Have central bankers lost their power?

What researchers are learning about the limits of monetary policy

Plus:

The hidden data of earnings calls

New thinking about start-up survival rates

‘Sell!’ ‘Buy!’ Markets hate complex headlines
“No one except a small minority really believes that it is possible or desirable for the federal government to balance its budget each and every year.”
DECODING THE LANGUAGE OF POLICY MAKERS AND BUSINESS LEADERS

In ancient Rome, the future was divined by examining sheep entrails. In the 1990s, it was deduced by looking at the size of Alan Greenspan’s briefcase.

According to “briefcase theory,” if Federal Reserve Chairman Greenspan walked into a meeting of the Federal Open Market Committee with a full briefcase, it was perceived to be a sign that he was carrying documents to argue in favor of changing interest rates. Conversely if he arrived with a light briefcase, investors could stand down. “In desperate attempts to predict what Fed policymakers are thinking, market watchers occasionally resort to rather odd measures,” mused William T. Gavin and Rachel J. Mandal in the July 2000 issue of the Regional Economist, published by the St. Louis Fed.

These days, obsessing over central bankers’ briefcases has been replaced by obsessing over their carefully worded statements. Are central bankers saying rates are going to be stable “for some time,” or “for an extended period”? This wording matters, and research suggests this forward guidance is an important policy tool, but one that could be used more effectively.

We cover such insights in our cover story (page 28), which surveys analyses of central-bank behavior over the past decade, marked by financial crisis, recession, and interest rates stuck at 0 percent. In that context, central bankers found themselves unable to kick-start growth in the usual way (by dropping rates). Instead, they relied heavily on forward guidance and asset purchases to guide investors. Did it work? Economists are still examining the data and debating the issue, learning along the way about the limits of central bankers’ power. But some argue that there’s useful information in what the Fed says.

Earnings calls
The ability to divine hidden meaning in words also applies in the private sector, even when it comes to what corporate executives say in the carefully scripted performances known as quarterly earnings calls (page 40). These exercises are meant to deliver information to investors, analysts, and journalists, but Chicago Booth’s Michael Minnis and others have been mining data in conference-call transcripts, finding concealed messages lurking in the language.

Investors should beware of euphemisms such as “headwinds,” for example, since research suggests they’re associated with lower future stock prices. Also be on the lookout for CEOs using just a few words per sentence, or mentioning anxiety words such as “worried” or “fearful.” Those are associated with lower cash flows and lower returns on assets.

During the question-and-answer portion of an earnings call, pay particularly close attention when an executive says “but.” Research finds that the information that follows has more influence on the market than what preceded it.

More than words
There’s more to what you say than just words, however. “There’s a lot that’s communicated not just by what we say, but by how we say it,” observes Chicago Booth’s Nicholas Epley, in a conversation with his Booth colleagues Ayelet Fishbach and Heather M. Caruso (page 94). In-person conversations contain informative paralinguistic cues such as intonation and variations in pace, much of which is stripped out in written conversations or transcripts. Granted, we convey their discussion in an edited, written transcript of The Big Question video series, so if you want to watch and hear this conversation, go to Review.ChicagoBooth.edu. And stick around to catch up on other episodes of The Big Question.

Even if your emails, tweets, and Facebook comments lack paralinguistic cues, we still love reading them. We welcome your comments, feedback, story ideas, kudos, and criticism.
Emir Kamenica, professor of economics, primarily works on information economics but has published on a variety of topics ranging from racial preferences in dating, to gender identity, to politicians’ pay. In this issue, we look at his research on how politicians’ seating arrangements affect their votes. Kamenica is an editor of the *Journal of Political Economy.* (Page 7)

Michael Minnis, associate professor of accounting, enjoys looking for data in unusual places. To understand how knowledge is dispersed throughout public companies, Minnis and his three coauthors combed through earnings-call transcripts to measure how much CEOs spoke in comparison to other members of their management teams. (Pages II, 40)
As Sears fails, who will buy its brands?
By Pradeep K. Chintagunta

When making a profit was immoral
By John Paul Rollert

How to split equity without drawing blood
By Mike Moyer

How Eugene F. Fama has left his mark on industrial organization
By Dennis W. Carlton

Economics and the human instinct for storytelling
By Robert Shiller

Surprising numbers behind start-up survival rates
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What target should the Fed be shooting at?
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Jane L. Risen, associate professor of behavioral science and William Ladany Faculty Scholar, is fascinated by people’s ability to hold beliefs they won’t explicitly endorse. “People are subjectively aware of being ‘of two minds,’ and that’s what I love,” she says. “People can recognize that they are being crazy and still have a hard time shaking a powerful intuition.” (Page 48)

Linda E. Ginzel, clinical professor of managerial psychology, specializes in negotiation skills, managerial psychology, and executive development. She has been voted one of the most impactful professors at Booth, and has received both the Faculty Excellence Award and the inaugural Global Hillel Einhorn Teaching Award. Ginzel is president of Kids In Danger, a nonprofit dedicated to improving children’s product safety. (Page 82)
WE WELCOME LETTERS

We welcome your comments. Send email to Review@ChicagoBooth.edu or send letters addressed to Chicago Booth Review at any of the following addresses:

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ALGORITHMS AND CORPORATE CONDUCT

In response to ‘Why we prefer human judgment to algorithms’ (Published online, March 2017, and on page 15 of this issue)

Had me at “human”—algorithms are amazing, but they’re created by people, and that must always count in the design of data.

—Bahiyyah Maroon

GOOD OR NOT, GREED IS SUBJECTIVE

In response to ‘The In-House Ethicist: Is greed good?’ (Published online, February 2017)

Greed can mean both ambition and dishonesty. We should be clear about what we are talking about. Modern capitalism is indeed driven by ambition, but not necessarily by dishonesty. Traditional societies in contrast may have abhorred ambition, but not necessarily dishonesty. Instead, honesty in traditional societies meant loyalty to friends, and possibly favoritism.

If anything, modern liberal capitalist societies protect contracts [and] respect merit and people’s rights more impersonally and impartially than anywhere else. But capitalism can turn crony if 1) public goods such as education and health [care] are treated like commodities and not rights, perpetuating inequality, and 2) courts, media, and governments are in the pockets of dominant businessmen, erecting anticompetitive barriers.

A strong cosmopolitan civic culture is the only protection to free and fair capitalist societies.

—Prateek Raj

WHAT IS INEQUALITY’S ROLE IN SLOW GROWTH?

In response to ‘How sales taxes could boost economic growth’ (Spring 2017)

In your article suggesting that sales taxes might provide economic stimulus, you point to sluggish global economic growth. Could disparity of income and lack of buying power by the less affluent be a key factor? In the United States in the decades following World War II, when the less affluent received a much higher share of GDP, the economy was more expansive.

—Milt Lauenstein

In response to ‘When shareholders aren’t watching, managers misbehave’ (Spring 2017)

Wages are stagnant because though shareholders and CEOs get richer, they don’t want to pay higher wages, and they don’t have to.

—Melvin Mabaquiao

In other news, water is wet.

—Barbara Byers
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Does where politicians sit affect how they vote?

Neighboring legislators are more likely to agree

When lawmakers ponder how to vote on a bill, there are any number of considerations they may have to juggle, including constituents, donors, special interests, party leadership, personal beliefs, and political expediency. But there may be another, subtler force at work: their physical position within the legislative chamber.

University of Copenhagen’s Nikolaj Harmon, Boston University’s Raymond Fisman, and Chicago Booth’s Emir Kamenica examined seating charts for the European Parliament to determine whether seating arrangements affect how members vote. They find that sitting adjacently makes it 13 percent less likely that two members of the same party will differ in their votes.

Members of the European Parliament (MEPs) belong to one of a handful of cross-national political parties, and when the parliament meets—usually in Strasbourg, France, but sometimes in Brussels—these groups sit together during voting (or “plenary”) sessions. Each member has an assigned seat within his or her party, usually based
“Peer effects could . . . be persistent if they operate through altering peers’ deeper allegiances or beliefs,” the researchers write.

on alphabetical name order. Harmon, Fisman, and Kamenica consulted official seating charts for plenary sessions between 2006 and 2010 and mapped those seating arrangements to the votes cast by every MEP.

They find that not only were neighboring legislators more likely to vote alike, those peer effects persisted when MEPs who sat next to each other in one location (Strasbourg or Brussels) were seated apart in the other.

“Peer effects could . . . be persistent if they operate through altering peers’ deeper allegiances or beliefs and thus influence future votes when the peers are no longer sitting next to one another,” the researchers write.

Because seating rows end in different places in Brussels and Strasbourg, some alphabetically adjacent party members sit next to each other in Brussels but not Strasbourg, and vice versa. For instance, Yannick Jadot, Eva Joly, and Ska Keller—all MEPs from the Greens-European Free Alliance Group—sat in consecutive seats during the September–October 2009 plenary sessions in Strasbourg, but in Brussels, Keller sat in a different row due to variation in where seating rows ended.

By exploiting such variation in peer exposure over time, the research suggests that MEPs who sat next to each other during a prior plenary session are 7 percent less likely to disagree in a current session, regardless of whether the two members are currently sitting together.

The implication, the researchers suggest, is that the peer effects created by sitting adjacently are not simply due to MEPs “parroting” each other. Rather, MEPs may be exerting lasting influence on their neighbors’ loyalties and beliefs.

—Alex Verkhivker

Pay per hour or a flat rate? Why managers may make the wrong choice

With both manufacturing and the service sector becoming more lean and automated, one might think that managers have become adept at structuring work and pay efficiently. Research suggests otherwise.

Many managers prefer to pay workers a flat rate for their labor, even when paying by the hour would be more profitable, according to University at Buffalo’s Indranil Goswami and Chicago Booth’s Oleg Urminsky.

The researchers conducted an experiment in which they paid people to put together a digital jigsaw puzzle, giving them either five or 15 minutes. Goswami and Urminsky wanted to measure workers’ productivity when they’re paid a flat fee or a time-based rate. Workers paid a flat fee took slightly less time to do the puzzle, yet earned more than those paid by the minute.

However, when the researchers had a different group of people act as “managers” and choose how they wanted to pay a worker to complete the puzzle, 71 percent of managers favored the flat-rate payment, which cost them profits.

Managers were poor at estimating how long the task would take their workers. This was particularly the case when workers were given more time to complete the task. Managers predicted that workers paid by the minute would take an average of four and a half minutes to complete the task with the five-minute deadline, while it actually took them just three minutes. But managers estimated it would take an average of 13 minutes to complete the puzzle with the 15-minute deadline, even though the workers completed it, on average, in only three and a half minutes.

This miscalculation took a toll on the managers’ profits, which were 25 percent less than they could have been in the shorter task, and 35 percent less than they could have been for the longer task.

The researchers saw similar patterns when they paid people to proofread, a task for which quality matters. Once again, managers favored flat-rate payments, even when paying for workers’ time would have produced more net earnings without compromising quality. People both with and without real-world managerial experience made the same mistake.

—Alice G. Walton

How pricing strategy can affect a company’s indebtedness

Highly indebted companies became a talking point in the 2007–10 financial crisis. How did so many companies—including corporate giants such as General Motors, which had an accounting leverage of more than 34 times and debt of more than $172 billion before its December 2008 bailout—take on so much risk?

One explanation could have to do with pricing. Companies that rarely change the price of their products or services are more likely to find themselves short of cash than those that are more flexible on pricing. Consequently, when credit is flowing freely, the former are more likely to borrow, according to research by University of Maryland’s Francesco D’Acunto, University of California at Berkeley’s Ryan Liu, University of British Columbia’s Carolin Pflueger, and Chicago Booth’s Michael Weber.

Most companies have prices that range from flexible to “sticky.” When prices are sticky, they don’t change, regardless of fluctuations in manufacturing costs or consumer demand. Flexible prices, by contrast, can be adjusted with market shortages or surpluses.

When credit is tight, companies with flexible prices have higher debt levels—but when more credit is available, companies with inflexible prices lever up. That’s because companies with the stickiest prices are the most financially constrained. So when offered credit, they take on more debt.

The researchers analyzed monthly prices from a subsample of S&P 500 companies from 1982 to 2014. They focused in particular on what happened after legislation, namely the federal Riegle-Neal Interstate Banking and Branching Efficiency Act, affected US companies’ access to credit.

When the IBBEA took effect in 1994, it removed many of the federal restrictions on interstate bank expansion and dramatically reshaped the banking landscape in affected states. Between then and June 1, 1997, all 50 states and the District of Columbia allowed out-of-state banks to operate in their jurisdictions. And as competition heated up, banks significantly increased the amount of credit they extended to customers.

The data suggest that companies’ pricing strategies had some bearing on their financial leverage. Before the IBBEA passed, companies with the most-rigid prices had long-term leverage ratios of roughly 10 percent, while companies with much more flexible prices had ratios of closer to 30 percent. But after the IBBEA passed, companies with rigid prices took on more bank debt, cutting in half the gap in leverage between flexible and sticky companies.

Price flexibility, the researchers note, is a persistent feature over time, so it might help explain historical patterns of leverage.—Alex Verkhivker

Do companies ‘mind the GAAP’ when they aren’t required to?

In the US economy, private companies are taking on a bigger role. The number of privately held companies rose by about 5 percent from 1997 to 2012, by one calculation. Meanwhile the number of publicly traded companies has fallen by half over that same time.

As this private portion of the economy grows, researchers would like to know more about it. For one thing, unlike public companies, private companies aren’t required to publicly disclose their financial results, have their financial statements audited, or even follow generally accepted accounting principles (GAAP). Audited GAAP financial statements facilitate capital allocation, helping companies divvy up their resources and invest wisely—or so decades of research suggest. But do private companies bother with audited GAAP statements when they’re not required to do so?

The short answer is: rarely. Research by University of Illinois’s Petro Lisowsky and Chicago Booth’s Michael Minnis demonstrates that almost two-thirds of medium-to-larger private companies choose not to produce audited GAAP statements. But the private companies that do adhere to GAAP do so for somewhat unexpected reasons, the research suggests.

