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Cross-Country Evidence on Labor Market Fluidity and Wage Growth

Job-to-job labor market flows vary substantially across countries. In **Labor Market Fluidity and Human Capital Accumulation** (NBER Working Paper 29698), Niklas Engbom finds that greater labor market fluidity—more frequent job changes per worker—is associated with greater human capital accumulation as workers acquire new skills. Greater fluidity also allows workers to find jobs where their skills are most useful. As a result of these two factors, workers' wages increase faster in nations with more fluid labor markets.

Engbom analyzes worker-level panel data for 23 OECD countries over a period of more than 20 years. He finds substantial variation in labor market fluidity across nations. The most fluid job markets are 2.5 times as fluid as the least, and they also exhibit more rapid wage growth over the life cycle. This is not due to differences across nations in age, education, or workforce composition.

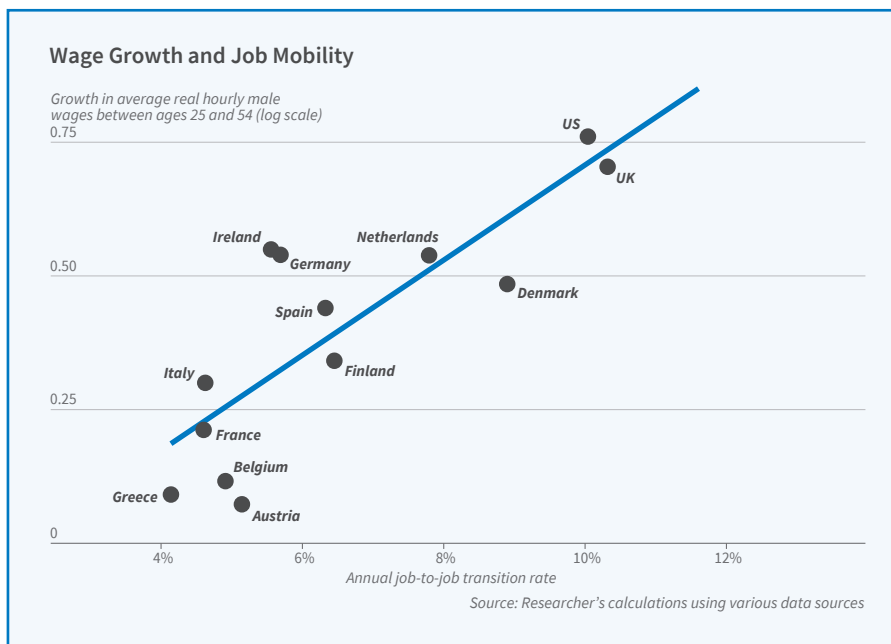
It is only partially driven by the average number of job changes over the course of a career. On average, worker job

changes are associated with annual wage increases of between 5 and 6 percent in both high and low fluidity labor markets. Wage jumps associated with job changes account for about a quarter of the higher life cycle wage growth that is observed in

high relative to low fluidity job markets. Most of the additional wage growth in high fluidity countries occurs while workers are employed at continuing jobs, not when they move from one job to another.

Across OECD nations, more fluid job markets are associated with greater accumulation of worker skills and faster wage growth.

The researcher interprets these empirical results by developing a theory of lifetime skill accumulation in a frictional labor market. The framework incorporates both endogenous accumulation of human capital on the job and elements of a job ladder with workers moving from job to job in search of the ideal fit for their skills. He benchmarks the life cycle model using data from the United States, a high fluidity nation where wage growth and mobility both decline as workers age. He also compares companies' hiring costs in different nations. He finds that differences in labor



market fluidity account for half of the faster wage growth experienced by high fluidity economies. About one-third of the disparity across countries is due to workers climbing job ladders more slowly in less fluid labor markets, and another third is due to slower accumulation of skills.

