skilled jobs. To address persistent labor shortages in sectors such as manufacturing, agriculture, and fisheries, the government introduced the Employment Permit System (EPS) in 2004, a guest worker program allowing low-skilled workers from 16 Asian countries to fill entry-level positions.

In 2019, roughly 276,000 EPS workers were employed across the country, with approximately three-quarters concentrated in manufacturing. They were also overwhelmingly assigned simple, repetitive tasks: employers reported that 79 percent of EPS workers performed tasks requiring no specific knowledge or technical skills, compared with just 19 percent of Korean workers. When COVID-19 border closures halted nearly all new visa issuances in 2020 and 2021, the EPS workforce shrank by about 22 percent. In The Effects of a Sudden Stop in Low-Skilled Immigration: Evidence from Korea's Guest Worker Program (NBER Working Paper 34927), Jongkwan Lee, Giovanni Peri, and Hee-Seung Yang study the consequences of this disruption on approximately 1,000 EPS-participating manufacturing firms, utilizing a survey conducted by the Korea Development Institute and the World Bank in August 2019 and January 2021.

Firms with greater pre-pandemic dependence on EPS workers were more likely to shut down. A shift from zero to full EPS exposure was associated with an increase of more than 12 percent in closure probability, more than twice the baseline exit rate. The effect was concentrated among low-wage, low-productivity firms: Those in the bottom 25 percent of the wage distribution saw closure probabilities nearly 0.4 percentage points higher per 1 percentage point increase in exposure, while firms in the upper half of the distribution showed no statistically significant effect.

Number of Immigrant Workers in South Korea



The Employment Permit System, introduced in 2004, provided temporary entry-level workers.
Source: Researchers' calculations using data from the Korea Immigration Service Statistics and the Ministry of Justice Korea.

A sudden halt in South Korea's low-skilled guest worker program led to firm closures, production disruptions, and wage declines for native Korean workers.

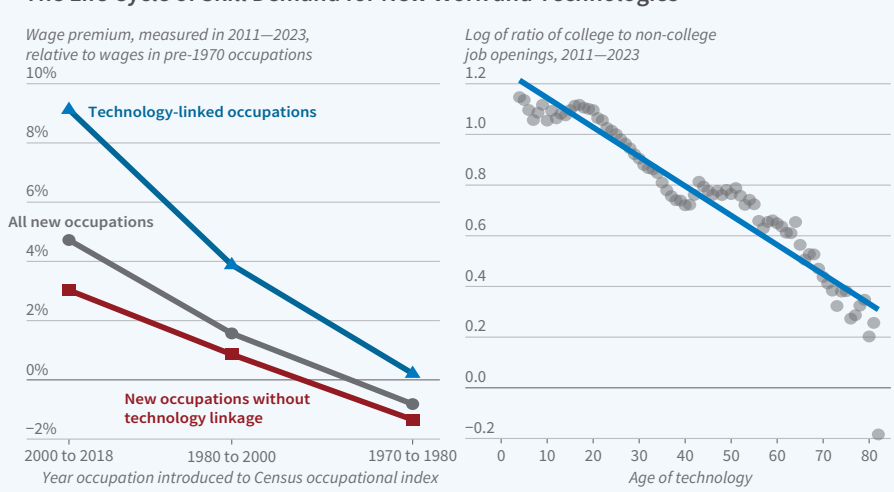
Among firms that did not close, larger EPS employment declines were associated with a 1.7 percentage point higher probability of reporting revenue losses and a 1.4 percentage point higher probability of experiencing production setbacks for each percentage point decline in EPS workers. Crucially, firms did not respond by expanding domestic hiring. While there was some increase in overall Korean employment through retention of incumbent workers, new hiring of Korean workers showed no significant increase. Instead, firms expressed strong demand for additional EPS workers, with each unit decline in EPS employment associated with demand for approximately two additional guest workers.

Korean employees at surviving firms that were heavily dependent on EPS workers experienced significant wage declines, a finding consistent with native workers being reassigned to lower-skilled tasks previously performed by immigrant workers. This occupational downgrading suggests that EPS and Korean workers performed distinct and complementary roles within the production process.

The researchers acknowledge funding from the Korea Development Institute and the World Bank.

