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Employer Concentration and Stagnant Wages

Stagnant wages and a declining share of labor income in GDP in recent decades have spawned a number of explanations. These include outsourcing, foreign competition, automation, and the decline of unions.

Two new studies focus on another factor that may have affected the relative bargaining position of workers and firms: employer domination of local job markets. One shows that wage growth slowed as industrial consolidation increased over the past 40 years; the other shows that in many job markets across the country there is little competition for workers in specific job categories.

In Strong Employers and Weak Employees: How Does Employer Concentration Affect Wages? (NBER Working Paper No. 24307), Efraim Benmelech, Nittai Bergman, and Hyunseob Kim analyzed county-level census data for industrial firms for the period 1977 to 2009 to study the impact of employer concentration on wages in local labor markets. By focusing on manufacturing, they were able to control directly

for worker productivity.

The researchers found that, although there was substantial cross-sectional and

Two studies suggest that an increase in employers' monopsony power is associated with lower wages.

time series variation in concentration, average local-level employer concentration increased between 1977–81 and 2002–9, based on the Standard Industrial Classification four-digit code for industry groups. Their measure of concentration is the Herfindahl-Hirschman Index (HHI), which is defined as the sum of

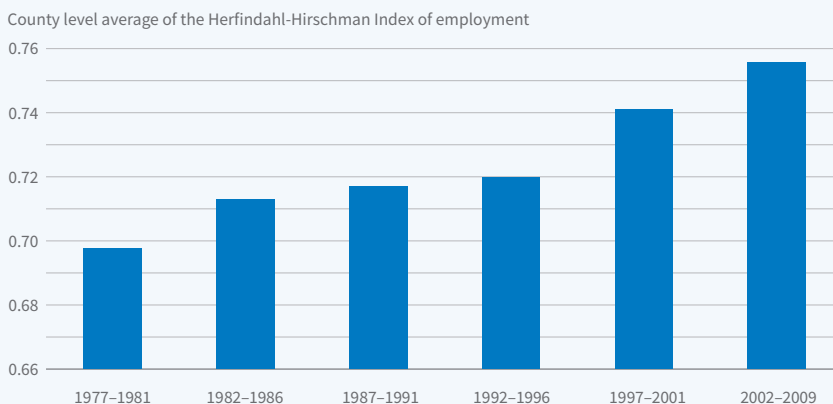
the squares of the employment shares for all of the firms in a given industry. The employment-weighted mean value of

this index rose from 0.698 to 0.756 during the study period, an increase of 5.8 percent. Forty percent of the plant-year observations were associated with manufacturing facilities in counties dominated by just a few firms.

The researchers found a negative relationship between employer concentration and wages; it

was twice as strong in the second half of their data sample as in the first half; a one standard deviation increase in the HHI was associated with a wage reduction of between 1 and 2 percent. They estimate that a firm operating in a labor market in which it was the only employer would pay wages 3.1 percent lower than those of a firm that operated

Employment Concentration, 1977–2009



The Herfindahl-Hirschman Index is a measure of market concentration: 0 represents perfect competition among employers and 1 represents a single employer
Source: NBER Working Paper No. 24307; Researchers' calculations using data from the Longitudinal Business Database

in a less concentrated market. Most of the decline in wages appeared to occur as labor markets approached the pure monopsony case, namely the situation in which only one firm is hiring workers.

In addition to finding lower wages in monopsony markets, the researchers also found that, over time, firms that dominate their labor markets were less likely to share productivity gains with employees. A one standard deviation decline in the HHI mapped to an increase in the elasticity of wages with respect to productivity of about 25 percent, from 0.38 to 0.47.

Over the course of the study period, U.S. imports from China increased. The researchers found that import competition from China, which was associated with the closure or relocation of plants in a number of industries, accelerated the trend toward greater employer concentration in some local labor markets. This finding suggests that import competition not only reduced the demand for workers who previously produced the now-imported products, but that it may also have depressed wages for workers in other industries in affected labor markets as a result of increased labor market concentration.