Lisowsky and Minnis gathered data from 2008 to 2010 from the US federal income tax returns of 91,000 medium-sized and large nonfinancial companies. In total, the companies in the study controlled more than $10 trillion in capital, with the average having $70 million in revenue. Some 37 percent of large, private companies in the sample produced audited financial statements, using the same financial reporting standards as their publicly traded counterparts.

The researchers were surprised to see which companies chose to hire auditors to produce financial statements. For example, while prior research frequently focused on the debt-contracting benefits of financial reporting, Lisowsky and Minnis find that many companies with relatively high levels of debt—42 percent of companies with at least $20 million in revenue and $5 million in debt—didn’t produce audited statements, suggesting lenders relied on other things, such as prior relationships and collateral, to safeguard their loans. Meanwhile, many smaller, debt-free companies did produce audited statements.

Companies in the “information industry”—including media, technology, and other companies that produce, process, and disseminate information—were most likely to have audited financials (62 percent of them). High-growth, knowledge-based companies, which include pharmaceutical and other companies that invest in intellectual capital, were also likely to produce audited statements, while businesses with physical capital—more-tangible assets such as buildings and machinery—were less likely to.

Even though intangible assets are more difficult to observe and value, growth companies appeared to find audited GAAP statements useful, and the researchers surmise that the statements helped the companies raise outside equity capital. Thus the “stewardship” role of accounting appears to be prominent in private firms, helping equity investors monitor the performance of their investments.

When companies have more owners, there’s a higher likelihood of starting audited reporting. Also, “young firms adding owners are substantially more likely to begin an audit,” write Lisowsky and Minnis. “Young firms—which typically lack history, tangible assets, or management reputation—seem to use audited GAAP statements to credibly communicate with new equity owners, even when lacking a government mandate to do so.”

As an increasingly large share of the market comprises private companies, understanding why and how the companies report can help equity investors trying to value a company.

—Emily Lambert

Don’t blame robots for workers’ woes . . . blame corporate profits

It has become widely accepted that workers are losing out in the global labor force to robots that can perform the same tasks at a lower cost. Over the past three decades, economists have tracked a decline in the share of the economy going to labor—and have assumed a perfectly equal rise in the share going to buy and maintain technology, including robots doing people’s work.

But Chicago Booth PhD candidate Simcha Barkai calculates the total annual amount companies pay for all of their capital, such as buildings, equipment, robots, and software, and finds that when presented as a share of economic output, this capital share is also declining.

In which case, where is the money going? Barkai has a theory: more is going to corporate profits.

Economists typically think of the economy as a series of trade-offs between labor (workers) and capital (investments in corporate assets). If the amount of money going to labor is falling, they surmise, it must be because more money is going to capital—in the form of such investments as factories or software. Thomas Piketty of the Paris School of Economics has famously argued in his book *Capital in the Twenty-First Century* that falling labor shares and rising capital shares drive global inequality.

But most economists fail to calculate the amount going to capital, relying on the underlying assumption that it includes whatever isn’t going to labor. This assumption has roots in research from the 1980s and 1990s, notably a study by Boston College’s Susanto Basu and Federal Reserve Bank of San Francisco’s John G. Fernald, suggesting that a third category, corporate profits, was very small and could be ignored. But Barkai’s work suggests the situation has changed.

Between 1984 and 2014, the labor share fell 10 percent, and the capital share fell 30 percent, Barkai calculates. And he finds that in this time period, the share going to profits increased sixfold—profits in US nonfinancial companies reached $1.4 trillion, or $17,000 per employee.

Barkai says that industries with larger increases in concentration also have larger declines in their labor share, and he offers two possible explanations. First, incumbent companies in concentrated industries that are able to compete with one another may choose not to in order to keep prices high. Second, a company dominant in an industry may be capable of producing a good or service at a lower cost than any of its competitors.

Consider a hypothetical dry cleaner that will clean a shirt for $1.25. That price covers a number of costs including transportation, chemicals, and labor. “This entire process requires people, and a decent amount of equipment,” Barkai says. A decade ago, the cleaner may have spent 80 cents on labor and 40 cents on machines, pocketing the final 5 cents.

In the past decade, however, the dry cleaner’s costs have declined, and the cleaner now spends 70 cents on people and 30 cents on machines. But because no other cleaner has managed to similarly reduce costs, the dry cleaner continues to charge $1.25, keeping 25 cents in profit.

“You’d expect competition would encourage others to come in and reduce the price of laundering a shirt to $1.05,” says Barkai—but the cleaner faces no competitive pressure to reduce prices below $1.25.

While this is good for corporate profits, it’s less so for consumers and workers. Indeed, Barkai’s model suggests that in a more competitive environment, corporations would produce $750 billion to $1 trillion in additional goods and services, and wages would increase 20 to 25 percent.

—Chana R. Schoenberger

Go to Review.ChicagoBooth.edu to see citations for research in this article.

Corporate profits claim a growing share

Once considered a category that could be ignored, corporate profits have grown over the past 30 years at the expense of both labor and capital investments.
Short-term investors help inflate bubbles

When asset bubbles inflate, rising prices suck in a specific market participant: investors with short investment horizons. And once drawn into a market, these short-term investors “have the ability to destabilize financial markets,” write Northwestern University’s Anthony A. DeFusco and Charles G. Nathanson and Chicago Booth’s Eric Zwick.

Investors are more likely to use recent market performance to extrapolate what will happen in the short run than they are to extrapolate about the long run, research has established. But it’s less clear how specific time horizons affect this tendency.

To shed more light on this, the researchers developed a model that extrapolates expectations on the basis of investment horizons ranging from one year to five years to a permanent horizon.

The model demonstrates that investors with a horizon of only a few years expect greater gains than investors with a much longer expected holding time. This suggests that when prices are rising, the heightened expectations of short-term investors cause the investors to pile in—and that’s exactly what happened in the 2000-05 US housing boom. The price increase in metro areas rose along with the proportion of short-term investors to long-term investors.

As home prices doubled, the total number of homes sold that had been owned for less than three years nearly doubled, accounting for 42 percent of the change in sales volume, the researchers find. In 2005 alone, the number of homes flipped after one year was more than double the number of quick flips that had occurred in 2001. “Buyers looking to make a ‘quick buck’ are drawn to rising prices more than those buying for the long run,” the researchers write.

The relationship of price and volume works in reverse, as well. Once prices cooled, so too did home flipping. By 2007 and 2008, the number of sales made by people buying and selling a home within one year had sunk below levels seen during the 2001 recession.

The research also finds that during the frenzy, more than half of home flipping was generated by people who never lived in the homes they purchased. An annual survey revealed that people who invested in real estate owned homes for shorter periods than people who occupied homes they purchased.

And investors should closely watch which direction the total number of home sales is trending. In the housing boom, volume trends presaged price trends by 15 months, the researchers find. —Carla Fried


COMPANIES MAY USE CAMOUFLAGE TO DETER COMPETITORS

To ward off competition, a company may hide profits to make its business look less enticing. Chicago Booth’s Rimmy Tomy reached that conclusion by studying community banks, which can successfully discourage new entrants to a local market by increasing the funds they set aside for losses. Because loan-loss provisions are a signal of market credit quality, inflating these accruals can make a bank’s territory less attractive to potential rivals.

One unintended consequence of China’s stimulus program

When recession threatened to devastate even the richest economies in 2008, global leaders cheered China’s announcement of a bold and expensive stimulus plan as a stabilizing factor in a world of quickly declining fortunes. Global financial markets rose, and leaders at the World Bank and the International Monetary Fund praised the development.

Nearly a decade later, disappointment is setting in. Economic growth in China and worldwide remains sluggish, and a potential debt crisis in China threatens to thwart progress toward recovery.

One problem is that most of China’s stimulus money went to state-controlled companies that were less productive than privately owned businesses, according to research by Chicago Booth’s Lin William Cong and Jacopo Ponticelli. These more-productive companies had been chiefly responsible for fueling Chinese economic growth before the 2007–10 financial crisis—but were disproportionately allocated less bank credit during the stimulus program, say the researchers.

China’s stimulus package prominently featured a two-year fiscal program that involved spending about 4 trillion RMB—a figure that equated to almost 13 percent of China’s GDP at the time—on national infrastructure and social-welfare projects as a way of averting massive unemployment and economic depression.

Unlike stimulus programs in the United States and other Western countries, which were mostly funded through government debt, China funded the bulk of its program by introducing a set of bank-credit-expansion policies. The study brings attention to the unintended consequences in terms of allocation of new bank loans of this component of China’s stimulus that is often neglected by researchers and media. New bank lending jumped higher, and total credit in the economy grew by 30 percent in 2009 alone, according to the researchers.

China’s corporate-debt level was estimated at 170 percent of GDP last year. This has led to fears its banks could face massive loan defaults as corporations struggle to repay their debts in a weaker economic climate.

The study produces evidence to support these concerns. Using data from individual public and private companies, the researchers find that during the two years of the stimulus plan (2009 and 2010), a smaller percentage of loan money for building businesses went to skilled entrepreneurs than in the past. Rather, the majority of business lending shifted to firms with lower productivity but closer connections to government.

The less-efficient companies that now hold most of the stimulus debt may not be capable of generating stronger economic growth for the country. Without a better economic climate, such companies could find it difficult to service their loans. —Dee Gill


Antitrust regulators need a deft touch with tech

“The thought of the government getting involved and telling tech companies ‘Here’s how you need to innovate’ seems crazy. But I think it also seems crazy, in an environment where we’ve had a big rise of [issues] with network externalities, to say, ‘Hey you know what? Let’s leave it all alone and I’m sure it will work out.’ I think both of those are not very tenable.”

—Chicago Booth’s Austan D. Goosbee, speaking about regulation and competition in winner-take-all digital platforms, during a conference on commercial concentration hosted by the Stigler Center for the Study of the Economy and the State in March.
Why we prefer human judgment to algorithms

Automated systems can help us decide what products to purchase, which mates are most suitable, and what the fastest route is from A to B. The algorithms behind these systems outperform human judgment in most forecasting domains—but people aren’t always willing to use them, and Chicago Booth’s Berkeley J. Dietvorst suggests a reason for this. His research finds that people essentially hold algorithms to a higher standard than they do humans, expecting algorithms to meet performance goals that humans themselves may not reach.

In a series of studies, Dietvorst had people complete a forecasting task with a monetary reward at stake. In one study, he had people predict how well high-school students would do on a math test. Participants had the option of relying on their own estimates or using those produced by a statistical model built using data from thousands of high-school seniors. Dietvorst told participants that the model, in general, produced an estimate that was off by an average of 17.5 percentage points.

Dietvorst also manipulated participants’ performance goals by changing how much money they could earn for their predictions—the amounts ranged from 40 cents for estimates that were only 5 percentage points off to 10 cents for estimates that were 35 points off. Participants given more incentive to make better estimates were more likely to rely on their own judgment rather than on the algorithm.

In another study, participants stuck with human forecasting, even when they believed that the algorithm would outperform their own forecasts—but also when told that the algorithm didn’t usually perform well enough to achieve their performance goal.

Our tendency is to use human judgment as our default forecasting method, Dietvorst says. And when considering using an algorithm instead, we ask ourselves whether the algorithm will meet a specific performance target—when we should more reasonably ask whether it would produce better results than human judgment. “This leads people to use human judgment instead of algorithms, which usually outperform human judgment but often fail to meet our lofty performance goals,” says Dietvorst. And we’re missing out by not using algorithms, the findings suggest. Consider self-driving cars, for example. “People may be hesitant to adopt self-driving cars that outperform human drivers but fail to meet their lofty goals for driving performance (i.e., perfection),” writes Dietvorst. —Alex Verkhivker


They’ll take their chances

Participants in a forecasting study chose to use their own judgment instead of an algorithm when they faced harder performance goals.

Study participants decided whether their score on a forecasting test would be determined by their own guesswork or that of an algorithm

<table>
<thead>
<tr>
<th>Score required to earn incentive</th>
<th>Participants were split into five groups and offered an incentive for certain levels of performance</th>
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<td>Higher</td>
<td>Those who believed the algorithm would perform better</td>
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<tr>
<td>Lower</td>
<td>Those who chose to let the algorithm do the forecasting</td>
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Dietvorst, 2016
What has happened over the past 40 years in the United States, particularly in cities? It is well known that the US has experienced a large increase in income inequality, which, in my view, is one of the biggest problems of the US economy. At the same time, there has been an increase in neighborhood segregation, especially in larger cities: the rich are more and more concentrated in rich neighborhoods and the poor in poor neighborhoods. Alessandra Fogli of the Federal Reserve Bank of Minneapolis and I document a strong correlation between inequality and residential segregation.

The data show that cities with more segregation have a bigger education gap between the children of rich and poor families—and have less intergenerational mobility, which measures how hard it is to become rich if your parents are poor. In rich neighborhoods, it’s easier for kids to get a good education, and the return on education is higher. There are better schools, parents invest more in after-school activities, and there are stronger peers. This means that segregation amplifies inequality. At the same time, inequality increases segregation because richer people are happy to pay more to live in better neighborhoods.

Is the American dream dead? It is definitely hurting. To keep it alive, policy makers need to give poor kids the opportunity to get a good education. The American dream provides a powerful motivation for people to invest in education, which is the best strategy to reduce inequality.
Which variables do investors watch most?

Investors are inundated with news about business, politics, and the global economy—and use it to assess the health of the economy, set prices, and forecast returns. But in this flood of information, what in particular are investors paying attention to?

Carnegie Mellon’s Anisha Ghosh and Chicago Booth’s George M. Constantinides find empirical evidence that regardless of what information investors are considering, their focus manifests itself in price-level and labor-market variables.

The researchers start with the market price–dividend ratio, which is an important indicator of investors’ expectations about future dividend growth and discount rates. Many economists believe that the market price–dividend ratio is highly correlated with aggregate consumption growth, but Ghosh and Constantinides find otherwise—they see it as highly correlated with changes in price-level and labor-market variables.

Ghosh and Constantinides incorporate this observation in a model in which investors learn whether the economy is in recession, recovery, or expansion from changes in two prominent price-level and labor-market variables: the Consumer Price Index and average hourly earnings of production.