The cross-country data also reveal disparities in on-the-job training investment. Workers spend more time on training in high fluidity nations, as well as in high fluidity occupations and sectors within nations. They train more in high paying,

more productive companies, which offer them a higher return—higher wages—on their skills. Workers also train less at smaller, lower paying firms in less fluid sectors because they have a harder time moving to jobs that better utilize their skills. Expecting lower returns, they invest less in training.

Lower labor market fluidity correlates with policies and regulations that raise firms’ costs of doing business as well as the costs of starting a business. Engbom points to the case of Spain to illustrate the pos-

sible effects of regulatory change. In the mid-1990s, Spain shifted from having the most stringent employment protection in continental Europe to having some of the least protective institutions. After a lag, labor market fluidity rose substantially. Wages of new entrants to the labor force initially fell, but they grew faster as workers aged. By age 50, average wages after the increase in fluidity were substantially higher than wages at the same age before labor market reforms.

—Laurent Belsie

Preemptive Capital Controls and Macroprudential Policies

Reactive monetary policy may not be able to insulate domestic output from external economic shocks in emerging economies with floating exchange rates. If monetary policy cannot offset the output effects of capital flows and credit growth, nations may consider preemptive active-management policies. These include capital flow management and macroprudential policies, regulations that may limit lending, mandate bank capital requirements, impose loan-to-value or deposit ratios, require observance of debt-service-to-income ratios, or apply special taxes and fees to economic activity considered potentially destabilizing.

In **Preemptive Policies and Risk-Off Shocks in Emerging Markets** (NBER Working Paper 29615), [Mitali Das](#), [Gita Gopinath](#), and [Şebnem Kalemli-Özcan](#) analyze whether policies designed to limit the risk taken on by individual borrowers can reduce the risk premium that a nation is required to pay in global capital markets. Using a new dataset on active, countercyclical policy

Policies that preemptively reduced capital inflows from foreigners and the accumulation of foreign exchange debt reduced external finance risk premia following risk-off shocks.

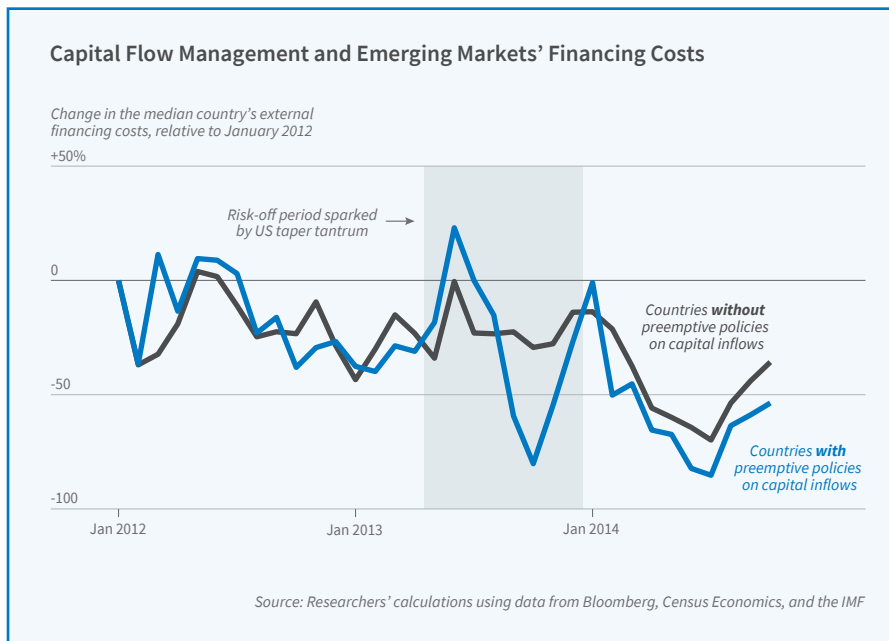
measures used to adjust capital flows and borrowing from 1996 to 2020, the researchers examine external borrowing costs in 56 emerging or developing countries with floating or managed floating currencies. They conclude that countries with preemptive active-management policies exhibited a 30 percent lower interest rate premium on external borrowing during an adverse economic shock. They also had lower foreign exchange

debt and lower exchange rate volatility.