New Work, New Technologies, and the Skill Premium

Two new NBER working papers examine how new technologies erode demand for long-standing labor via automation while also instantiating fresh labor demand—"new work"—by introducing new job tasks. They present a unified account of how demand-side forces affect skill premiums and share a common organizing idea: new work creates demand for scarce, specialized skills that initially command a wage premium which fades as this expertise diffuses through the workforce. Developed independently and working at different scales and with different data, they present complementary evidence for the life cycle of the skill premium and its implications for inequality.



Left panel from Autor, Chin, Salomons, and Seegmiller (NBER Working Paper 34986).
Right panel from Hassan, Kalyani, and Restrepo (NBER Working Paper 34939).
Source: Researchers' calculations using data from the US Census Bureau (left panel) and Lightcast (right panel).

In What Makes New Work Different from More Work? (NBER Working Paper 34986), David Autor, Caroline Chin, Anna M. Salomons, and Bryan Seegmiller measure new work as novel occupational titles that appear for the first time in the Census Bureau's decennial occupation list. Using person-level occupational write-ins from the 1940 and 1950 Complete Count censuses and the confidential 2011–23 American Community Survey, they establish five findings that tie new work to the expertise mechanism.

First, new work is disproportionately performed by younger and more-educated workers, even within detailed occupation-industry-county cells: workers with advanced degrees in 2011–23 are 2.9 percentage points more likely than high-school graduates to be in new work, against an 18.3 percent base rate. Second, conditional on demographics, three-digit occupation, three-digit industry, and county, new work pays a 1.8 log-point wage premium, with technology-linked new work paying roughly four times more than non-technology-linked new work. Third, the premium declines in vintage age across both technology-linked and other new work, with titles introduced between 2000 and 2018 commanding 4.7 log points and 1970s titles drawing a slight negative premium. Fourth, in linked 1940–50 data, prior employment in new work predicts higher subsequent earnings even conditional on current new-work status and prior wages, evidence of durable expertise rather than positive selection. Finally, the construction of federally financed manufacturing plants during World War II spurred the emergence of new work.

In The Skill Premium in Times of Rapid Technological Change (NBER Working Paper 34939), Tarek Alexander Hassan, Aakash Kalyani, and Pascual Restrepo explore how the aggregate skill premium changes when the rate of new technology arrival accelerates and then slows. They develop a calibrated macroeconomic model in which college-educated workers have a comparative advantage in learning recently invented technologies that fades as technologies standardize. The skill premium tracks the age mix of technologies in use, which depends on the pace of new technology creation.

The authors quantify both the life cycle of technologies' skill demand and the pace of technology creation using novel text-based methods, tracing 6,259 distinct technologies through US patent text, Wikipedia, and 300 million Lightcast job postings. They find that 57 percent of jobs associated with a new technology require a college degree at emergence, falling to only 34 percent 80 years after the technology's introduction. A technology's overall labor-market footprint peaks 35 years after introduction. The measured rate of new technology creation is stable at 25–30 per year before 1970, accelerates to a peak near 250 per year in the late 1980s, and falls back to about 100 per year by the mid-2000s.

The calibrated model generates a 32 percent increase in the college premium between 1980 and 2010 and anticipates its post-2010 flattening, which reflects the deceleration of the wave of technology creation of the '80s and '90s. The same mechanism explains where and for whom the premium rose. Because new technologies diffuse from dense to less-dense areas—the modal technology is 34 years old in the densest 1 percent of US cities, versus 48 in the bottom-half density bin—the model accounts for 6.2 of the 8.7 log point urban-rural differential rise between 1980 and 2005. And because younger workers learn new technologies faster, the skill premium rises first among the young, accounting for half the additional rise in the college premium among young workers relative to the old.

These papers offer a novel account of skill-premium dynamics that does not require successive technology waves to be inherently more skill-biased—though it does not preclude this either. Skill demand rises when the rate of emergence of new work accelerates.

For "What Makes New Work Different from More Work?" David Autor acknowledges support from the Hewlett Foundation, the Google Technology and Society Visiting Fellows Program, the NOMIS Foundation, the Schmidt Sciences AI2050 Fellowship, the Smith Richardson Foundation, and the James M. and Cathleen D. Stone Foundation. Anna M. Salomons acknowledges support from Instituut Gak.