The empirical results highlight how much information these macroeconomic variables provide investors. Their model explains the level and volatility of consumption and dividend growth, stock market returns, the price-dividend ratio, and the risk-free rate—and it performs well in predicting future returns, while a model with learning from consumption history does not. The findings suggest that changes in the variables the researchers identify have long-term economic implications.

—Michael Maiello

Why charities should speak differently to rich and poor

What moves people to donate depends on their income, research suggests. Wealthier and less-wealthy people respond differently to appeals.

To study this effect, University of British Columbia’s Elizabeth W. Dunn and PhD candidate Ashley V. Whillans and Chicago Booth’s Eugene M. Caruso collaborated with The Life You Can Save, an organization that raises money for charities that fight extreme poverty. They asked visitors to the organization’s website to fill out a survey in exchange for a free book.

Then they presented one of two ads. One spoke to a person’s sense of agency (or autonomy): “The Life You Can Save spreads knowledge of what each person can do individually to reduce poverty,” it read. The other inspired a sense of community: “The Life You Can Save spreads knowledge of what all of us can do together to reduce poverty.”

Finally, the researchers gave participants the option of clicking, or skipping, a link to donate to the charity.

People with higher incomes clicked the Donate button more often if they’d been presented with the agency-focused ad, whereas people with lower incomes responded more to the community-based message.

The researchers observe the same pattern in people gathered from public locations and paid $10 to participate in the study. These participants viewed the two versions of the ads and were asked if they’d like to donate any of the money they’d been paid. Again, those with higher incomes were more likely to respond with a donation and tended to give more generously after seeing a message that stressed the importance of agency, while those with lower incomes tended to donate, and with greater generosity, to the ad that focused on community.

The results help explain others’ conflicting earlier findings on philanthropic behavior. A 2015 study suggests that the more money people make, the more they give away, while a 2010 study finds the opposite. The latest findings suggest that how much a person gives away may have less to do with any intrinsic effect of wealth than with their motivation, and how you tap into it. “Rather than reflecting an inherent failure of wealthier people to exhibit compassion toward other people,” the researchers write, “this pattern may reflect a motivational conflict that can be readily overcome by altering the typical nature of charitable giving.”

It may have to do with self-concept, the researchers suggest: wealthier people tend to develop a sense of self that’s strongly related to autonomy, whereas people with lower incomes tend to have a more community-based sense of self. Moving up the income ladder fosters one’s feelings of self-reliance, and weakens feelings of community reliance. “As such, the motivation to achieve personal success is often in conflict with the motivation to value one’s community and to help other people,” write Whillans, Caruso, and Dunn.

Charitable organizations may want to make use of the phenomenon. For wealthier patrons, charities might stress how much an individual can make a difference in other people’s lives—and stress the communal element for others.—Alice G. Walton

Go to Review.ChicagoBooth.edu to see citations for research in this article.
There’s more evidence that uncertainty fears may be overstated

Uncertainty is a hot topic in economic circles, with some economists saying that policy makers should take steps to reduce uncertainty that could affect businesses, thus becoming a drag on economic activity and even causing a recession.

But some research has questioned this point. (See “Why markets need not fear uncertainty,” August 2016.) And evidence based on import-price-data research, from Northwestern University’s David Berger and Chicago Booth’s Joseph S. Vavra, supports the argument that fears about uncertainty may be overstated.

In recessions, economic outcomes that companies can control, such as their employment levels and the prices they charge for goods and services, become more volatile. This reflects increasing uncertainty about what the outcomes will be in coming days or weeks. (To economists, volatility and uncertainty are the same.)

About this much, economists agree. The open question is what drives this increase in volatility. By one view, the increased uncertainty comes from a rise in the size of economic “shocks” that are outside of the company’s control. Such shocks could include an uptick in the volatility of energy prices, or increasingly uncertain government policy. Under an alternate view, the size of these external shocks actually doesn’t vary much over time, so any change in the volatility of economic outcomes is instead due to companies responding more strongly to shocks during recessions. For example, a company’s wholesale costs may be no more volatile during recessions, but that company might adjust its prices more aggressively anyway, in response to whatever change in costs it does observe.

It’s difficult to measure economic shocks, making it hard to know whether more uncertainty in recessions reflects larger shocks, or simply larger responses to shocks that are essentially unchanged in size. However, Berger and Vavra took a deep dive into US import-price data, looking at how much importers charged for more than 10,000 items from 1993 to 2015. To importers, exchange-rate changes represent economic shocks that can be measured. And because importers’ responses to shocks are represented in the prices charged, the researchers used these data to track how businesses respond to shocks.

Berger and Vavra analyzed the relationship between monthly exchange-rate changes and price changes. As expected, they see that during recessions, there was more volatility in the prices importers charged customers. But the researchers also see that during those times, the pass-through rate of exchange rates into prices was higher than normal, showing that importers were responding more than they usually do to economic shocks.

In months when price variability was highest, the researchers find that a 10 percent change in exchange rates led import prices to rise by an average of 3 percent, while in months with the lowest price variability, the same 10 percent change in exchange rates caused essentially no change in import prices. The relationship between price variability and pass-through holds up across a variety of sectors and products. The research suggests that rather than responding to increased uncertainty, importers are responding more to essentially the same amount of uncertainty.

Berger and Vavra note that their work adds to a growing body of research that uses both external shock variables and responsiveness variables to arrive at a similar data-driven conclusion: external shocks do not by themselves drive volatility. Berger and Vavra’s research casts more doubt on the suggestion that policy makers should take steps to address uncertainty. —Carla Fried

HOW BANK REGULATORS SHOULD SET CAPITAL REQUIREMENTS

Central bankers, regulators, and market participants have spent several years hammering out banking requirements meant to prevent another financial crisis. A central component of the rules overhaul: higher capital requirements. The idea is that if banks hold more capital relative to risky assets such as loans, they should be better able to withstand economic downturns and even bank runs.

But US President Donald Trump has expressed concern that new capital rules could present obstacles to lending. And some research suggests stricter capital requirements should be implemented with caution. They could prompt banks to inefficiently underinvest in loans to corporate and other clients, according to the University of Houston’s Tong Lu, Chicago Booth’s Haresh Sapra, and Georgia State University’s Ajay Subramanian.

The researchers seek to model a regulatory policy that balances the risks of setting capital requirements too high against the consequences of setting them too low, and to assess the important role accounting standards play in the implementation of such capital requirements.

The two most widely used accounting measures are fair-value accounting, which values securities at their current market prices, and historical-cost accounting, which values them at their origination values. To analyze how regulation affects banks’ decisions to alter their loan portfolios, the researchers first examine a benchmark environment for an unregulated bank. They then model the decisions of a regulated bank to originate loans and to subsequently alter the riskiness of the loan portfolio, and determine how a bank regulator ultimately derives the level at which to set the capital-liquidity ratio.

The model reveals that a bank regulator optimally imposes capital requirements that value banks’ balance sheets at current market prices, necessitating the use of fair-value accounting standards. “The interaction between the use of fair-value accounting and regulatory intervention is more subtle,” write Lu, Sapra, and Subramanian. “Although the regulator does indeed rely on fair-value accounting to impose an interim capital requirement when agency conflicts are severe, it could be suboptimal for the regulator to impose a very strict interim capital requirement that shuts down asset substitution.”

This suboptimality arises because the decision to originate loans and the decision to subsequently increase a loan portfolio’s riskiness, by substituting low-risk loans for high-risk ones, are inherently linked. Therefore, overly strict capital requirements, meant to alleviate the distortions that arise from banks making risky loans, could heighten inefficiencies by making banks reluctant to write loans. Proposals for very stringent capital requirements based on fair-value accounting that entirely prevent asset substitution should be implemented with caution, the researchers write.

To balance the trade-off between asset substitution and underinvestment, the model reveals, an optimal regulatory policy should feature some degree of forbearance by the regulator. The banking regulator can judiciously allow banks to engage in asset substitution that, in turn, induces banks to invest in higher-quality loans. By taking into account the tension between asset substitution and underinvestment, bank regulators will ensure that capital requirements are efficiently set.—Alex Verkhivker

Why stock returns under Trump might disappoint investors

The stock market climbed after the US presidential election, and the big market indices set successive new highs. Trump’s Treasury Secretary Steven Mnuchin proclaimed that the index gains represented the markets giving the new administration’s proposals positive marks on its economic “report card.”

But research by Chicago Booth’s Lubos Pastor and Pietro Veronesi suggests that betting on Trump for healthy stock market returns over the full course of the presidency is misguided.

The reason has to do with what finance researchers have termed the Presidential Puzzle. From 1927 to 2015, stock market returns under Republican presidents were on average 11 percent per year lower than under Democratic presidents. In fact, the returns were better on Treasury bills. Why would the market perform poorly under Republican administrations? No one knows, hence the puzzle moniker.

But Pastor and Veronesi propose an explanation. They argue that Democrats tend to take power during financial crises, while Republicans take over during periods of prosperity.

During market crises, voters tend to kick out Republicans and elect Democrats, perhaps wanting a stronger social safety net. For example, voters left behind the George W. Bush years and elected Barack Obama during the 2007-10 financial crisis, and Franklin D. Roosevelt took power from Herbert Hoover after the onset of the Great Depression.

Thus Democratic presidents tend to take power when stock valuations are low and risk aversion is high, and they benefit from the postcrisis stock market rebound. In Obama’s case, his 2009 swearing-in came a month and a half before the stock market...
recorded its financial-crisis low, so a rebound to even precrisis levels made returns under the Obama administration appear very strong.

On the flip side, once the economy recovers, stock valuations increase and risk aversion falls. In this environment, expected returns on the market are lower—but people are feeling bolder, so they vote low-tax Republican candidates into the White House. George W. Bush was sworn in after the 1990s internet boom, when stock valuations were high—and just a month and a half before the economy went into recession.

Looked at in light of Pastor and Veronesi’s research, the Presidential Puzzle has more to do with the overall risk aversion of voters and simple timing.

This framework is based on insights from the economic model the researchers built, which represents a stylized world in which workers in a society are either entrepreneurs or civil servants, and can choose to be one or the other during different presidential administrations. The model assumes that Democratic administrations are characterized by higher taxes and Republican ones by lower ones—a premise for which there’s ample empirical evidence, the researchers say.

The model predicts that during crises, entrepreneurs and civil servants alike are more averse to risk taking and believe they’ll gain more from government wealth distribution. Therefore they’ll be relatively more likely to vote Democratic. In line with this logic, others have looked across developed countries and found that transitions to high-tax, left-leaning parties tend to occur during times of economic crisis.

Using additional assumptions, Pastor and Veronesi’s model also predicts faster economic growth under Democratic presidents. That prediction is also supported in the data. From 1930 to 2015, US real GDP growth under Democratic presidents averaged 5 percent a year, whereas under Republican presidents that was closer to 2 percent. Political cycles thus arise naturally: when growth is low, voters’ risk aversion rises, leading to Democratic victory—after which growth rises, leading to Republican victory, and so on.

Can Pastor and Veronesi’s model explain the postelection run-up? According to the researchers, the market anticipated lower tax rates, which are positive for investors. But before you buy into the Trump rally, keep in mind that history has not been kind to stocks under Republican presidencies. —Erik Kobayashi-Solomon

Go to Review.ChicagoBooth.edu to see citations for research in this article.
Dividends are not free money (though lots of investors seem to think they are)

In a yield-starved economy, many stock investors look to cash dividends as a source of income. Yet retail and professional investors alike misunderstand the value and role of dividends, leading to suboptimal portfolios and market distortions, research suggests.

Investors should be indifferent to sources of return, after accounting for frictions such as taxes and trading costs. A $1 dividend from a share of stock should be no more meaningful than selling $1 worth of shares, as the share price on average drops by the amount of the dividend when it is paid. But Chicago Booth’s Samuel Hartzmark and University of Southern California’s David H. Solomon demonstrate that, in practice, many investors see a stock’s dividend as an income stream, separate from the price appreciation of the stock. The researchers call this the “free-dividends fallacy.”

Investors caught up in the free-dividends fallacy mistakenly view dividend-paying stocks as bond coupons that produce small, stable gains over time. When investors trade based on a stock’s performance, they focus on whether the stock has gained or lost money relative to the purchase price. Ignoring the impact of dividends, they focus on price changes, not total return. However, investors who want to receive a dividend stream need to hold on to the stock until it pays out its regular dividend, and Hartzmark and Solomon find that investors tend to hang on to dividend-paying stocks for longer periods of time, regardless of performance.

Because investors with this mind-set keep dividends in a separate “mental account,” they rarely reinvest dividends in the companies that paid them. Instead, investors, including large mutual funds and institutions, tend to use the payouts to purchase other stocks. The researchers document that market-wide dividend payments manifest themselves in the market by driving up the prices of nondividend-paying stocks; on average, on days with high dividend payments, the market has higher returns.

The problem with mentally separating dividends from price appreciation is that investors often choose stocks for their dividends, the researchers write. This is particularly the case when other sources of income such as interest-bearing accounts or bonds are paying low rates. Since investors flock to dividend stocks at the same time, prices rise and expected returns fall—and the free-dividends fallacy becomes a costly mistake. The researchers estimate that during times of high demand, dividend-stock returns are 2–4 percent less per year than could otherwise be expected.

The dividend disconnect applies not only to retail investors but also to a number of institutions and mutual funds, Hartzmark and Solomon find. They conclude that investors need a better understanding of the relationship between dividends and stock values. How best to teach them that, they write, “remains an open and interesting question.”—Michael Maiello


Eager to buy, reluctant to sell

When US interest rates are low, investors are more inclined to buy stocks announcing dividends, and they’re less likely to sell them as share prices swing up or down.

Investors’ likelihood of selling as prices changed 1991–96

Returns for stocks with recent dividend announcements Percentage in excess of expected return

Hartzmark and Solomon, 2016
An argument for less transparency in banking

Since the 2007-10 financial crisis, advocates of financial reform have often pushed transparency as a cure for the sector’s ills. But could greater transparency in fact force regulators to intervene unnecessarily in healthy banks?