The only employees who did not experience wage stagnation in markets with high plant concentration were those who belonged to unions. About one quarter of the plants studied were unionized; the fraction was lower in the later than in the earlier years. Because this study focuses on workers employed by industrial firms, the fraction of workers who are union members is higher than for the U.S. labor market more broadly.

To assess the robustness of their

results, the researchers compared plants in the same industry owned by the same company but operating in different locations; they found that “those located in a more concentrated local labor market pay significantly lower wages.”

In **Concentration in U.S. Labor Markets: Evidence from Online Vacancy Data** (NBER Working Paper No. 24395), José A. Azar, Ioana Marinescu, Marshall I. Steinbaum, and Bledi Taska found that in most locations employers have substantial monopsony power.

The researchers studied job vacancies in the 709 federally delineated com-

stronger an employer’s bargaining position.

The average market had the equivalent of 2.5 recruiting employers. Under the standards that federal antitrust officials use when determining whether product markets exhibit excessive levels of concentration, 54 percent of the markets were highly concentrated, meaning they had the equivalent of fewer than four firms recruiting employees. Eleven percent of markets were moderately concentrated, and only 35 percent had low concentration.

Nationwide, among the 30 largest occupations, marketing managers, web developers, and financial analysts faced

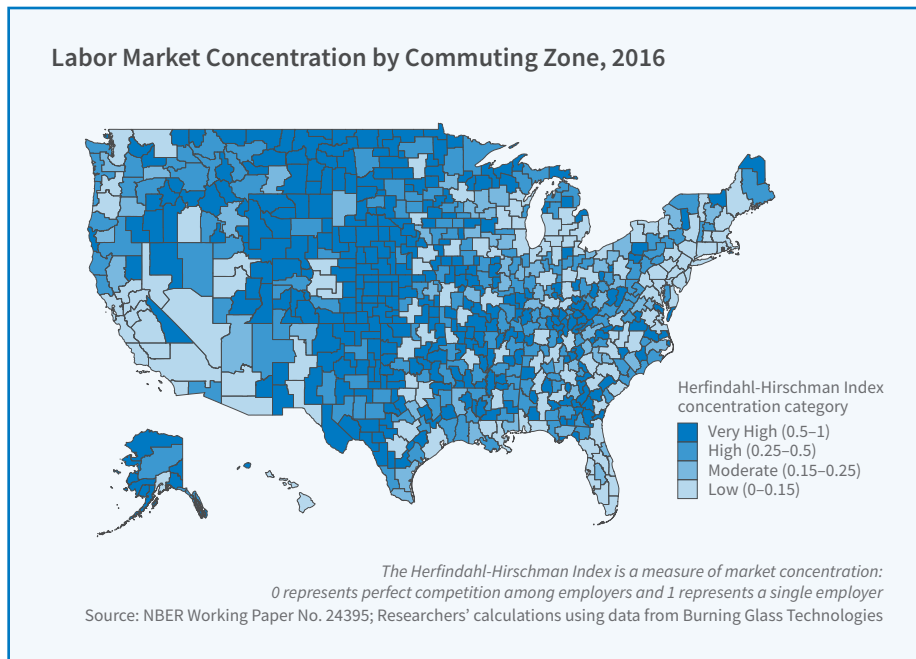
the least favorable job markets; markets were most favorable for registered nurses, tractor-trailer drivers, and customer service representatives.

The actual picture for job seekers, however, was brighter than these figures would indicate because commuting zones vary widely in employment levels. Commuting zones encompassing large cities had lower levels of labor market concentration than those

around small cities or in rural areas.