The Dollar's Evolving Role in International Bond Markets

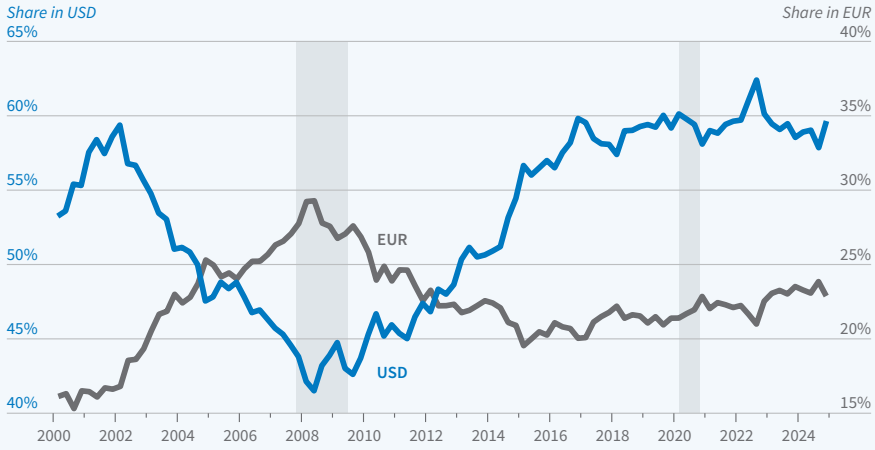
International debt securities (IDS)—bonds issued, listed, or governed outside the issuer's home country—had a total value of $2 billion in 1970 but grew to $30 trillion by 2024. While the dollar has been the largest denomination currency for IDS since 2000, its dominance has fluctuated considerably, even as possible alternatives like the euro, created in 1999, and the Chinese renminbi, whose internationalization began in 2010, have emerged. In Dollarization Waves: New Evidence from a Comprehensive International Bond Database (NBER Working Paper 34942), Swapan-Kumar Pradhan, Eswar S. Prasad, Előd Takáts, and Judit Temesvary use a dataset compiled by the Bank for International Settlements to examine how the dollar's prominence in IDS has varied since the 1960s.

The dollar's share of IDS does not display a uniform trend. Instead, it has ebbed and flowed. In this century, the dollar's share of outstanding IDS fell from roughly 60 percent in the early 2000s to about 43 percent around 2008, then surged back to approximately 60 percent by the latter half of the 2010s. Earlier data, starting in 1966, reveals two prior waves, with the dollar's share rising in the early 1980s and again in the late 1990s before declining after each peak. The dollar's share in 2024 is similar to what it was in both the early 1970s and the early 2000s.

The euro experienced a notable rise after its creation in 1999, with euro-denominated new issuance nearly matching dollar issuance in the years preceding the global financial crisis (GFC). However, the euro's share subsequently declined as euro-denominated issuance by banks and nonbank financial institutions was pulled back after the crisis. By 2024, the euro's share remained higher than at its introduction but well below its pre-GFC peak. The Japanese yen and Swiss franc have experienced declining IDS shares, while the Chinese renminbi's share has risen modestly since the GFC from near zero to rival the yen's share by 2024. Holding exchange rates constant at their 2000 levels smooths the fluctuations in the dollar share but does not eliminate them.

Alignment between a country's domestic currency and a reserve currency is a strong predictor of denomination patterns. A 1 percentage point increase in a country's dollar currency zone alignment is associated with an average 0.13 percentage point increase in the dollar's share of that country's new IDS issuance. Higher domestic policy rates correlate with greater dollar denomination, while higher US Treasury yields—reflecting increased dollar funding costs—are negatively associated with the dollar's share.

Heightened geopolitical risk in an issuer's home country leads public sector issuers to increase dollar-denominated issuance. The exception is US-based issuers, for whom rising domestic geopolitical risk is associated with diversifying away from the dollar and toward the euro.



This figure excludes euro-denominated IDS issued within the euro area by issuers with euro area nationality. Grey shaded areas denote NBER-dated recessions. Source: Researchers' calculations using data from multiple sources.