The researchers measure external finance premia for each country after the “Taper Tantrum” associated with Federal Reserve Chairman Ben Bernanke’s speech in 2013, and after the COVID-19 shock in 2020. They define preemptive policies as any officially reported net capital flow management that occurred in the five years before a risk-off shock, or the imposition of any one of 11

domestic macroprudential policies during the same time period. The researchers determine that preemptive policy measures were in place if there was a tightening action in at least one instrument and if the total number of tightening actions across all policies during the period exceeded the total number of easing actions.

The risk premia for the treatment group—countries that used preemptive measures prior to a



shock—were compared to risk premia for countries that did not. More than 80 percent of the countries in the sample implemented macroprudential policies at some time during the sample period, and more than 70 percent eased them in response to the COVID-19 shock. More than one-third managed both capital inflows and outflows.

The effect of preemptive policies was measured by their effect on the external finance premium—the difference

between domestic and US interest rates adjusted for the expected changes in the exchange rate—in the 12 months after each shock. When interest rate differentials and exchange rate movements offset one another, the external finance premium is zero. In the researchers’ sample, the average country faced an average external finance premium of 3 percent. Preemptive controls on capital outflows increased the external finance risk premium, possibly because for-

eigners demanded a higher premium to pay for the risk of being unable to get capital out of a country.

The researchers observe that the lower risk premium preserves a country’s capital market access when it is most needed. Policies that limit the buildup of debt and currency mismatches reduce the need to defend the exchange rate, allowing central banks to focus on domestic policy objectives.

—Linda Gorman

Monetary Policy’s Disparate Impact on Labor Market Subgroups

Employment among populations with lower labor force attachment responds more to expansionary monetary policy in tight labor markets than employment among more attached groups, according to [Nittai K. Bergman](#), [David A. Matsa](#), and [Michael Weber](#) in **Inclusive Monetary Policy: How Tight Labor Markets Facilitate Broad-Based Employment Growth** (NBER Working Paper 29651).

The findings suggest that by tightening labor markets, the Federal Reserve’s recent move from strict to average inflation targeting especially benefits workers with lower labor force attachment.

Following its 2020 Monetary Policy Report, the Federal Reserve emphasized maximum employment as a “broad-based and inclusive goal” and stressed the importance of a strong labor market to generate employment gains widely across society. Monetary policy’s effects on different segments of the labor market, however, are not well understood. The researchers seek to address this gap.

The study tracks the impact of monetary policy on workers

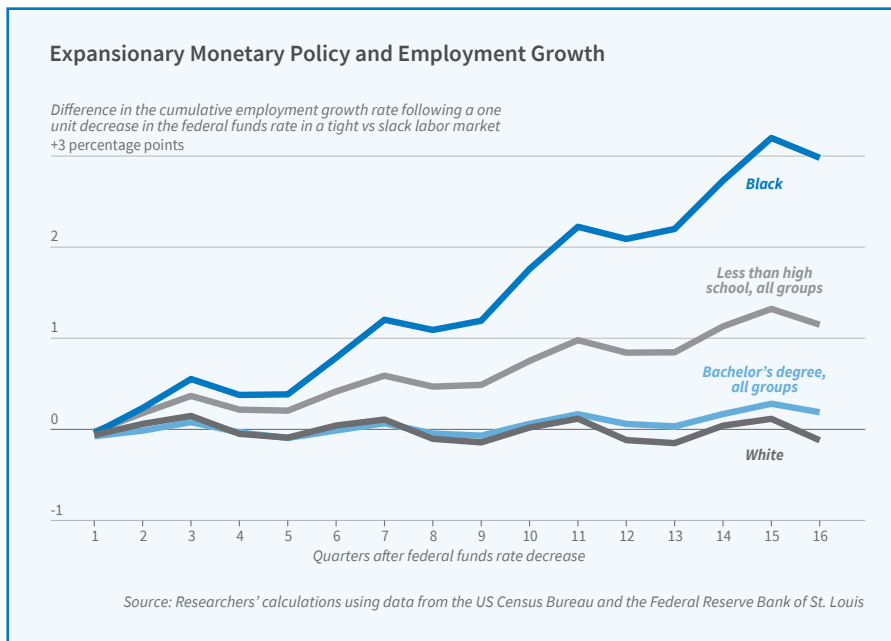
In tight labor markets, expansionary monetary policy has its largest impact on employment growth for demographic groups with lower than average labor market attachment.