Accounting for the unequal distribution of employment, the researchers found that 23 percent of the national workforce is in highly or moderately concentrated labor markets. They argue that traditional market concentration thresholds underestimate workers’ loss of bargaining power over time. They point out that those thresholds are geared to gauging the impact of mergers on the consumer marketplace, and that while consumers can buy products without the producers’ explicit agreement, workers must find employers who agree to hire them.

— Steve Maas



muting zones, which depict the bounds of local economies. Drawing on a database compiled by Burning Glass Technologies from 40,000 employment websites, they calculated the level of labor market concentration by commuting zone, occupation, and quarter for the year 2016. They selected the top 200 occupations as classified by the Bureau of Labor Statistics’ six-digit code, capturing 90 percent of the job postings in the database.

As a yardstick for labor market concentration, the study calculated the Herfindahl-Hirschman Index measure, similar to the application in Working Paper #24307. The results suggested that the higher the market concentration, the

Efforts to Curb Tax Avoidance Offshore Paid Off, to a Degree

In 2008, the United States government launched a number of enforcement initiatives to rein in its residents' use of secret offshore accounts to avoid their tax liabilities. Through several high-profile lawsuits, the U.S. forced a number of Swiss banks, including UBS, the largest Swiss banking institution, to share account information about U.S. customers. By threatening sanctions, the U.S. also compelled widely recognized tax haven countries — including Switzerland, Luxembourg, Liechtenstein, Malta, Monaco, and Panama — to accept information exchange agreements that allow the Internal Revenue Service (IRS) to request and receive account information about persons suspected of tax evasion. Finally, the IRS established several “voluntary disclosure” programs offering account holders a temporary window during which they could disclose their offshore accounts without risking criminal penalties.

Niels Johannesen, Patrick Langetieg, Daniel Reck, Max Risch, and Joel Slemrod explore the effects of these enforcement initiatives in **Taxing Hidden Wealth: The Consequences of U.S. Enforcement Initiatives on Evasive Foreign Accounts** (NBER Working Paper No. 24366).

The enforcement initiatives raised tax revenues: Annual reported capital income rose by \$2.5 to \$4 billion annually, corresponding to between \$700 million and \$1 billion in annual tax revenue. The researchers characterize these sums as “sizable, but ... small relative to independent estimates of the amount of concealed offshore wealth and capital income overall.”

A recent study by Annette Alstadsater, Niels Johannesen, and Gabriel Zucman (NBER Working Paper No. 23805) estimated the amount held offshore by U.S. households at \$1 trillion.

Recent enforcement initiatives increased reported capital income by \$2.5 to \$4 billion annually, yielding between \$700 million and \$1 billion in tax revenue.

The authors of **Taxing Hidden Wealth** use several datasets on income, foreign bank accounts, and participation in the Offshore Voluntary Disclosure program. They first document a surge in the number of U.S. taxpayers reporting a foreign bank account after the initiatives were implemented. Between

the increase in account filings was especially large for accounts more likely to be used for tax evasion — those located in traditional tax haven countries and those containing over \$1 million. In 2008, for example, there were

only 300 FBAR filings for accounts in the Cayman Islands; in 2009, there were 4,500. The researchers estimate that, all in, “the combined value of the accounts disclosed because of the enforcement efforts was just below \$120 billion.”