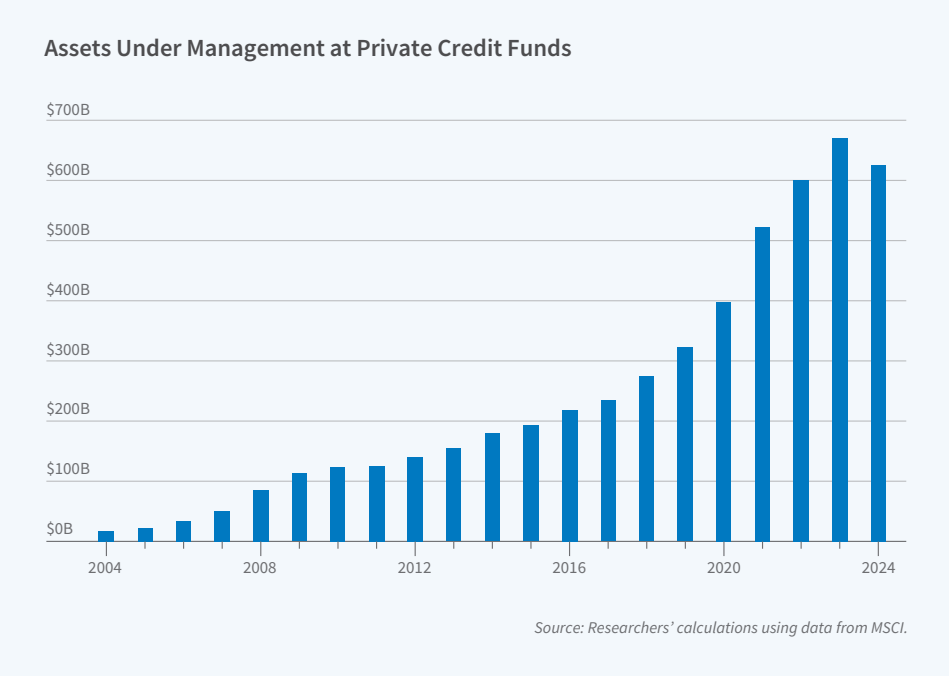
The currency denomination of international debt securities has fluctuated over the last six decades, with the dollar's share in 2024 close to where it stood in the early 2000s.

Banks vs. Private Credit Funds: A Balance-Sheet Comparison

Recent decades have seen corporate lending shift away from traditional banks and toward private credit funds. The latter are investment vehicles structured as limited partnerships that extend loans to businesses, often middle-market firms without easy access to conventional financing. Assets in the private credit sector have grown from under $10 billion in the early 2000s to more than $1 trillion in 2024. Along with this growth, there have been rising concerns that private credit may replicate the fragilities historically associated with banking: high leverage, maturity mismatch, opacity, and interconnectedness with the broader financial system.

In Private Credit, Balance Sheets and Financial Stability (NBER Working Paper 34991), Gregor Matvos, Tomasz Piskorski, and Amit Seru examine whether these concerns are supported by the structure of private credit funds' balance sheets. Their analysis draws on the MSCI Private Capital Universe, a proprietary dataset covering approximately 1,300 funds and nearly 9,000 individual loan holdings from 2000 to 2024, representing roughly 65 percent of US private credit activity. They compare the capitalization, funding structure, maturity alignment, and performance of these funds to comparable measures for US commercial banks.

Equity typically accounts for between 65 and 80 percent of the financial structure of private credit funds, compared with approximately 10 percent of the capital structure for US commercial banks. Banks thus operate with much more leverage. The equity-to-assets ratio across all funds averages 0.85, with an asset-weighted mean of 0.79, indicating that larger and smaller funds display similar leverage. Even among funds that report active use of bank credit lines, about two-thirds of assets remain equity financed. These credit lines, primarily provided by commercial banks, function as liquidity management tools to bridge capital calls and smooth transaction timing rather than as sources of persistent leverage.



Private credit funds exhibit little or no maturity mismatch—a structural vulnerability that has been central to banking crises from the Great Depression through 2008. Funds typically have a lifetime of about 10 years, while the underlying loans they hold mature in approximately five years on average. Asset cash flows therefore arrive well before the fund winds down. This contrasts sharply with banks, which finance long-duration assets with short-term deposits that can be withdrawn on demand.

Private credit portfolios are broadly diversified. Asset-level data covering $477 billion in holdings show that financials account for 20.6 percent of total assets, followed by industrials at 15.4 percent and healthcare at 12.4 percent. Although New York, Texas, and California together represent about one-quarter of private credit exposure, the remaining loans are distributed across numerous states. This diversification limits the sector's vulnerability to idiosyncratic, sector-specific shocks.

Realized performance data indicate that downside risk is largely absorbed by equity investors rather than creditors. Across 1,267 funds, mean annualized net returns to limited partners are 9.6 percent, with a median of 9.1 percent. Extreme losses are rare; the 5th percentile return is approximately –3.8 percent. Results for fully exited funds are broadly similar, with mean returns of 9.9 percent, suggesting that these patterns are not primarily driven by valuation smoothing in active portfolios.