in different demographic groups, defined by race, education, and gender. For each group, the researchers estimate how employment growth in 895 local labor markets is related to the federal funds rate and local labor market tightness, which they measure as the market’s aggregate prime-age employment-to-population ratio. They study the period 1990 to 2019. For groups with lower average labor market attachment—Blacks, the least educated, and women—expansionary monetary policy has a larger effect on employment

growth in tighter labor markets. For example, they find that a one standard deviation drop in the federal funds rate (2.25 percentage points) increases the Black employment growth rate over the next two years by 0.91 percentage points more in tight labor markets than in slack ones. Similarly, for workers who did not complete high school, a one standard deviation drop in the federal funds rate increases employment growth over the subsequent two years by 0.39 percentage points more in tight labor markets than in slack ones. These dif-

ferential impacts in tight and loose labor markets represent gains in mean employment growth rates during the sample period of 9 percent for Black people and 18 percent for those who did not finish high school.

The researchers also present a heterogenous-worker New Keynesian model that provides a framework for interpreting their finding that monetary policy has these disparate effects. Workers are differentiated by their productiv-



ity levels, which could vary due to differences in education levels, on-the-job discrimination, or other reasons. The trade-off between unemployment and inflation — the Phillips curve — plays a key role in determining optimal central bank policy in this setting. When the inflationary pressures from a tight labor market are modest, as evidence from the two

decades prior to the pandemic suggests, then the central bank can retain low interest rates longer. This expansionary policy results in a higher labor force participation rate for low-productivity workers over time.

The theoretical and empirical results in this study both highlight the role of labor market tightness in mediating the impact

of monetary policy on workers with low labor force attachment. They suggest that the Federal Reserve's recent change in monetary policy regime, from strict to average inflation targeting, will over time increase the labor market activity of demographic groups with lower historical employment rates.

—Lauri Scherer

The Effects of Mandatory Investment in Wildfire Resilience

Wildfires have ravaged California in recent decades, often destroying homes and displacing residents. Building codes that require fire resistance in new construction have been one of the responses to this devastation. In **Mandated vs. Voluntary Adaptation to Natural Disasters: The Case of US Wildfires** (NBER Working Paper 29621), [Patrick W. Baylis](#) and [Judson Boomhower](#) examine the impact of mandatory statewide regulations on new residences. They find that newer homes, built under these rules, are much more likely to survive a wildfire.

In the aftermath of the Oakland Hills Firestorm of 1991, California enacted a series of regulations for new construction in fire-prone areas. Revised several times over the last 30 years, the regulations mandate fire-resistant and fire-protective material for roofing, siding, doors, and windows. The codes apply wherever the state provides firefighting services, which is the case in many rural areas. Municipalities and other areas that provide their own fire-fighting services have historically had the option of adopting the standards for areas designated by the state as Very High

California homes built after 2008 and subject to statewide wildfire building codes are 40 percent less likely to be destroyed if a wildfire strikes than homes built in 1990.

Fire Hazard Severity Zones. As of 2007, 151 of 208 local governments in fire-prone areas had either enacted the standards or imposed what they consider comparable rules.