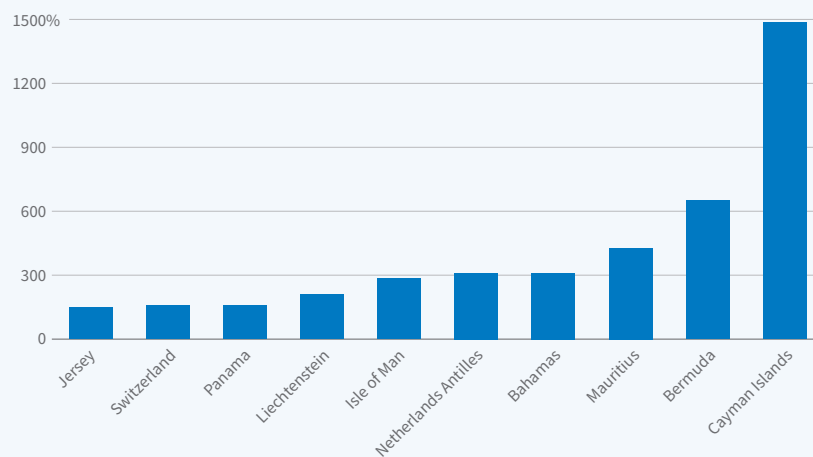
The study found that only 15,000 of the first-time FBAR filers used the voluntary disclosure program in 2009; the rest filed “quietly,” a strategy which allowed account holders to avoid back taxes or financial penalties but left them exposed to criminal penalties.

The researchers found an increase in taxable capital income among both first-time FBAR filers using the voluntary disclosure program and those not using the program, which suggests that the latter group included

many quiet disclosers who reported accounts in response to the new enforcement initiatives, while still avoiding an admission of tax evasion. Among first-time filers, account holders who used the voluntary disclosure program were more likely to disclose larger amounts and to disclose Swiss accounts. This suggests that taxpayers chose to participate in the voluntary disclosure program when they believed they faced a higher risk of detection and prosecution.

—Dwyer Gunn

Change in Number of Offshore Accounts Reported, 2008–09, by Country



Entries represent increase in Reports of Foreign Bank and Financial Accounts
Source: Researchers' calculations using data from the IRS Compliance Data Warehouse

2005 and 2008, an average of about 45,000 U.S. residents reported a foreign account for the first time by filing a Report of Foreign Bank and Financial Accounts (FBAR). In 2009, by contrast, there were 105,000 such first-time FBAR filers.

This dramatic increase, the researchers write, “is suggestive that a large number of taxpayers — a simple difference estimate would be around 60,000 individuals — disclosed previously unreported foreign accounts in response to the new enforcement policies.” This theory is supported by another finding:

The Peter Principle Isn't Just Real, It's Costly

In casual conversations, citing a variation of the Peter Principle — the idea that managers tend to “rise to the level of their incompetence” — often draws a chuckle, especially among those who work for incompetent managers. But in **Promotions and the Peter Principle** (NBER Working Paper No. 24343) Alan Benson, Danielle Li, and Kelly Shue study employee sales performance and promotion practices at a sample of 214 firms and find evidence that the Peter Principle is real.

The researchers find that the cost of promoting high-performing sales representatives regardless of their comparative managerial potential is actually quite high. Their results suggest that firms either are making bad promotion decisions or have embraced the idea that occasional bad promotions are the price they must pay to keep workers motivated.

First pro- pounded in the 1969 book *The Peter Principle: Why Things Always Go Wrong*, by Laurence J. Peter and Raymond Hull, this principle has been the source of endless fascination, examination, and humor. Among its primary postulates are that promotion decisions often are based on candidates' performance in current roles, not necessarily on the skills needed in their future management roles, and that the best workers are not always the best candidates for certain management positions.

The current researchers seek to test these hypotheses in a large-scale study of employee performance and promotion decisions. Importantly, their dataset includes informa-

tion on performance in managerial roles, which makes it possible to study whether some promotions are ultimately costly to firms.

Using data provided by a firm that offers sales performance management software, the

Outstanding sales performance increased the probability that an employee would be promoted, and was associated with sales declines among the new manager's subordinates.

researchers obtained access to anonymized records of the companies in the sample and tens of thousands of employees. They observed more than 1,500 employees promoted into management, 156 million sales transactions, and even the work characteristics of those holding jobs, including whether they worked individually or collaboratively.

The researchers also found that pre-promotion performance data could negatively predict a new manager's value after promotion: A doubling of the new manager's pre-promotion sales was associated with

a 7.5 percent decline in the sales performance of each new manager's subordinates.