The researchers note that most of the private credit sector's expansion has occurred during relatively benign credit conditions, so its resilience under severe macroeconomic stress remains untested. They also identify a number of potential sources of future fragility, including competitive pressures that could lead to higher leverage and looser underwriting over time, expanding bank-nonbank linkages during economic downturns, transparency, and the risk that losses of limited partners, many of whom invest in multiple funds, could result in correlated portfolio adjustments and tightening of overall credit supply. A related set of questions concerns governance, control rights, and monitoring in private credit. In this context, stressed conditions could trigger "valuation contagion," where uncertainty about asset values spills over into fundraising, secondary markets, or affiliated vehicles, potentially contracting credit to affected firms.

The researchers acknowledge support from the Private Equity Research Consortium, the Institute for Private Capital, and MSCI.

Asset Transfers and End-of-Life Management of Oil and Gas Wells

The US has an estimated 2.1 million abandoned and unplugged oil and gas wells, as well as nearly 1 million still-producing wells. At the end of their productive lives, wells must be sealed through a process known as "plugging" to prevent groundwater contamination, methane emissions, and other environmental hazards. These environmental hazards impose social costs; one federal study valued the social cost of methane emissions from orphaned wells at $1.0 to $2.2 billion per year. Typical plugging costs range from $20,000 to $180,000 per well.

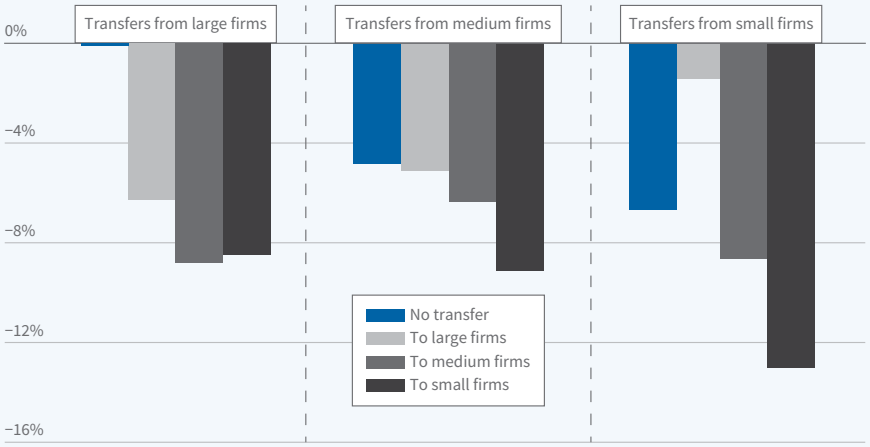
In Cutting Costs or Cutting Corners: Asset Reallocation in Oil and Gas Production (NBER Working Paper 34961), Sarah C. Armitage, Judson Boomhower, and Catherine Hausman investigate how the transfer of oil and gas wells between firms affects production outcomes and environmental remediation. The researchers explore two potential motivations for transfers: productive reallocation, in which smaller firms with lower operating costs can profitably extend a well's life, and liability shielding, in which well-capitalized firms can avoid end-of-life environmental costs by selling wells to undercapitalized operators who may declare bankruptcy (or otherwise walk away) rather than pay for plugging.

The researchers assemble a novel dataset for hundreds of thousands of wells across California, Colorado, Pennsylvania, and Texas from 1992 to 2023. These four states represent roughly 45 percent of US oil and gas production. They find that 8 percent of wells change operators in a typical year, excluding several large corporate mergers, implying that on average a well will be transferred every 13 years. Lower-value wells are transferred more frequently: a well at the 25th percentile of continuation revenue is approximately 2 percentage points more likely to be transferred than a well at the 75th percentile. Low-value wells are disproportionately transferred to low-value firms, with the average transfer of a well below the top quartile of continuation revenue involving a buyer that is smaller than the seller.

Non-producing wells that have been transferred are overall 5 percentage points less likely to have been plugged five years after transfer than wells that have not been transferred. Wells operated by or transferred to small firms are especially unlikely to be plugged. In contrast, the overall production volumes of transferred wells after transfer are similar to those of non-transferred wells. Wells transferred to small firms in particular produce lower volumes but are more likely to remain producing.

Oil and Gas Well Transfers and Plugging of Non-Producing Wells

Difference in likelihood of well plugging relative to a non-transferred well operated by a large firm (five years after transfer)



Source: Researchers' calculations using a constructed dataset compiled from multiple sources.

Transferred wells are less likely to be plugged and more likely to generate environmental costs.

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