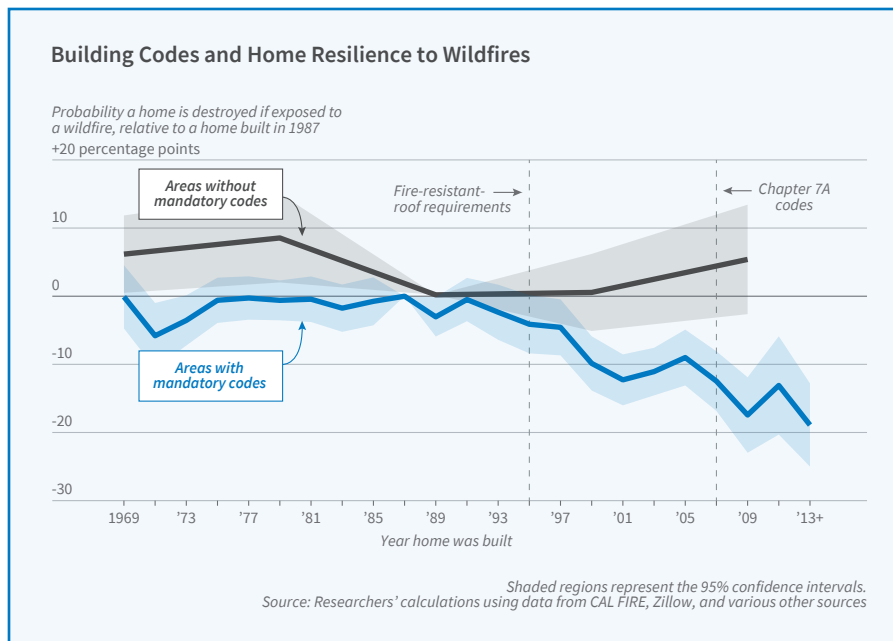
The researchers assemble a database of homes that are at risk of wildfire damage in California, Arizona, Colorado, Oregon, and Washington. Their sample includes 55,408 single-family homes that experienced 112 fires between 2003 and 2020. Thirty-nine percent of these homes were destroyed. Among these states, only California has enacted wildfire building codes at the state level. The

other states encourage residents to implement fire-protection measures through informational campaigns and incentive programs.

The researchers find that mandatory fire-resistance building codes achieve substantially larger survival benefits than these voluntary approaches. A California house built in 2008 or later is 16 percentage points, or about 40 percent, less likely to be destroyed by wildfire than a home with the same wildfire exposure that was built in 1990, before California adopted mandatory statewide wildfire codes. The benefits also spill over to neighboring

homes that are not built to the new codes. If an older home is located within 33 feet of a new or updated structure, it is 2 percentage points, or 6 percent, less likely to be destroyed in a wildfire than a home without a more modern neighbor.

Having established that building codes enhance housing resiliency, the researchers estimate the minimum annual wildfire risk level at



which universal mitigation would be cost effective. They conclude that building codes for new homes produce substantial

net benefits in the most fire-prone areas of California, suggesting that enacting similar codes in fire-prone areas of other

western states would likely pass a cost-benefit test.

— Steve Maas

Letters of Recommendation Improve Youth Labor Outcomes

Providing summer youth workers with letters of recommendation to use in job applications raised their employment and earnings, according to Sara B. Heller and Judd B. Kessler in *The Effects of Letters of Recommendation in the Youth Labor Market* (NBER Working Paper 29579).

The researchers partnered with the New York City Summer Youth Employment Program — an initiative that provides summer jobs to youths aged 14 to 24 — to email easy-to-complete surveys to supervisors of youth workers in 2016 and 2017. Just under 30,000 youths received ratings, of whom 8,780 were in the treatment group and rated highly enough by their supervisors to receive a computer-generated recommendation letter that could be used in applying for subsequent jobs. The researchers examined New York State Department of Labor data to see what effect, if any, receiving letters had on the youths' employment and salaries.