In another twist, the researchers found that relatively poor prior sales performance among newly promoted managers was associated with significant improvements in their subordinates' performance. This negative correlation is consistent with the view

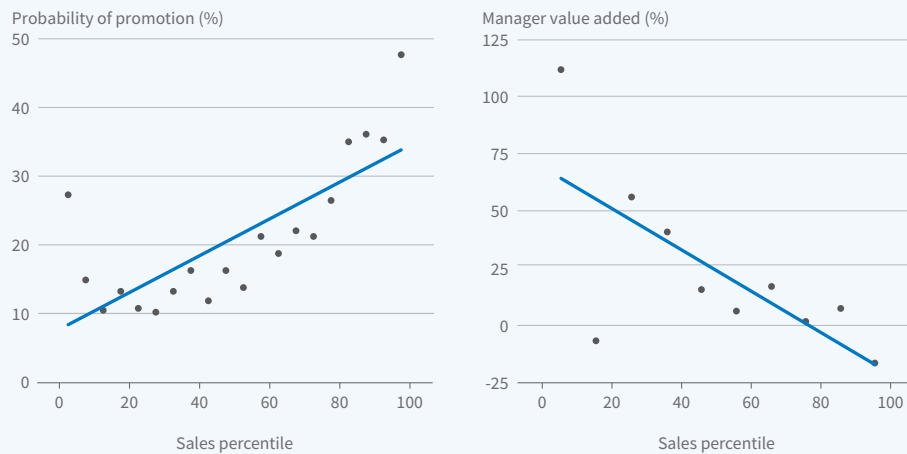
that if firms' promotion policies make it more difficult to be promoted if an employee has poor sales performance, then poor salespeople who are nevertheless promoted should be better managers.

A key observable trait that can help predict which salespeople might make better managers is whether they have experience working within sales teams, rather than individually.

The researchers found that, on average, employees with collaboration experience produce better results as managers.

The researchers stress that many firms seem to know that there is a trade-off when promoting top-performing salespeople at the expense of others who might make better managers. The firms accept the cost of weaker management in order to keep a simple and clear incentive structure in place to

Sales Record, Promotion Probability, and Managerial Performance



Manager value added is the average change in sales performance across all workers who switch to or from that manager
Source: Researchers' calculations using data from a sales-performance-management software firm

The employees were all in sales in the manufacturing, information technology, and professional-services sectors.

The data suggest that high-performing sales representatives are indeed more likely than other workers to be promoted into management. The doubling of sales credits increases the probability that a salesperson will be promoted by 14.3 percent relative to the base probability of promotion.

motivate employees in the sales ranks.

“The trade-off between incentives and match quality is likely to be an important

consideration for any firm or institution in which the skills required to succeed at one level in the organizational hierarchy differ

from the skills necessary to succeed at a higher level,” the researchers conclude.

—Jay Fitzgerald

When the Wheat Harvest and the Fracking Boom Rode the Rails

North Dakota produces between 250 and 300 million bushels of hard red spring wheat each year, about half of the U.S. harvest. It produces 300 to 400 million bushels of corn and 150 to 200 million bushels of soybeans.

In **Food vs. Fuel? Impacts of Petroleum Shipments on Agricultural Prices** (NBER Working Paper No. 23924) [James B. Bushnell](#), [Jonathan E. Hughes](#), and [Aaron Smith](#) examine how markets adjusted when the railroads that traditionally handle North Dakota’s vast grain harvest faced an unexpected surge in shipping demand from oil producers in the state’s Williston Basin. From 2010 to 2014, while total shipments of grain remained relatively constant, oil shipments increased from 26,000 railcars to over 343,000 per year. At the end of that period, oil represented about half of total rail shipments.