One critical tool for bank regulators is the loan loss provision, a quarterly expense that shows how the prior 90 days affected banks’ estimates of future losses on loans. Along with the level of problem (in bank-speak, “nonperforming”) loans, loan loss provisions are closely monitored by bank regulators, institutional depositors, and other creditors to determine how sound institutions are. They help regulators think about when to intervene, and whether to declare a bank insolvent and close it.

In the financial crisis, banks that delayed recognizing expected loan losses were 10 percent less likely to have regulators intervene, according to Chicago Booth’s John Gallemore. That was particularly the case for important interventions, such as issuing severe enforcement actions or closing a bank.

Using a sample of more than 7,000 US commercial banks in existence during the crisis, Gallemore set out to see how banks’ decisions about recognizing future losses from their loan portfolios affected regulatory intervention.

Imagine two banks with loan portfolios identical in all respects. One bank decides to delay fully accounting for expected loan losses, so its provision is relatively small and its profits more robust. The other doesn’t delay and recognizes a larger provision, reducing profits. The first bank’s financial statement will be more opaque, and the second bank’s more transparent (and accurate).

Gallemore calculates an expectation metric for a bank’s future loan losses. He labels this variable “delayed expected loan loss recognition” and uses it to determine whether it drives regulators’ decisions.

It appears regulators wanted to refrain from interfering with riskier banks during the crisis, particularly when there were other weak banks in the state. When a troubled bank recognizes expected loan losses in a timely manner, everyone can see that it is troubled, and regulators may feel pressured to intervene.

But a more opaque bank that delays recognizing expected loan losses gives regulators the wiggle room to choose not to intervene, Gallemore says. Regulators thus avoid the cost of a liquidation or sale, and the potential public panic of bank closings.

And Gallemore suggests that if forbearance prevents the tide of bank runs on otherwise healthy institutions, some level of opacity may actually be desirable for the banking industry. —Alex Verkhivker

WHY THE US IS THE CENTER OF THE GLOBAL MONETARY SYSTEM

The US has for decades enjoyed its place at the center of the global monetary system. Since the Bretton Woods system of fixed rates collapsed in 1971, only large countries have floated their currencies, while most small ones stabilize their currencies relative to the US dollar.

Stabilizing relative to the dollar rather than the Swiss franc or the Danish crown may allow these countries to lower their interest rate and increase capital accumulation, research suggests. An economic model developed by Chicago Booth’s Tarek Alexander Hassan, Thomas Mertens of the Federal Reserve Bank of San Francisco, and Chicago Booth PhD candidate Tony Zhang explains the dollar’s dominance and other dynamics of the currency trade.

The researchers build on a host of work that suggests that differences in interest rates across countries are a function of differing levels of economic risk in each country—and they hypothesize that a country can use currency to manage this risk.

By stabilizing its currency to another, a country can effectively assume much of the risk profile of the target currency, according to the researchers. Doing this relative to the largest economy in the world, a country can lower its interest rate, raise capital efficiency, and create higher wages for domestic workers.

And as its currency moves with the US dollar, the country can step in when there’s high demand for goods and generate extra production capacity. In this role, it can generate extra profits that more than offset the costs of the manipulation.

This works for smaller economies, the research finds, but not for larger ones. For bigger economies, it becomes more difficult to stabilize a currency without selling large amounts of the target reserves, creating net outflows. The costs of stabilizing are lowest when the difference in size between the risky and the stable economies is largest.

Thus the model also predicts that, because the costs are higher for them, larger economies will either stabilize to a basket of currencies or allow the value of their own currency to float freely. Indeed, in reality, large economies either stabilize their currencies to established baskets (as Germany did before adopting the euro) or float their currencies.

One of the most provocative conclusions from the research is that a large economy that stabilizes its exchange rate relative to a still-larger economy diverts capital from the target country and boosts its own citizens’ wages while simultaneously lowering the wages of the workers in the target economy. As China’s renminbi has been mostly stabilized to the US dollar since 1994, the dynamic the researchers describe may partially explain the massive rush of foreign investment money into China and the brisk rise in salaries of Chinese workers.—Erik Kobayashi-Solomon

A title that was about a third longer received 12 percent fewer page views.

‘Sell!’ ‘Buy!’ Markets hate complex headlines

How the headline of a news or earnings report is worded affects who pays attention and how much attention they pay. Investors pay less attention to long and complex headlines, and that has an effect on markets, research suggests.

“Investors are significantly more attracted to short and simple titles,” writes Chicago Booth PhD candidate Tarik Umar. The effect is pronounced on slow news days, when the volatility index is low, and on afternoons and Fridays. “Cognitive effort affects market behavior, even for investors in a high-stakes setting with strong interests in stock specific news.”

Umar reveals these biases by studying investor responses to various titles given to stock reports published by Seeking Alpha. A crowdsourced-investment-research firm, Seeking Alpha has 4 million registered investors and 85 million page views a month. Nearly 80 percent of its audience is made up of retail, or nonprofessional, investors.

In January 2016, Seeking Alpha began allowing analysts to write two versions of the titles of their investment reports. An analyst’s editor could propose a third title. The three titles were tested by random assignment on investors who had signed up for Seeking Alpha’s real-time alerts about the company covered by the report. In the email alerts, investors received only the headline and a link to the full report. Seeking Alpha tracked how much attention investors gave to each version based on how many people clicked on the link to read more, and on how much they read.

Analyzing Seeking Alpha data, Umar noted the page views each title received and the number of investors who scrolled to the end of the report. He also used the comments that followed the stock report to measure variation in the sophistication of investors following the company—he assumes that commenters who also contributed their own reports to Seeking Alpha are more sophisticated than those who only read others’ submissions.
Investors, he finds, greatly prefer short, simple headlines. A title that was one standard deviation longer, about a third longer, received 12 percent fewer page views.

Seeking Alpha’s mainly retail-investor audience is less likely to have the time and resources to devote to learning about stocks like the pros. They are more likely to rely on heuristics: common shortcuts or mental models that guide human behavior. These models can be helpful, such as when emergency medics quickly diagnose life-threatening conditions from a handful of symptoms. But they can also be misleading, steering modern-day investors to devote undue attention to the negative slant of an investment report.

A longer title on a press release was correlated with less turnover, fewer trades, lower volatility, and temporarily lower returns.

However, even highly educated academics paid less attention to longer titles. Umar finds that on the Social Science Research Network database, papers with twice the title length received 11 percent fewer views, 13 percent fewer downloads, and 4 percent fewer citations. Umar also finds a preference for negative titles.

These variations in attention translate into market dynamics. In a separate analysis, Umar examined 305,000 earnings press releases issued from 1992 to 2015. He finds that a longer title on a press release was correlated with less turnover, fewer trades, lower volatility, and temporarily lower returns in the shares of the company announcing the news. The effect on returns completely reversed within a month. Recognizing these predictable biases gives investors one more way to outwit the herd.—Amy Merrick

What venture capitalists look for in start-ups

If you’re the next Uber or Facebook, you have a good chance of attracting high-dollar investors. But venture capitalists doling out millions to back big ideas may be less interested in the product than in the people developing the product, research suggests. Harvard’s Paul Gompers, University of British Columbia’s Will Gornall, Chicago Booth’s Steve Kaplan, and Stanford’s Ilya A. Streibulaev surveyed 885 institutional venture capitalists, posing dozens of questions. They find that big investors almost always cited a management team for their willingness to invest. Venture capitalists also said that deal selection was the most important factor in the effort to generate value.

Most important factor in VCs’ successful investments

Average internal rate of return demanded by VCs: 31%
Cash return on investment demanded by VCs: 5.5×

Cash returns on investment

How VCs analyze investments
Percentage of VCs who...

Use no financial metrics at all 9%
Quantitatively analyze past deals 11%
Use firms’ discounted present value 22%
Use internal rates of return 42%
Use cash returns on investment 63%

How VCs interact with their companies
Average percentage of the companies in VCs’ portfolios

Give strategic guidance 87%
Connect the companies with investors 72%
Connect the companies with customers 69%
Give operational guidance 65%
Hire board members 58%
Hire employees 46%

How often they interact

Every day 27%
Multiple times a week 33%
Once a week 26%
Two or three times a month 10%
Less than monthly 0%

No VCs said that their own contributions were the most important factor in successful investments.

For every deal closed over the past year, here is how many start-ups made it to each stage of the average VC’s process.

101 start-up investments were explored by the VC.
28 of those start-ups’ management teams met with the VC.
10 potential investments were shared with the VC’s partners.
4.8 potential deals were given due diligence.
1.7 start-ups received a term sheet.
1 deal was closed.

From being considered to receiving a check

27 start-ups received a term sheet.
4.8 potential deals were given due diligence.
10 start-ups’ management teams met with the VC.
101 start-up investments were explored by the VC.
1 deal was closed.

Have central bankers lost their power?

During and after the 2008 financial meltdown, central banks took unusual steps to stabilize their economies. Evidence is revealing the power, limits, and confounding effects of monetary policy.

BY DEE GILL  ILLUSTRATION BY HENRY JANSEN
The heads of the world’s biggest central banks hold a place today like few others in modern history. As stewards of their institutions over the past decade, they’ve overseen a gigantic experiment in monetary policy—turning to largely untested policies in the midst and wake of a financial crisis.

In a five-month period in 2008, several large US financial institutions failed, the mortgage-backed securities market seized up, and the Dow Jones Industrial Average recorded its biggest one-day point drop in history.

While the Dow’s 7 percent fall on September 29 was far less painful than Black Monday’s nearly 23 percent fall in 1987, the gradual slump that followed led to comparisons to the Great Depression and other difficult episodes in US financial history—and pain reverberated through international markets.

Central bankers’ reaction was conventional, at first. The US Federal Reserve cut its target federal funds rate, the rate at which big banks lend money to each other overnight. In normal times the Fed would do that to make it cheaper for companies and consumers to take out mortgages or lines of credit, which should in turn inspire businesses and consumers to borrow and spend.

But these were not typical times. Banks that had made risky loans faced liquidity crises, and banks became much more discriminating in offering credit. The most solid of consumers and businesses could still borrow, but companies with less than near-perfect credit found themselves fighting individual crises as the credit they needed to conduct ordinary daily operations dried up. The 2008 financial meltdown sent the fed funds rate to nearly zero, leaving the Fed unable to cut further.

So central bankers departed from their daily scripts and dove into crisis mode.

Absent big disruptions such as wars or rampant inflation, central banks in functional economies tend to focus on keeping unemployment low and prices stable. But central banks were created largely to halt banking runs and calm financial panics. To stabilize the financial system and economy this time, central bankers adopted two largely untested monetary policies: they bought up large quantities of bonds and other assets to prop up market prices, and they embraced “forward guidance,” the practice of issuing carefully worded announcements about potential interest-rate changes, meant to encourage companies and consumers to spend money—and boost the economy.

The bankers had little research to back up their actions. For example, Fed governors “knew they could stimulate the economy by manipulating consumers’ expectations, but it wasn’t clear how to do that,” says Alexander W. Richter of the Federal Reserve Bank of Dallas.

Since then, he and others have gathered data to assess central banks’ performance, and the research is beginning to coalesce. The findings are shaping lessons about how, if, and when such policies reinvigorated struggling economies.

Did asset purchases stave off disaster? Did forward guidance drive down long-term interest rates and inspire investment? Beyond that, did central bankers save the global economy? And now, a decade on, are central bankers still relevant? The answers to these questions are not exactly what some researchers expected—and indicate a shift in attitudes about central bankers and monetary policy.
The US fed funds rate got stuck at the rarely seen territory near 0 percent at the end of 2008, and that would persist through 2015. At this “zero lower bound,” standard economic models of monetary policy made strong, and as it turned out highly inaccurate, predictions about what would happen next. As a result, it became hard to know what effects, if any, policy actions would have.

Conventional wisdom holds that the Fed can influence interest rates, and by extension the greater economy, through the federal funds rate. Most economists think changes in the fed funds rate affect the real (after-inflation) rates that matter to people deciding whether to, say, take out a mortgage to buy a home. By this view, the federal funds rate influences the amount of credit banks offer to consumers and businesses—and decisions on how pricey to make credit also affect the amount people and companies decide to borrow. But with 0 percent interest rates, central bankers couldn’t use rate cuts to spark growth.

Some prominent economists suggest that central bankers’ power is overblown. Chicago Booth’s Eugene F. Fama finds that the Fed must follow the markets’ lead when setting its target. In his view, interest rates are governed above all by supply and demand, and they fall because more people want to save than borrow, not because the Fed pushed them down. There can be large spreads between the fed funds rate and market rates, as banks lend at rates other than what the Fed is encouraging, he points out.

Other economists remain more confident in the Fed’s ability to influence rates, but there was uncertainty and great controversy about how to calculate the effects of Fed actions at the zero lower bound. Traditional economic models forecast that with rates at zero, deflation would spin out of control. And the popular New Keynesian models, which central banks had been using to guide policy, spit out baffling predictions. The models implied that disasters are good for economic growth. They predicted that telling consumers that prices would rise in 100 years would get more people to shop tomorrow than promising the same price hike would happen next month.

According to these results, “everything you think you know about economics is wrong,” says Stanford’s John H. Cochrane, also a distinguished senior fellow at Chicago Booth and a prominent skeptic of the New Keynesian approach. “Promises farther into the future work better than promises closer to today. Deliberately breaking things is good for the economy. And as you make the underlying problems better—for example, if you make prices and wages less ‘sticky’—things get worse.” (For more from Cochrane, see “What target should the Fed be shooting at?” on page 85.)

Terrible events such as natural disasters are great for economic growth, according to the New Keynesian models. But data refute the irrational results: in 2014, University of California at San Diego’s Johannes Wieland used data from the disastrous 2011 earthquake in Japan as well as a series of oil-price spikes across time to demonstrate that many of the usual rules of economics hold even at the zero lower bound. Such disasters, he finds, are followed by lower output, not output booms. This and similar work was critical to central bankers, identifying and providing empirical evidence of instances where the New Keynesian and other models broke down.