The researchers found that a summer worker who received a letter was 3.1 percentage points more likely to be hired in the next year. This represents a 4.5 percent increase over the 70 percent average employment rate for the control group of youths who did not receive letters. Positive employment effects were persistent: those who received letters were 2 percentage points more likely to have a job over the next two years, a 2.3 percent increase over the control group average of 84 percent during this period. Earnings were also higher for those who received a letter, by \$154 in the first year. The cumulative earnings

increase over two years was \$433, or 4.4 percent, higher than the earnings of those who did not receive letters. The nonrecipients' earnings

Providing youths in a New York City summer jobs program with recommendation letters increased their subsequent employment and earnings.

averaged roughly \$9,900 over this time period.

To discern whether the stronger employment outcomes of those with letters were due to a change in the behavior of the youth workers in their job search, or in the behavior of potential employers, the researchers invited 4,000 participants from both treatment and control groups in the 2017 cohort to apply for a short-term online job. Those who received letters were no more likely to apply for the job — and no more likely to check a box asking to be

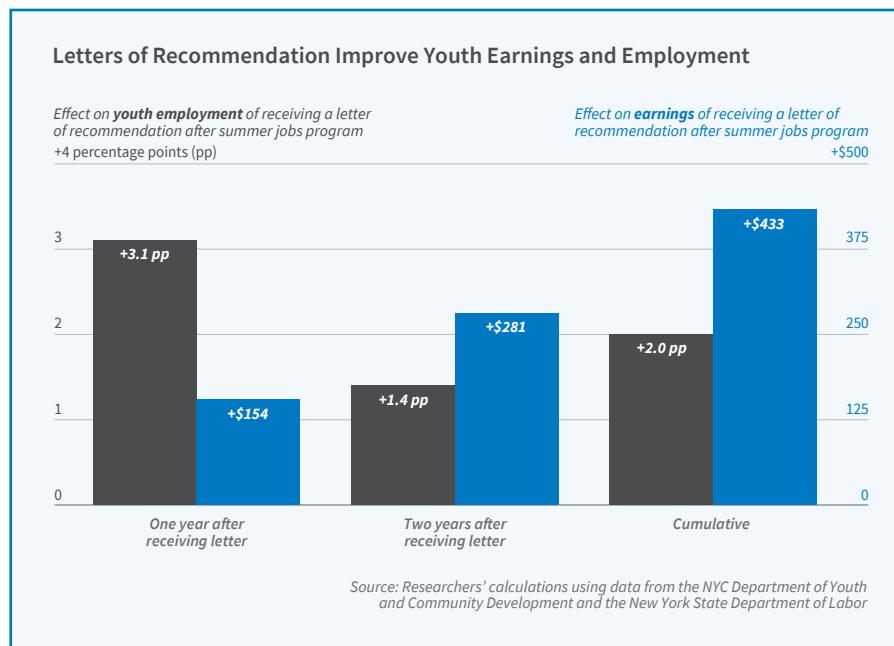
When invited to apply for the short-term position, however, 16.5 percent of applicants from the treatment group submitted a letter

of recommendation, but only 4.5 percent of applicants from the control group did.

The researchers speculate that this difference in signaling to employers is the key driver of outcome changes: that the letters affect hiring rates only when employers see them. If so, the difference in observed letter use would imply that actually using the letter increased employment by 15 percent in the first year and 8 percent over two years, and raised earnings by about \$1,400 over two years.

The employment rate for summer workers from minority groups drove the overall employment effects, with no significant changes among Whites, even though the average rating for the former group was lower than for the latter. This may suggest that youths from minority groups face larger frictions in the labor market than their White counterparts. The researchers also found that high school graduation rates slowed down but did not stop among students receiving letters of recommendation, suggesting that labor market activities competed with schoolwork.

— Brett M. Rhyme



considered for a more-selective, higher-paying opportunity — than those who did not. This suggests that the positive employment effects were not driven by factors such as increased motivation, job search, or confidence.