The greater demand for transporting oil led to rail network congestion, long shipping delays, and higher spoilage rates and storage costs. The new study finds that the costs of these developments were borne mainly by consumers, rather than farm-

ers. The wheat spread—the difference between the price paid for wheat delivered to local elevators by farmers and the price paid for wheat in commercial hubs like Minneapolis—increased from \$1.49 per bushel in 2012 to \$2.59 per bushel in 2014.

North Dakota grain shipments have

historically traveled under rail rates determined by the system of public common carriage tariffs. These take-it-or-leave-it rail rates are available to any shipper on a first come, first served basis. Railroads must pro-

vide a 20-day notice before they can adjust these rates, which are subject to cost-based regulatory oversight. These rates do not include a guaranteed delivery time. The researchers note they are “poorly suited to allocating resources to customers with varying delivery priorities.” For each increase of

prices change slowly? Some railroads used “railcar auctions,” in which a successful bid guarantees that a railcar will be delivered for loading during a specified time window. Shippers pay the common

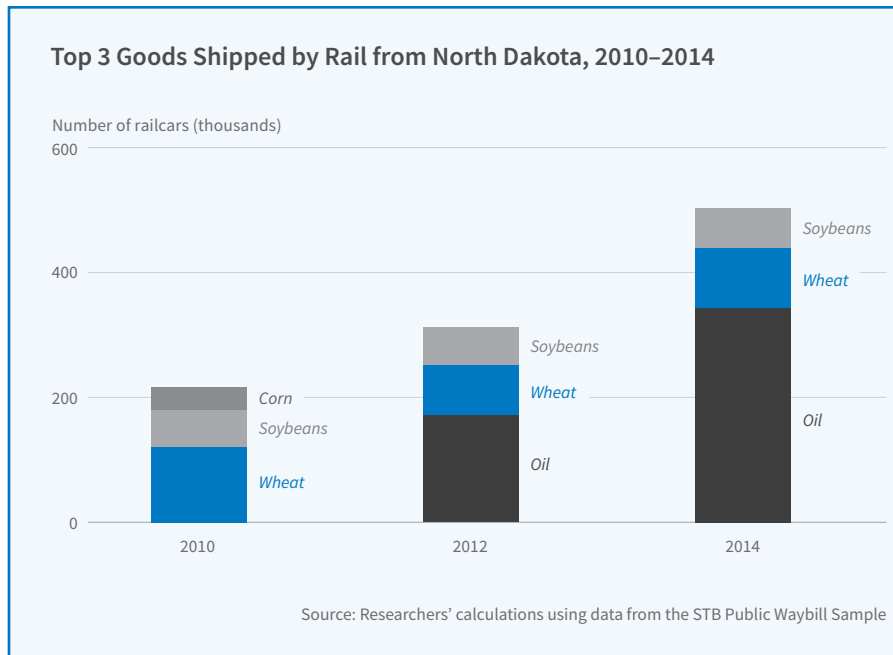
prices change slowly? Some railroads used “railcar auctions,” in which a successful bid guarantees that a railcar will be delivered for loading during a specified time window. Shippers pay the common

carriage tariffs plus a premium for delivery priority. As oil shipments increased, so did 2013–14 railcar auction prices for the railroads serving North Dakota. Their increase was highly correlated with the changes in the wheat spread, rising to “levels that could account for the entire increase in spread during the period,” the researchers found.

After controlling for diesel prices, the weather, total freight demand, and the size of the harvest, the researchers conclude that “railcar auctions were used as a mechanism to allocate scarce capacity to the customers with the highest willingness to pay for it.” Some of those customers—the ones who outbid competing grain shippers—were “flour millers in Minneapolis [who] were prepared to

pay a premium to avoid supply disruptions.” Congestion created by oil shipments traveling on the tracks traditionally used for wheat thus appears to have raised grain transportation costs which were in turn largely absorbed by grain purchasers.

—Linda Gorman



10,000 oil carloads per month, regulated rail rates for wheat shipments rose by \$0.06 to \$0.11 per bushel, a small fraction of the total \$0.35 to \$0.49 increase in spread associated with similar carload increases.