Zero lower bound: A situation in which the interest rate controlled by a central bank hits zero. The central bank is unable to cut the short-term interest rate further.
The Fed loses influence as rates get longer term

The commercial paper rate stays fairly close to the fed funds target rate, indicating a measure of Fed control. But once rates extend to months, as they do with Treasury bills, or years, as with government bonds, the Fed’s target rate holds less sway.

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**One-month rate (Average spread: 0.03)**

**Six-month rate (Average: -0.21)**

**Three-month rate (Average: -0.32)**

**10-year rate (Average: 1.66)**

**Five-year rate (Average: 1.13)**

Fama, 2013; Federal Reserve Economic Database

New tools for unconventional times

To get around the problems encountered at the zero lower bound, many of the researchers studying this time period have produced economic models designed to correct the issues that create counterfactual results. One of the most popular solutions has come out of work by Chicago Booth’s Jing Cynthia Wu and the Bank for International Settlements’ Fan Dora Xia, who performed the research as a graduate student at the University of California at San Diego.

In 2014, Wu and Xia posted research suggesting that where some models typically use the fed funds rate, economists should instead plug in a shadow rate when the fed funds rate hits zero.

The research suggests that a shadow rate could provide information about the unconventional measures the Fed was taking, when the constant fed funds rate was not providing that information.

Wu and Xia used a shadow rate to help measure how macroeconomic quantities such as unemployment figures responded to unconventional policy tools, an insight that made their shadow rate particularly useful to, and used extensively by, the Fed and other central banks looking for ways to stimulate the economy. Now many economists use the Wu-Xia shadow rate in their macroeconomic models.

As a straightforward fix for any evaluations involving a low-interest-rate environment, the shadow rate will live long as a research tool, Wu predicts. “Fifteen years later, we’re still going to use the data at the zero lower bound,” she says. “For sure for the next 20 or 30 years.”

With help from the shadow rate, economists were able to assess central bank actions.

A shadow rate could provide information about the unconventional measures the Fed was taking.
Economists grade quantitative easing.

Central banks employed two unconventional policies, the first being quantitative easing. Seeing major financial institutions weakened and unemployment rising quickly, the US Federal Reserve spent trillions of newly created dollars (reserves) on bonds and other assets to prop up market prices. Its counterparts in the United Kingdom, Europe, and Japan went on comparable buying sprees. Asset-buying programs that few central bankers had ever experienced before 2008 became, during and after that year, the Fed’s weapons of choice, and a favored tool for keeping markets in order, depression at bay, and unemployment from soaring—or at least the central banks say so.

The ideas behind monetary manipulation, even unconventional manipulation, are elementary enough. Buying bonds may lower borrowing costs so that companies have capital for growth—and that growth turns into jobs for consumers, who in turn have money to spend. But for much of the past decade, no one was certain how quantitative easing would actually affect the economy. Research now suggests that easing had an effect, but also that the effect wore off. And quantitative easing may have exacerbated and prolonged deflation, rather than causing inflation as many economists had expected.

First time’s a charm

The University of Southampton’s Richard A. Werner first used the term quantitative easing in the early 1990s to describe a program in which a central bank buys unconventional assets, such as long-term bonds and commercial paper, in the open market. Japan, which fell into a deep economic downturn in 1991, first tried it in 2001 with a round of government-bond purchases. That buying didn’t come to much and failed to ignite economic growth.


In the US, the first round of easing, QE1, ended on March 31, 2010, but the economic situation still looked bleak. Banks were hoarding reserves instead of lending, complaining that businesses didn’t have enough customers and consumers didn’t have enough earnings or assets to qualify for loans. So the Fed launched QE2 in November 2010.

Seeing major financial institutions weakened and unemployment rising quickly, central banks in the US, United Kingdom, Europe, and Japan went on buying sprees.
With QE2 and then QE3, which began in September 2012, the Fed “simply bought long-term Treasuries whose prices were already higher than they’ve ever been in your or my lifetime,” says Cochrane. “They also bought mortgage-backed securities that were government backed, with interest rates lower than they’ve ever been.”

In 2011 and 2012, the Fed sold short-term Treasuries to take on even more long-term government bonds, in what became known as Operation Twist. QE3 involved more government long-bond and mortgage-backed securities purchases, and marked the final round of quantitative easing. That ran through October 2014. Quantitative-easing purchases swelled the Fed’s portfolio to some $4.5 trillion by the end of easing, compared to about $800 billion in 2007.

Experts deduced fairly quickly that QE1 accomplished its goal of reducing bond yields. But as job growth, wages, and consumption grew stagnant across the US, the question became: So what if yields were lower—were they creating additional business?

Booth’s Wu remembers attending conferences some years into the recession, when “QE was under way, but [Fed governors] had no idea of how much they should do or what the impact would be. They were making an educated guess,” says Wu. “They urged economic researchers to look at that issue quantitatively to give them more comfort.” It took time, but researchers obliged.

Some of the efforts worked

By 2012, many economists and quantitative studies declared QE1 had been an important factor in rescuing America’s crippled economy. In addition to academic and Fed studies, research out of the International Monetary Fund and the European Central Bank finds QE1 was highly effective in calming markets and lowering debt yields. Despite the findings in support of QE1, however, the US economy spent seven years after QE1 at or near recession, with nearly negative interest rates that typically indicate precarious job prospects and restricted wealth.

About QE2 and QE3, the research conclusions and opinions are less united. Research published by the San Francisco Fed finds that QE2 marginally bumped economic growth in 2010, adding 0.13 percentage points to real GDP growth. And Wu finds that by December 2013, quantitative easing had made the unemployment rate 1 percent lower than it would have been otherwise.

But other studies cast doubt. When the Fed launched QE1, it did so over many warnings about its potential to spark out-of-control inflation. A decade later, these worries may seem laughable, with savings accounts collecting minimal interest; but they remain real to many.

Cochrane argues that QE2 and QE3 had little effect on the economy, saying the research consensus seems to be...
that what effect QE2 and QE3 did have was indirect—when the Fed made big actions, this served as a signal that the Fed would keep interest rates low for a very long time. He disputes the idea that the “few tenths of a percentage point” change in the interest rate on government bonds that the Fed achieved from buying riskier securities could have had any lasting impact on the overall interest rates and thereby the economy.

Research from the Bank for International Settlements, an institution owned by the world’s central banks, backs that sentiment. The study finds that Fed bond purchases after the 2008 financial meltdown had “no statistically significant real impact” on economic activity, despite their effect on interest rates.

America’s relative success in escaping recession has caused some to look charitably on the Fed’s quantitative-easing program. The US economy today is better off than the economies of the European Union and other countries that practiced less-aggressive easing. But is that due to quantitative easing, or to something else? There’s waning faith that easing is responsible.

Research out of the International Monetary Fund and European Central Bank finds QE1 was highly effective in calming markets and lowering debt yields.
Forward guidance: Say what?

Forward guidance: When central banks make public statements about what they are likely to do with short-term interest rates.

The art of word craft has become an instrumental tool for promoting economic recovery. During the recession, all the big central banks started using forward guidance in ways meant to encourage spending by both consumers and corporations.

Some of the holiest words on Wall Street—especially when interest rates were trapped near zero—came in the form of almost meaningless phrases from the Federal Reserve. “For some time,” “for an extended period,” and other nebulous idioms peppered the Fed’s statements, which were intended to stimulate the US economy by indicating low interest rates would come in the future. No one knew how to translate these phrases into a date or even a season when interest rates would change, yet investors and corporations valiantly scrutinized the announcements for actionable messages. The wording at one point in 2011 of “at least through mid-2013” may have squelched more than one company’s round of layoffs, or prompted hiring offers.

Or it might not have, and this is the question economists are debating. Despite the sometimes extraordinary attention market participants paid to these Fed utterances, did forward guidance have a noticeable or lasting effect on the actual economy?

Some research suggests that forward guidance is a key stimulus tool, but to be used with care and caution.

A heyday for guidance

Long before 2008, in the high-interest-rate days of the 1980s, then Federal Reserve Chair Paul Volcker calmed fears by laying out steps the Fed would take to bring down inflation. But he didn’t give predictions or specific actions the Fed might take, and he even denied that the Fed tried to control interest rates.

So when some central banks began publishing their official, longer-term rate projections, it was controversial. The Reserve Bank of New Zealand began using forward guidance in 1997, Norway's Norges Bank started in 2005, and Sweden’s Riksbank started in 2007. The Federal Open Market Committee experimented with forward guidance between 2003 and 2006, and guidance was hailed in some economics circles as a move toward more transparency.

Ideally, when the Fed indicates or even promises low rates, businesses expand, hire, and fuel a healthy economy on the expectation of cheap credit. Loans remain cheap or get cheaper across the spectrum—for mortgages, lines of credit, car loans, and any other borrowing with an interest rate attached. Additional Fed communication, whether vague statements or more specific guidance that portends policy makers’ thinking about short-term interest rates, is meant to give investors confidence in central bankers and the economy.

But when the financial crisis hit, central bankers embraced communication as a stimulus tool. The Fed paired forward guidance in December 2008 with the first quantitative-easing program by cutting the already-low fed funds rate and promising to keep it near zero “for some time.” Bankers in Europe, the UK, and other developed economies adopted similar versions of forward guidance.

At the zero lower bound, bankers were in uncharted waters. The events were unprecedented, and therefore the Fed and other central banks had very little research to guide precise policies. New Keynesian economic models predicted that forward guidance would produce wildly positive results, particularly if the Fed promised

Reneging on a promise can kill any chance of forward guidance being effective in the future. Japan learned this the hard way, having changed its announced plans so often that it has lost credibility.
that rates would remain low decades into the future, as opposed to
staying low for just a year or even a few months. The results, although
difficult to prove bogus, were hard for economists to take seriously,
says Chicago Booth’s Joseph S. Vavra. The affront to common sense
left the Fed with little evidence to support its method of choosing
what messages it should broadcast to the public.

The more specific, the better?
“When you look at all the different language that they used—and
they used anything from the most vague statements that you can
have to statements that were quite precise—it’s clear that a lot of
this was sort of ‘seat of the pants,’” says Federal Reserve Bank of
Dallas’s Richter, who has made Fed communication a specialty.
He says that despite the lack of clear evidence, the Fed acted
thoughtfully and intentionally. That said, he finds several ways
the guidance could have been more effective.

To have an impact, an announcement needs to include news,
says Richter, not something markets already know. Central bankers
should also be careful of offsetting a confident message about
rate intentions with “commentary about how the economy isn’t
as good as we thought,” says Richter, who finds that the Fed may
have undercut its mission by routinely recapping the state of the
economy within the same meeting notes that served as forward-
guidance announcements.

It can be fine for the Fed to comment on the state of the
economy in some cases, but if the Fed is trying to guide investors
into expecting higher interest rates, saying the economy is weaker
than thought can dampen investors’ expectations. Since the
commentary on economic conditions was generally pessimistic,
Richter says, this overshadowed any reassuring message that the
Fed was trying to convey about holding down interest rates. “If
you devote one paragraph to forward guidance, but another to
commentary about how the economy isn’t as good as we thought,
we’re pessimistic about the future,” he says. “That’s going to offset
any gains that you potentially had” with forward guidance.

And he argues that the wording should include the specific timing
of interest-rate changes. The Fed, he says, stimulated the economy
whenever announcements were more specific. In December 2008,
the Fed promised “likely” low rates “for some time.” In August
2011 it began using date-based forward guidance, and the following
month the FOMC announcement promised exceptionally low interest
rates “at least through mid-2013.” According to Richter, this had
a significant effect in lowering current and future interest rates.

The least ambiguous time frames are probably the most
stimulative, says Richter. The Fed likely lost much of the potential
effect of forward guidance early on by keeping the timing of
interest-rate changes vague, he says: “When you look back,
knowing how bad the recession was, how long the economic
downturn lasted, I think it’s pretty clear that we should have used
stronger language and used it earlier.”

However, Columbia University’s Michael Woodford, a longtime
advocate for the use of forward guidance, argued that guidance
tied to economic outcomes would be superior to any based on
a specific but relatively faraway date. In discussions with and
presentations to Fed officials, he stressed the importance of

setting a target for a nominal variable such as GDP. And when the
FOMC met in December 2012, the Fed described its next interest-
rate movement as tied to unemployment and inflation targets—
although it tied forward guidance to the real unemployment rate, not
the nominal variables Woodford favored.

And a separate research group cautions that time-based
guidance—such as “We expect rates to remain low through mid-
2015”—could distract investors from more important data. A paper
presented at the US Monetary Policy Forum, run by Booth’s Initiative
on Global Markets, analyzes 20 years of Fed communications. It finds that in the post-financial crisis years, from 2011 to 2015, the Fed moved toward offering strong hints about the calendar timing of potential rate hikes. That has led investors to discount macroeconomic events, and their inattention to those ultimately undermines the Fed’s mission of optimal monetary policy, according to the researchers.

Time-based guidance tends to overshadow any data-based qualifications and the broader message, they argue. It can also lead to credibility issues if the data don’t pan out as expected and rate changes need to be delayed or sped up. Reneging on a promise can kill any chance of forward guidance being effective in the future. Japan learned this the hard way, having changed its announced plans so often that many market and economic experts no longer consider its guidance credible.

The researchers—Michael Feroli of J. P. Morgan Chase, David Greenlaw of Morgan Stanley, Peter Hooper of Deutsche Bank Securities, Frederic Mishkin of Columbia University, and Chicago Booth’s Amir Sufi—conclude that time-based guidance is appropriate when the Fed is out of options. But they argue that these conditions do not describe the current situation in the US, and that the Fed should drop time references and return to more-data-driven guidance. (For more, see “Note to Yellen: Knock off the time-based guidance,” Fall 2016.)

**Doubting the wordplay**

Despite Richter’s conclusions that forward guidance can be effective in certain circumstances, he and many other researchers are unconvinced that it had a major effect on the economy in the aftermath of the Great Recession. “I don’t have a sense that forward guidance is harmful, but I don’t think it has had huge positive effects either,” says Chicago Booth’s Vavra.