Tracking the Price of Nails since 1695

In *The Price of Nails since 1695: A Window into Economic Change* (NBER Working Paper 29617), Daniel E. Sichel tracks nail prices over three centuries. He uses this extraordinary data series to explore changes in manufacturing processes and productivity growth. He focuses on nails because they are a basic manufactured product whose form and quality have changed relatively little since the late 1600s. The production method, however, has changed dramatically. At the beginning of the period being studied, nails were hand-forged by hammering a rod of iron. Later, nails were cut from strips of iron or steel, and most recently, cut from wire.

Sichel constructs an index of nail prices beginning in 1695. For the first hundred years of his sample, the prices are drawn from accounts data maintained at Greenwich Hospital in the United Kingdom. From 1784 on, the data reflect prices in the United States, starting with wholesale nail prices in Philadelphia and drawing on a wider range of sources over time.

Sichel compares nail prices with an index of overall consumer prices and finds that the real price of nails declined, on average, by about 1.5 percent per year between the late 1700s and the mid-1900s. This translates into a real price decline of 90 percent.

This decline, while substantial, pales in comparison to the declines in the prices of some other goods and services that have been studied over long periods, such as computing and lighting.

The real price of nails fell by a factor of 10 from the late 1700s to the middle of the twentieth century, largely as a result of productivity growth in manufacturing.

While declining input prices contributed to reductions in nail prices, the most important source of the decline was multifactor productivity growth in nail manufacturing due to increasing specialization of labor and the reorganization of production processes. The long-term trend of declining real nail prices reversed in the middle of the last century. This was partly due to rising material prices, but also to difficulty in tracking domestic production

of basic nails during the last half century. In the wake of import competition, US nail producers have shifted toward specialty nail production. Finally, including the complementary

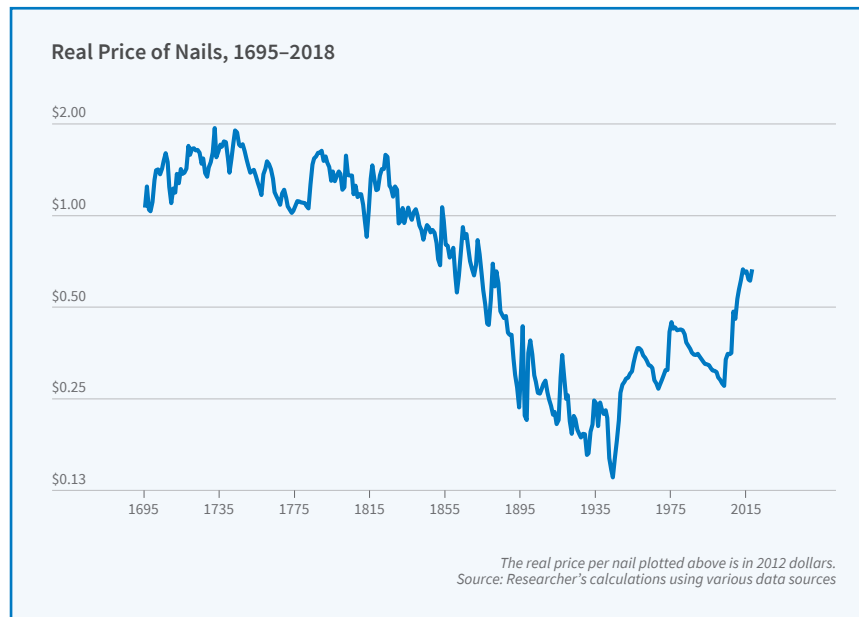
technology of nail guns, which have diffused in recent decades, the price of installed nails has risen much less since 1950 than the price of nails themselves.

The share of nails in GDP dropped from 0.4 percent in 1810—comparable to today's share of household purchases of personal computers—to a trivial share today. The decline in nail prices had important effects on downstream industries, most notably construction.

In addition, Sichel highlights the changing “place” of nails in the public mind as nails shifted from being precious to being a throw-away item.

The study highlights some of the difficulties involved in price measurement, such as changes in quality, import substitution, and the role of complementary input technologies. Changes in nail prices provide useful insight into some of the patterns of US manufacturing development.

—Lauri Scherer



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