How do markets allocate suddenly scarce transportation when regulated

Working Longer Can Sharply Raise Retirement Income

Working a little longer, and postponing the start of Social Security benefits, can raise annual retirement income by as much as a modestly higher saving rate over several decades of work. That's the conclusion of a new study which finds that working three to six months longer boosts retirement income by as much as increasing retirement contributions by one percentage point over 30 years of employment. The finding applies to single adults and the primary earner of married couples, and across a broad range of earnings levels.

Older workers who are 10 years away from retirement and who decide to work one month longer at the end of their careers can get the same increase in retirement income as they can by adding one percentage point to their retirement saving rate over 10 years.

The findings are of special relevance to older workers, because the benefits of traditional retirement strategies — putting away more income toward savings or switching to a low-cost portfolio — diminish with age. By contrast, working longer and delaying the claiming of Social Security benefits are powerful ways for older workers to boost retirement income.

"The results are unequivocal," write Gila Bronshtein, Jason Scott, John B. Shoven, and Sita N. Slavov, authors of *The Power of Working Longer* (NBER Working Paper No. 24226). "Primary earners of ages 62 to 69 can substantially increase their retirement standard of living by working lon-

ger. The longer work can be sustained, the higher the retirement standard of living."

There are several reasons working longer has such a positive effect on retirement

the annuity will be cheaper. The researchers assume that at retirement a worker buys an inflation-indexed joint survivor life annuity, in part because it harmonizes the benefits of

A 66-year-old worker who works one year longer and claims Social Security one year later sees a 7.75 percent rise in his inflation-adjusted retirement income, 83 percent of which comes from the rise in Social Security benefits.

income. First, additional months or years of work allow workers to contribute more to their retirement accounts. Second, delaying withdrawals from those accounts allows more time for them to grow. Third, waiting longer before buying an annuity means

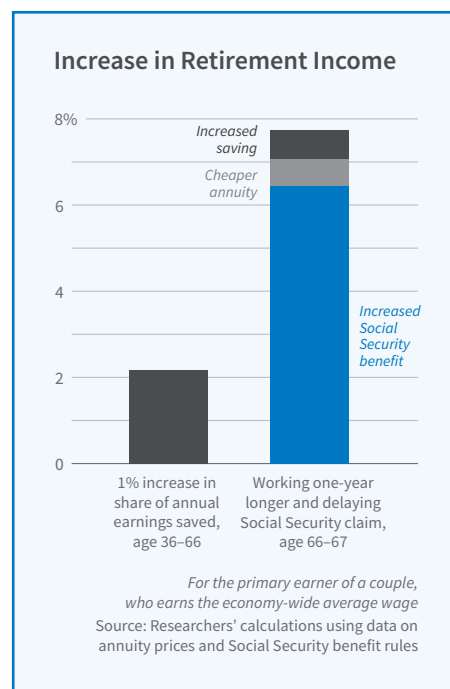
private savings and Social Security benefits.

The largest factor, however, is the fourth one: the increase in Social Security benefits from claiming later. For example, if an average 66-year-old works one year longer, and claims Social Security one year later, that person sees a 7.75 percent rise in retirement income, the researchers calculate. Some 83 percent of the gain comes from the rise in Social Security benefits. The federal program offers a higher benefit to a given individual if that person claims benefits at age 67 rather than at age 66.

This Social Security effect is highly progressive. The lower one's income, the larger the gain in Social Security benefits from additional earnings. Thus, a lower wage worker needs to work only 2.1 months longer to equal the benefit of 30 years of saving an extra percentage point of income, while a higher wage earner has to work 4.4 months longer to get the same benefit.

The researchers observe that for a 62-year-old "working eight additional years will increase retirement income by at least 40 percent and above 100 percent for some individuals."

—Laurent Belsie



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