Cochrane is suspicious of the idea that the actual economy moves on the promises of any Fed chair to do things in the far future. “The idea that the average American reads [Fed Chair] Yellen’s promises about what she’s going to do five years from now and changes his or her behavior? That seems pretty far-fetched,” says Cochrane. As for the bond traders and corporate finance folks who plan their days around Yellen’s words, Cochrane contends that it’s not economically useful for the Fed to create volatility in markets.

Senior Fed Economist Taisuke Nakata explains some objections to forward guidance in *FEDS Notes*, a series of articles on the Federal Reserve Board’s website. If the Fed commits to keeping interest rates low for an extended period, as strong forward guidance requires, it may encourage enough economic activity to push inflation beyond the desired level. The researchers argue in favor of a modest and short-lived overshoot of the Fed’s target, concluding that this stands a better chance of creating sustained inflation at the desired level.

As an alternative, some experts back more of a mundane communications policy that simply reassures the public that the Fed will continue to follow its mandates: maximizing employment, stabilizing prices, and moderating long-term interest rates. Says Cochrane, “A much calmer, more rules-based monetary policy, and much less speechifying about what’s going to happen, would be more effective.”
A new view of central bankers

It’s been almost a decade since the financial system swooned and, by some accounts, unconventional monetary policy stepped in and prevented even greater calamity. University of Texas at Austin’s Saroj Bhattarai and St. Louis Fed’s Christopher Neely looked at the research on the effects of the Fed’s strategies since 2008 and find that quantitative easing and forward guidance had strong, intended effects on bond yields, exchange rates, and asset prices. Theoretically, these changes lead to sustained economic growth.

But even now, the US economy is still struggling to grow. Whatever is wrong with the economy today—and opinions vary widely—many economists agree that it’s not a problem monetary policy can fix.

One possible reason: Vavra finds that monetary-policy actions are less powerful during deep recessions than in healthier times. In practice, that means the Fed should lower its expectations about how much its actions can lead to higher employment or consumption. Vavra says that traditional modeling misses this important caveat because it tends to estimate the “average economy” over an era that typically includes big swings in economic health. But “we are not usually trying to stimulate the average economy,” he says. People care much more about policy effects during recessions. After all, booming economies don’t need much of a push from central bankers.

His research finds that stimulus actions by central banks are less effective during economic downturns than they are in boom times (when less needed), and he voices a common belief that the Fed’s efforts had diminishing returns.

Research studies on the era have reshaped opinions on unconventional monetary tools. Experience and data from the past eight years have helped build favor for a narrower role for monetary policy.

Central banks can help to avoid Great Depressions, but their power to boost growth may be muted when needed most.

“A lot of people thought [monetary policy] was a cure-all, and it isn’t,” says Chicago Booth’s Randall S. Kroszner, a Fed governor from 2006 to 2009. “It is one necessary piece to avoid a wrenching deflation. In and of itself, it is not sufficient to ensure economic growth.”

Arguments about the power of monetary policy and central banks go back centuries. That bad monetary policies can disrupt business is well established, but just how much and for how long can active monetary policies promote growth? The past decade is leading some to change their positions and the view they have of central-bank policies. There was a time when central bankers were rock stars—in some circles, former Fed Chairman Alan Greenspan received adulation comparable to that given Bruce Springsteen. Now many say that central bankers can address crises and painful but temporary business cycles, but not problems that last for nearly a decade. This view depicts central bankers whom some might consider humbler, perhaps with a diminished sense of influence, and who recognize the limits of their power. Central bankers might be able to spur “demand,” but they can’t improve “supply.”

There’s one way in which the Fed did save the US economy: it didn’t cause a second Great Depression. Many Americans lived through a painful recession in which they lost homes, jobs, and hope, but the situation wasn’t as dire as it had been 80 years earlier. In 2009 at the low point of the recent crisis, GDP registered 4 percent lower than at its 2007 peak. In the Great Depression, GDP fell precipitously for three years, ending in 1933 about 25 percent lower than in 1929.

Still, research finds there are limits to what central bankers can achieve. The Fed’s actions in late 2008 certainly kept the recession from becoming much worse, but the economy didn’t really revive. Growth has stalled around 2 percent. Central banks can help to avoid Great Depressions, but research indicates their power to boost growth may be muted when needed most.

Having spent the better part of a decade interpreting the effects of unconventional monetary policy, some economists have turned their attention to finding ways governments can encourage growth without relying on monetary policy at all. Stimulus talk now focuses more on structural changes to things such as tax policies and various regulations that encourage or discourage working, hiring, and investing. “We can fight the deflation, but you have to have structural reform policies to try to revive economic growth,” says Kroszner. Central bankers can do only so much.

Go to Review.ChicagoBooth.edu to see a complete list of research mentioned in this article.
How to listen for the hidden data in earnings calls

When executives, investors, and analysts meet over the phone for a quarterly earnings call, what gets said is important, but so is how it’s said. Research is uncovering the messages that managers may not be intending to send—and that investors should learn to listen for.

BY ALINA DIZIK  ILLUSTRATIONS BY MATT CHASE
Sometimes it’s easy on an earnings call to spot the metrics that portend good or bad things for a company. Revenues were unexpectedly high. Operating costs have doubled. But what does it mean when a CEO’s adverb density is low? Or if her words per sentence are high? What’s the significance of a CEO consistently referring questions to her team? Is heavy use of euphemisms a bad sign?

A growing body of academic research suggests that while talk may be cheap, language—in particular, the language used during earnings calls—can be quite valuable. Seemingly boring transcripts from what are often hour-long calls can include spontaneous word choices that offer insights on everything from executive character traits to the inner workings of a firm. Researchers are parsing the language from tens of thousands of earnings-call transcripts and cross-referencing these data with firm financials, biographical data about executives, linguistics research, and even the psychology of speech. When CEOs talk, researchers listen—and investors can profit from their findings.

Earnings calls are the periodic conference calls a company’s executives hold with investors and analysts to discuss financial results and answer questions. The calls give managers a chance to provide context, or even spin, for their financials, and they also help companies stay on the right side of transparency regulations. Remarks for the first half of a given call are likely to be well rehearsed, or even prerecorded. But dialogue during the second half of the call, the question-and-answer portion, tends to be more reflexive, despite days of preparation from the management team.

“There’s some degree of off-the-cuff exchange between market participants and executives—it provides a window into the firm,” says Chicago Booth’s Michael Minnis, who mined earnings-call transcripts with the University of Michigan’s Feng Li (now at the Shanghai Advanced Institute of Finance) and Venky Nagar, as well as incoming dean at Chicago Booth Madhav Rajan, to see what they suggested about the inner workings of the corresponding businesses.

In the study, the researchers used how much and how often the chief executive spoke in contrast to other firm employees as an indicator of how knowledge is dispersed throughout the firm. In analyzing 17,419 transcripts, Li, Minnis, Nagar, and Rajan could evaluate how knowledge was distributed among various executive teams and hypothesize how that distribution affected financials. Their research indicates that the chief executives who spoke more—presumably because they were more knowledgeable—also tended to earn more relative to the rest of the executive team. What’s more, firms that had mismatched compensation strategies (i.e., chief executives who talked more but got paid less) had lower firm value than those where talk time and compensation were aligned.

The researchers were also able to draw more-detailed observations about executives using the call transcripts. For example, CEOs without a Chartered Financial Analyst designation often deferred to the CFO, demonstrating a lack of comfort with financial topics. And as was the case with CEOs, CFOs who spoke more compared to their peers received higher compensation.

But reading between the lines of earnings calls doesn’t just mean adding up airtime. The language the management team uses can signal how it feels about its results—or how it expects the market to react to them.

For instance, when a chief executive tells analysts that “lumpiness,” “headwinds,” or a “wait-and-see” period is on the way, it may be time for an adjustment in your portfolio. Euphemisms such as these can obscure the details of bad news, and research suggests that greater use of them is associated with lower stock prices in the quarter ahead, even after taking into account the already disclosed financial results.

“The purpose of using euphemisms is to mislead,” says Kate Suslava, a Rutgers University PhD accounting candidate with a background in linguistics, who studied the link between euphemisms and stock performance by analyzing earnings-call transcripts. “They don’t want to scare off investors.”

And in fact, euphemisms are effective for precisely that purpose: Suslava finds that euphemistic earnings calls tend to significantly delay negative investor reaction.
On the flip side, analysts use euphemisms to soften their questions in the hope of getting those questions answered, she adds. Analysts “don’t want to ask tough questions directly, because it might cause an unpleasant reaction” from management.

Mining linguistics research for clues
As Suslava’s research demonstrates, the linguistic features of a call can provide valuable glimpses into a particular firm. But they can also shed light on its leaders. Harvard’s Ian D. Gow, Chicago Booth’s Steve Kaplan and Anastasia A. Zakolyukina, and David F. Larcker of Stanford used the language that appears in earnings-call transcripts to decipher the personality of chief executives, and then matched that to firm performance and investment and financing choices.

Prior research suggests that “personality traits are predictive of patterns of behavior,” says Zakolyukina, citing research from University of Illinois’s Brent W. Roberts. She explains that those traits can be difficult to measure in high-profile executives: “We suggest using earnings-call transcripts to estimate CEOs’ personality trait scores.”

The team categorized the personalities of 4,700 CEOs using the traits that make up the “Big Five,” a widely accepted framework for classifying personality characteristics: conscientiousness, extroversion, agreeableness, neuroticism, and openness to experience. To do so, they searched for 33 linguistic features that they associated with these various personality types. For example, CEOs who were agreeable tended to use adverbs, fewer
words per sentence, and vague quantifiers during the question-and-answer sessions. Extroverted CEOs, on the other hand, used fewer quantifiers, fewer words per sentence, and more so-called anxiety words, such as “worried” or “fearful.”

The researchers used their findings about executive personality traits to assess how those traits are associated with firm performance. Their findings suggest numerous connections between the characteristics of CEOs and the behaviors of the companies they lead. For example, the companies of CEOs who have extroverted personalities, as observed in the words used in the transcripts, were more likely to have lower cash flows and lower returns on assets. Top executives deemed to be more conscientious tended to run slower-growth companies, while those whose dominant personality trait was openness had companies with a greater focus on R&D.

In addition to providing insight into executives and firms, the language of conference calls can provide cues to help listeners pick up on important information. Research by Rutgers’s Dan Palmon and Rutgers PhD candidate Ke Xu, along with Bentley University’s Ari Yezegel, looked at disclosures before and after the word “but” during question-and-answer sessions, and their respective impact on stock prices. The study finds that what comes after “but”—the so-called contrastive word—has more influence on market reaction than what comes before.

The use of contrastive words is a way to provide unexpected bits of information during the latter portion of the call to address analyst concerns. Ultimately, the information is used in a

Companies with extroverted CEOs were more likely to have lower cash flows and lower returns on assets.
corrective manner to clarify unfavorable revelations, according to the findings. “The use of contrastive words can provide favorable counter expectation information to reverse investors’ perception of seemingly unfavorable financial performance,” the researchers write.

**Taking advantage of easy access**

Mining data from the transcripts of earnings calls wasn’t always so simple. Twenty years ago, transcripts weren’t as widely available as they are today. But in 2000, the US Securities and Exchange Commission established Reg FD, or Regulation Fair Disclosure, which forbids publicly traded companies from sharing “material nonpublic” information with analysts and investors without making it public at the same time. Best practices dictate that compliant firms make earnings calls available to the public via transcript or audio.

As a result, there has been a growing interest in these easily accessible quarterly disclosures—and not just from those who have equity in the companies being discussed. Research from Columbia University’s Anne Heinrichs, Harvard doctoral candidate Jihwon Park, and Harvard’s Eugene Soltes indicates that in addition to sell-side analysts and the companies’ current investors, institutional investors without any position in the firm are often listening—in fact, on average, half of buy-side consumers listening to or reading the transcript of an earnings call do not hold the firm’s securities at the time they’re doing so. “We find that much of institutional buy-side consumption [of earnings calls] actually arises from non-holders who may consider [making] an investment or who use the call to fulfill other informational needs,” Heinrichs, Park, and Soltes write.

There is also a broader interest in firm-initiated news, according to the researchers, who find that consultants, firm suppliers and partners, bankers, and media all take an interest in these calls. And that interest is durable: of the earnings-call audio or transcript requests that the researchers studied, 82,000—about 7 percent of the total—were for calls that were three years old or older. “Market participants not only value public firm disclosures for their timeliness,” the researchers write, “but also as historical record for understanding the firm.”

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**Where CEOs stand among other execs**

How much CEOs speak during earnings calls can reveal information about both their compensation and their level of knowledge.

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**Average share of compensation for companies’ top five executives**

- CEO: 39%
- The rest: 61%

**CEOs who do more of the talking during earnings calls . . .**

- +1.5
- +3
- +4.5
- +6

- ... get a bigger share of the pay earned by the top five

**CEOs do 46.8% of the talking on earnings calls, on average**

**CEOs’ background appears to play a role in how much they speak**

- Percentage points more/less than they would speak otherwise

**For every education level**

- Master’s, doctorate, etc.: +2.8

**If they have accounting certifications**

- +4.7

- -2.4

- In their first year as CEO

Li et al., 2014

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Li et al., 2014
earnings calls, and they can spend weeks getting ready for them—from rehearsing answers to strategizing about the order in which analysts are called upon for the question-and-answer portion. Others can be reluctant to set aside significant time to prepare for earnings calls, “and a few come into coaching sessions kicking and screaming,” says Jeff Leshay, a Chicago-based executive communications coach. Once they understand the value of prep work, however, “they learn to turn even the most challenging earnings-call questions into opportunities to build their brand.”

Leshay helps companies communicate using engaging anecdotes around the information disclosed during their earnings calls. He counsels clients on how to speak conversationally and with a genuine level of enthusiasm that helps the remarks feel unscripted—for instance, by speaking while standing and smiling, which can create an authoritative and enthusiastic tone that translates well over the phone. “They have to appeal to analysts on an emotional level,” he says, while also providing the data and details those analysts need to build their models.

Ultimately, investors and analysts are looking for access to company executives—opportunities to interact one-on-one, outside the context of an earnings call, in settings where remarks are likely to be unrehearsed.

Quantifying the economic cost of political uncertainty is difficult. There are few signs outsiders can use to understand what firms are thinking—and what they’ll do next—during times of perceived risk. But a group of researchers is turning to computational linguistics to crack the code.

The language of earnings calls can help diagnose economic outcomes associated with periods of uncertainty, according to research by Chicago Booth’s Tarek Alexander Hassan, Tilburg University’s Stephan Hollander and Laurence van Lent, and London Business School’s Ahmed Tahoun.

The researchers built a machine-learning algorithm that drew upon two-word combinations previously associated with political risk in outside texts, and then used that tool to examine 175,000 earnings-call transcripts. Their results helped them understand how much of the conversation between management and analysts centered on political risk during each conference call.

The findings suggest that when a company spends a greater portion of its call discussing political risk, it’s more likely to make certain financial decisions that might mitigate that risk. “Firms that perceive risks associated with a particular political topic hire less and have less investments,” Hassan says. “These same firms then donate more and lobby more on the topics that they find concerning.”

Analyzing conference calls may be a particularly useful approach to gauging the effects of uncertainty because risk is not always felt industry-wide, and because companies often act to mitigate the perceived risks of new policies well before those policies are in place.

This new use for the language of earnings calls comes at a relevant time. Because of political developments such as Brexit and the election of Donald Trump, political risk “is at historically high levels,” Hassan says.

Most frequently used euphemisms

Executives’ use of euphemisms in earnings calls can obscure the details of bad news and delay negative investor reaction.

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<thead>
<tr>
<th>Euphemism</th>
<th>Percentage of calls in which term is used</th>
<th>Average number of times repeated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Have an issue</td>
<td></td>
<td>5.9</td>
</tr>
<tr>
<td>Headwind</td>
<td></td>
<td>10.7</td>
</tr>
<tr>
<td>A pullback</td>
<td></td>
<td>4.4</td>
</tr>
<tr>
<td>Price pressure</td>
<td></td>
<td>7.8</td>
</tr>
<tr>
<td>Flattish</td>
<td></td>
<td>4.8</td>
</tr>
<tr>
<td>Wait and see</td>
<td></td>
<td>2.7</td>
</tr>
<tr>
<td>Soft market</td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>Missing something</td>
<td></td>
<td>1.8</td>
</tr>
<tr>
<td>Lumpiness</td>
<td></td>
<td>3.7</td>
</tr>
<tr>
<td>Transition period</td>
<td></td>
<td>2.2</td>
</tr>
<tr>
<td>Dead horse</td>
<td></td>
<td>1.7</td>
</tr>
</tbody>
</table>

Suslava, 2017

Other strategies are more logistical than emotional. The National Investor Relations Institute (NIRI), a professional association for investment-relations professionals, helps run data on best practices for holding calls. For example, calls are most often held on Thursdays, with earnings released just before the market opens for the day.

**Seeking out selective access**

Companies have responded to the increased interest in earnings calls. In 2016, 97 percent of public companies conducted calls, compared to 80 percent in 1996, according to a 2016 NIRI research report. There’s also been an uptick in CEO attendance: Minnis and his coauthors find that 93 percent of chief executives attended calls in 2007, up from 86 percent in 2003, and that the portion of the talking done by the CEO went up as well.

But the competition for special access to public companies is changing, says Minnis. While earnings calls must be available to the public, investors are flocking to conferences hosted by big financial institutions, which give investors a closed venue for communication. “At conferences, executives can provide pieces of the mosaic about the company that an expert investor might find informative,” Minnis says, though he adds that technically, Reg FD doesn’t allow any extra information to be released.

Ultimately, investors and analysts are looking for access to company executives—opportunities to interact one-on-one, outside the context of an earnings call, in settings where remarks are likely to be unrehearsed. The result is earnings calls that are increasingly augmented with other venues for interaction. “The market for selective access has opened up in other ways,” Minnis says.

**Debating the future of earnings calls**

The popularity of alternative venues for communicating with investors suggests firms continue to get savvier about how they release information. They may also be getting more cautious. In 2016, 15 percent of companies said that they prerecord formal earnings-call comments prior to hosting a live question-and-answer session, compared to 10 percent in 2014, according to NIRI research. What’s more, only 11 percent of companies that prerecord remarks disclosed that they do so. And 64 percent of companies said they now host invite-only postearnings calls for analysts and/or top shareholders, a number that has increased steadily, according to the data.

But even as the words become more rehearsed, there are other ways to keep digging, say researchers. Some are hoping that audio recordings of the earnings calls, as opposed to transcripts, will soon be easily analyzed in bulk. Focusing research on intonation, awkward pauses, and other auditory details can provide even more information about an executive’s temperament. “Even the pause between the question and answer could be predictive,” says Zakolyukina.

In addition to audio files, there is the possibility that in the future, firms will make video files available, which would permit analysis of things such as mannerisms or nervous tics.

“We’ve just started to scratch the surface,” Zakolyukina says.\[E88\]

For more on the use of language as data, see “Why words are the new numbers” (Spring 2015).

Go to Review.ChicagoBooth.edu to see citations for research in this article.
How to profit from magical thinking

Superstition pervades finance, real estate, and corporate settings. Managers and marketers can use it to their advantage.

BY CHANA R. SCHOENBERGER    ILLUSTRATION BY MICHAEL BYERS
At NASA's Jet Propulsion Laboratory, in Pasadena, California, where the space agency manages many of its mission launches, the control room features a display case with a container of Planters peanuts, a testament to magical thinking in action. The peanuts first appeared in the lab as a snack in 1964, as the Ranger 7 spacecraft prepared to launch. After six failed launches, “I thought passing out peanuts might take some of the edge off the anxiety in the mission operations room,” says Dick Wallace, a mission trajectory engineer, in NASA’s official account of the “lucky-peanuts” tradition.

That day went well, and the peanuts became a fixture for several decades—until the next generation of engineers forgot the tradition’s significance. In 1997, the Cassini mission to Saturn was slated to launch on October 13, but was rescheduled due to poor wind conditions. Then someone remembered the peanuts and realized there weren’t any in the room. When the countdown eventually started two days later, the engineers in the control room snacked on peanuts once again.

NASA engineers are highly trained scientists, and data would refute any possibility that launch success relates to what snacks engineers eat. But that hasn’t stopped NASA employees from bringing peanuts to countdowns and even enshrining them in a display case. In doing so, the scientists trained in evidence-based analysis bow to tradition that binds them to previous launches—and don’t take chances that could, in any remote way, affect the outcome of a mission.

“We’re not superstitious,” insists a representative for NASA, who says engineers don’t actually believe in any peanut power on mission outcomes and do veer away from the peanut tradition on occasion—on the 2016 Juno mission arrival at Jupiter, for example, “done with no peanuts in mission control.”

Superstition is believing, erroneously, that there is a causal connection between two things, even when it’s obvious that they are not related, says Chicago Booth’s Jane L. Risen, who studies the psychological underpinnings of phenomena such as superstition. “It goes beyond just being wrong to believing something that is scientifically impossible.” Superstition, which tends to be associated with creating good or bad luck, is closely related to magical thinking, which Risen describes as “the belief that certain actions can influence objects or events when there is no empirical causal connection.”

While many educated people may call such thinking silly and old fashioned, they also consider it unwise to discount. Hence people worry about knocking over a saltshaker but throw salt over their shoulder for good luck. They walk around ladders, avoid black cats, pick up pennies, and handle mirrors with care. And researchers observe people are also thinking magically about real estate, the stock market, and other areas of business.

Their findings could be useful for managers, marketers, and investors. . . . Knock on wood.

The fact that so many people hold superstitions—including NASA engineers—suggests that there is more to them than irrational or “primitive” thinking.
Why so superstitious?
Business and government leaders like to act strategically, or presume they do. But in many cases, their decisions—business, and personal—are informed by superstition, research suggests. After Hurricane Katrina, for instance, New Orleans Mayor Ray Nagin blamed the storm’s havoc on the wrath of God. He could have, more rationally, blamed it on people “for not maintaining the proper safeguards for a city of that size,” says Boston University’s Carey K. Morewedge.

Consumers, too, can be guided by superstitious beliefs. In Chinese culture, the number four, which sounds like the word for death, is avoided, while eight, nine, and six are considered lucky. Research by a team from Georgetown University, Nankai University, and the National University of Singapore suggests that ethnic Chinese residents of Singapore are less likely to buy a condo ending in the unlucky number four, or one that resides on the fourth floor, while they’re more likely to buy units ending in the lucky number eight. People who lived in both kinds of units had car accidents at about the same rate, one indication that home numbers did not confer luck and were instead simply subject to superstition. These superstitions had real consequences. Prices for units ending in four were discounted by 1.1 percent, while units ending in eight commanded a 0.8 percent premium.

When Chinese companies select dates for initial public offerings, they pick dates containing lucky numbers more frequently than statistics would expect, according to University of California, Irvine’s David Hirshleifer and Ming Jian and Huai Zhang of Nanyang Technological University in Singapore. Chinese companies also tend to pick telephone numbers with lucky numbers, says Zhang.

Traditional accounts of superstition insultingly blame superstitious beliefs on irrational or “primitive” thinking, but the fact that so many people hold superstitions—including NASA engineers—suggests that there is more to them. Researchers at Chicago Booth’s Psychology of Belief and Judgment Lab, among other places, are looking into a number of psychological phenomena surrounding magical judgments. Some examples:

1 **It’s a way to gain control over the world.**

Rather than focusing on people’s cognitive shortcomings, some accounts of superstition focus on people’s motivations. People believe and do things that go against logic in an attempt to understand and gain some semblance of control over the world, says Boston University’s Morewedge. “People tend to blame others more often for their negative outcomes and take responsibility for their positive outcomes,” he says. Magical thinking might come into play if you don’t get a promotion at work. You might determine that someone, perhaps an angry coworker, is impeding your progress.

This relates to a shared quest to explain our surroundings and regulate the uncertainty of our lives. Why has this stock gone up or down? Why isn’t my computer working? People believe things happen because there’s some design to our lives, design that goes beyond more rational explanations such as technological malfunctions. To some degree, we want to think events or outcomes have deliberate causes. “Attributing intentionality to an outcome allows you to feel you have control over it,” Morewedge says.

This applies to things as well as events. He finds that people are more likely to anthropomorphize a car or a computer if it’s acting unreliably. The owner may think the machine has a mind of its own, or that it’s been hacked. On the flip side, using random games such as Rock, Paper, Scissors, Morewedge finds that people think they can perform at their highest level when in the presence of a lucky object. “When they use these items, they have greater confidence that they can achieve performance-based goals,” he says.

Other research finds that people who don’t necessarily believe in karma nevertheless do good deeds for others in order to spark good outcomes for themselves. Someone waiting for important news—such as a job offer or the results of medical tests—may think it wise to build up her karma bank so that the universe will reward her with the outcome she wants, according to research by University of Virginia’s Benjamin A. Converse, Risen, and Colby College’s Travis J. Carter. “When wanting and uncertainty are high and personal control is lacking, people may be more likely to help others, as if they can encourage fate’s favor by doing good deeds proactively,” they write.

A series of experiments tested this hypothesis, both in the lab and at a job fair, where the researchers looked to see under what conditions people were more likely to donate to charity. Their findings suggest that people invest in good karma when they want to get something in return that they know they can’t control. “People may proactively invest in [magical] systems in the hopes of improving their outcomes,” the researchers conclude.

2 **There’s nothing to lose.**

Research also suggests that people who ostensibly know better succumb to superstition “because they have nothing to lose by doing it,” says University of California, Riverside’s Thomas Kramer. He sees magical thinking as related to the psychological belief of contagion, where objects exchange properties by way of touch or proximity. “[In contagion,] if a smart person touches

Lucky numbers can affect home prices

Taking advantage of uniformity in address numbers in Singapore’s high-rises, the researchers find that home buyers’ consideration of the unlucky four and lucky eight shows up in sale prices.

**Sale prices for apartments with addresses ending in a lucky or unlucky number**

| Percentage difference from all other apartments in study, 2000–09 |
|---|---|
| **-1.1%** | 4 Unlucky |
| **0.8%** | 8 Lucky |

Agarwal et al., 2016
a pen, some of that smartness transfers to the pen and to me,” he says. Along the same lines, some areas of homeopathic and alternative healing draw their purported impact from the idea that things that are alike share properties, which he says explains why some people in Asian cultures still adhere to the ancient belief that drinking the blood of a snake will increase strength and sexual prowess—with practitioners believing any short-term discomfort will have no lasting negative effects, and be outweighed by lasting positive ones.

For a more peaceful example, many public and private spaces adhere to the design principles of feng shui, a Chinese belief system that attributes a location’s energy flows to the organization of buildings and design elements. Adherents believe that arranging the office, for instance, according to feng shui rules will help achieve certain goals, including reducing anxiety and uncertainty. If you manage an office, or sell real estate, why not use it, by moving a doorway or locating a desk in a specific orientation? “If you believe in it, there’s much to gain; if it doesn’t work, then you don’t lose much,” says Kramer.

Our minds automatically see connections even when they aren’t there...

The psychology guiding superstitious behavior is fundamentally the same as the psychology behind any other intuition that’s wrong. “We’re trying to understand the world and figure out what causes what,” Risen says. It’s easy for people to pair two occurrences and assume a correlation. For example, a baseball fan might assume a correlation between the fact that he wore red socks and the fact that his favorite baseball team won a game. Sometimes correlations may be accurate. Some may have a seemingly logical explanation but be wrong. And some may be unquestionably, definitely wrong—which can be described as magical thinking.

Risen suggests that a basic, dual-process model for cognition can help explain why all people are susceptible to superstition, building on the ideas of Princeton’s Daniel Kahneman, who won the Nobel Memorial Prize in Economic Sciences in 2002. Kahneman describes two ways of making judgments: a “fast” way that builds on patterns you’ve seen before and other mental...
shortcuts, or heuristics; and a “slow” way that takes a more reasoned approach, correcting the “fast” errors that crop up. Our fast approach to making judgments is especially likely to lead to superstitious intuitions. If slower processes don’t recognize that the intuition is scientifically impossible, then it may guide behavior.

For example, Cornell’s Thomas Gilovich and Risen chronicle “a widespread belief that it is bad luck to tempt fate, even among those who would deny the existence of fate.” This manifests itself in people who carry umbrellas to ward off storms and who shy away from bragging and counting their metaphorical chickens before they’re hatched. The researchers identify basic “fast” cognitive processes responsible for these beliefs—the tendency to allow negative possibilities to capture our attention and to take the ease with which something jumps to mind as a cue for determining its likelihood. But even as people avoid behaviors thought to tempt fate, they may “shake their heads and roll their eyes, knowing that their behavior and worries are unwarranted,” the researchers write.

...and even when we know they aren’t there.

Risen says Kahneman’s basic model works, but it doesn’t explain why subjects can know something is irrational and choose to do it anyway. While the basic model quite reasonably assumes that people will correct their mistakes if they detect them, Risen suggests that magical thinking is one domain where people will sometimes maintain intuitive beliefs that they know are wrong. Thus, Risen’s model separates the detection of a fallacy from whether people correct it. A sports fan may know that his attire can’t affect the outcome of a game, for example, but he’ll still feel compelled to wear his lucky socks—and he’ll feel more optimistic about the game because he’s wearing them. Risen is continuing to test how people can maintain magical (and nonmagical) beliefs that they know are false, and how people can change their beliefs and behaviors when they recognize that those beliefs aren’t sensible.

Benefiting from magical thinking

Understanding how these sorts of cognitive biases work can help people understand when they are perpetuating erroneous beliefs themselves, and how to capitalize on them.

Say you know an executive who always wears his “lucky suit” when making a pitch to investors. He may attribute his skill in raising money to the suit itself, and discount or fail to recognize the other factors, such as preparation, that have more influence on the success of a pitch session. If he understands that he is looking for ways to gain control over the world, he may be willing to wear a different suit to a pitch and see if he is just as convincing. That could ultimately help because he will truly have more control over pitch sessions.

Developers in Chinese markets can cash in on these belief and behavior patterns by adding more units with lucky numbers and renumbering unlucky ones. Product managers can try integrating lucky characteristics, as dictated by superstition, into products—or avoid a bad-luck date for a product launch, Kramer suggests. (On the flip side, his research into lucky colors and numbers finds that “they work because they set up expectations.”) Widely held superstitious beliefs can create an expectation in the market, so that home buyers are comfortable paying more for lucky-number properties and are able to resell them later for more as well.

Investors could gain by recognizing how biases can cause market distortions. Hirshleifer, Jian, and Zhang looked at how lucky numbers affected stocks listed on the Shanghai and Shenzhen Stock Exchanges between 1990 and 2013. Analyzing the stock listing numbers of Chinese companies, they find evidence that when a company’s listing code—its numerical ticker symbol on the exchange—contains more lucky numbers, the return to the stock around the IPO date was higher. But when people bought seemingly lucky companies with less regard for fundamentals, stocks went on to underperform. In the first three years after an IPO, investors saw about 11 percent lower returns each year for lucky-number companies than for unlucky-number companies, the researchers find.

In addition, they find that some companies appeared to recognize and benefit from the bias. A higher proportion of companies’ listing codes had lucky digits than could be explained by a normal distribution, and companies with larger IPOs were more likely to have lucky-number codes (the stock exchanges don’t have a formal procedure for assigning these codes). The researchers surmise that larger companies have the political heft to demand better listing codes.

Executives should pay attention to culture, including regional superstitions, when making marketing decisions, Zhang advises. “We believe it’s universal that superstition will have an impact on people’s behavior,” Kramer says. “Superstitions allow you to deal with uncertainty and there is always uncertainty. They will always play a role.”

Seeking luck in the stock market

Studying stocks traded by Chinese investors, the researchers find that companies try to aid their fortunes by securing lucky listing code numbers on the Shanghai and Shenzhen stock exchanges.

Company listing codes with lucky and unlucky numbers

<table>
<thead>
<tr>
<th>4</th>
<th>Unlucky</th>
<th>6</th>
<th>8</th>
<th>9</th>
<th>Lucky</th>
</tr>
</thead>
<tbody>
<tr>
<td>At least one unlucky four, and no lucky digits</td>
<td>At least one lucky digit, and no unlucky four</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Actual percentage of firms (1990–2013)

6.5% 60.5%

11% 52.7%

What the percentages would be if all codes were randomly generated

Hirshleifer et al., 2016

Go to Review.ChicagoBooth.edu to see citations for research mentioned in this article.
THIS IS CHICAGO BOOTH’S LUIGI ZINGALES. IS MARA THERE?

HELLO, MARA FACCI OF PURDUE UNIVERSITY SPEAKING.

I’VE BEEN LOOKING AT MY CELL-PHONE BILL.

DID YOU KNOW THAT THE EQUIVALENT OF A $35.62 PHONE PLAN IN AMERICA COSTS $17.47 IN GERMANY AND $7.50 IN DENMARK?

WOW. THAT REALLY MAKES ME WONDER...

COULD THE GOVERNMENT LOWER MY PHONE BILL?
Hey! Hey! Hey! We're butting in on this conversation before you economists muck up everything!

Is this the National Security Agency?

We're not the NSA. We're American cell companies. You can't just go comparing countries like that!

Actually, since the electromagnetic spectrum is uniform across countries and tightly controlled by governments, it's a perfect case study for the effects of regulation!

I've pulled up some data on 148 countries. It looks like the more governments restrict competition by granting monopolies, restricting internet alternatives such as Skype, and stopping people from switching carriers, the more expensive plans become.
BUT! BUT! WE NEED THOSE PROFITS TO DEVELOP BETTER TECHNOLOGY!

IF THAT WERE TRUE, WE WOULD EXPECT TO SEE BETTER SERVICE FROM MORE-RESTRICTIVE COUNTRIES, BUT OUR RESEARCH FINDS NO EVIDENCE OF THAT.

BUT RESTRICTING THE NUMBER OF COMPANIES HELPS GOVERNMENTS! THEY CAN GET MORE MONEY OUT OF FEWER BUT LARGER COMPANIES.

ACTUALLY, THE DATA SHOW THAT SPECTRUM AUCTIONS GATHER MORE REVENUE WHEN THERE IS MORE COMPETITION.
THAT'S IT! WE'RE CUTTING OFF YOUR DATA! BLASTED ECONOMISTS!

LUIGI?

MARA?

WE DON'T NEED THOSE COMPANIES ANYWAY!
Reflective, not reactive

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When a retail chain such as Sears is in trouble—and Sears is in trouble, by its own admission—the usual levers to examine to improve performance are location, assortment, price, and, most importantly, the overall quality of merchandise.

Over the years, Sears has tried to move the needle by engaging each of these levers. For example, it experimented with location by opening a store in downtown Chicago in 2001, to serve the clientele coming to that area to shop at neighboring stores including Macy's, Old Navy, Gap, and Target. But the downtown store failed to generate enough traffic and sales to justify the premium location, and Sears closed it in 2014. It also experimented with assortment when it tried to return to its catalog roots by acquiring Lands' End, a higher-end clothing, luggage, and home-furnishings catalog retailer. That did not end well either: Sears spun off Lands' End in 2013.

Back in 1989, Sears tried to move from a high-low pricing policy, where merchandise sells at a higher regular price coupled with occasional discounts of varying depths, to an everyday-low-price strategy, where stores have lower regular prices but offer fewer discounts. This also resulted in failure, as the customer who came to Sears missed feeling the thrill of having discovered a quality product at a low price.
The refrigerator appears to be the big appliance that generates the most tweets across all the brands.

So over the years, Sears has been declining. It lost out to Walmart and Target in the bricks-and-mortar era, unable to compete with Walmart at the lower end and Target at the slightly upper end. More recently, the online assault mounted by Amazon.com has largely decimated what was left of the “Great American Store.”

Unlike many other retail chains, however, Sears owns several brands that are well known and trusted by American consumers. These include Kenmore appliances, Craftsman tools, and DieHard car batteries. Recently the company sought to raise money by selling these iconic brands. It sold the Craftsman brand to Stanley Black & Decker, another, larger tools manufacturer. While Craftsman products will still be available in Sears stores, ownership will pass to the purchasing company.

Sears has also been interested in selling Kenmore. Clearly there are other manufacturers—including Whirlpool, Electrolux (a Swedish manufacturer), Haier (a Chinese appliance maker), and Samsung and LG (Korean manufacturers)—that could potentially be interested in acquiring the Kenmore name. Obviously there are financial, operational, and other considerations that go into the decision to acquire a brand. Here, to analyze that decision, I take a limited perspective by focusing on the consumer to see if the Kenmore brand provides a good “fit” for these other players; ignoring the two big Korean manufacturers from the analysis, since these are large conglomerates with interests well beyond appliances; and looking at what consumers say on a specific social-media platform, Twitter. Limiting my analysis to one platform provides an incomplete picture, but also some insights.

I looked at data from the two-month period from November 7, 2016, to January 7, 2017, and I began by looking at “buzz,” the amount of activity being generated on Twitter by the various brands. Kenmore is generating buzz, so if you are a brand that is currently not front and center in the consumers’ minds, it might be beneficial for you to acquire Kenmore to increase “top of mind” awareness.

We see that Whirlpool and its subsidiary Maytag already control over half of all the conversations in this market. So while adding Kenmore to the mix would significantly expand coverage, it would provide less of a benefit to Whirlpool than it would to another manufacturer (but since Whirlpool already manufactures some Kenmore products, an acquisition argument could be made from an operations perspective). Both Electrolux and Haier would benefit significantly from adding Kenmore to their portfolios, as they currently have very little buzz—or access to the US market.

Does the volume of conversation also carry over into the sentiments associated with these brands?

We see that the brand likely to benefit the most is Haier, since the sentiments associated with its tweets are less positive than those for the other brands—except Whirlpool, which ranks lowest in sentiment. Electrolux in this case is already generating fairly high positive sentiments, although Twitter users’ negative sentiments are also high for this brand. From that perspective, Electrolux might benefit from an association with Kenmore.

Next I looked at the content of tweets about the various brands via word clouds—looking at what people tweeted about or retweeted from the brands. I wanted to see whether there were some complementary features or other attributes that Kenmore would provide the other brands. But it appears from the tweets that the brands are all very similar, and the refrigerator appears to be the big appliance that generates the most tweets across all the brands. And the word clouds indicate that Kenmore’s product line of small kitchen appliances, such as blenders, could potentially benefit other brands.

To dig deeper into the perceived commonalities between the various appliance makers, I constructed a similarity matrix that provides the extent of word overlap between brands. With this similarity matrix as an input, I used standard statistical methods to come up with a perceptual map.

Tweets about Whirlpool and Kenmore appear to be quite similar, reinforcing the point that combining the two brands may provide limited benefits. On the other hand, it appears that both Haier and Electrolux would benefit, given their limited overlap with Kenmore.

To learn more about the brands’ underlying attributes, I also created a map that provides information on tweet topics, and I interpreted these topics in terms of the features of interest to consumers. This reveals interesting differences across brands in terms of the features most closely associated with them. In particular, tweets about Whirlpool reflect product features, performance, and quality, but
What Twitter reveals about brand associations
A topical analysis of tweets shows that consumers associate different concepts with each appliance brand—for Kenmore, energy efficiency and the environment, and for Haier, promotions, price, and innovation.

My analysis seems to suggest that Kenmore would make a good purchase for Haier or Electrolux, but perhaps for different reasons. For Electrolux, Kenmore would bring more visibility in the US market. For Haier, the benefits include visibility and positive sentiment, as well as the chance to be associated with something beyond price and promotions. Both brands would benefit from Kenmore’s strong association with the environment and energy efficiency. These considerations should play into any potential bidders’ acquisition and integration strategies.

Pradeep K. Chintagunta is Joseph T. and Bernice S. Lewis Distinguished Service Professor of Marketing. He was assisted in this analysis by Chicago Booth MBA student Yogesh Kansal and University of Chicago student Shweta Desiraju. This essay is adapted from a blog post at kiltscenter.tumblr.com.
When making a profit was immoral

What the story of a 17th-century tradesman tells us about capitalism’s evolution

Reading history as a footnote to prevailing wisdom is better, perhaps, than being oblivious to the past altogether, but not by much. Those ignorant of the past have the advantage of never confronting the possibility that their most cherished opinions haven’t the imprimatur of time immemorial, while those steeped in historical events are tempted to regard their own beliefs as the final verdict of some inevitable struggle.

Take the system of beliefs we commonly associate with capitalism. However familiar they might seem to us, if we date capitalism’s founding moment to the publication of Adam Smith’s The Wealth of Nations in 1776, the free-market nostrums that shape our views of business today are not even 250 years old. To put that in perspective, if the time between the present moment and the dawn of man 200,000 years ago were translated into the distance from the Empire State Building to the Golden Gate Bridge, to reach an era when the convictions that guide contemporary commerce were entirely alien, you’d only have to travel about as far as the Lincoln Tunnel.
To get a sense of that age and how decisively the moral orientation of commerce has changed in such a relatively short period of time, consider the small tragedy of a Puritan tradesman, Robert Keayne, in whose business experience, the celebrated historian Bernard Bailyn has written, we find “one of the forces that pointed to the future.” If past is prologue, it also figures as a warning to the present.

Keayne was born in 1595 in Berkshire, England, not far from Windsor Castle. A humble butcher’s son, he would later note that he had received “no portion from my parents or friends to begin the world withal.” Accordingly, he obtained little in the way of formal education and was apprenticed at 10 years old to John Heyfield, a merchant-tailor in London.

Resisting the familiar impulse of indentured servants to steal away for an adventure on the high seas or in the seedier precincts of the city, Keayne successfully completed his eight-year contract before striking out on his own. He proved adept at his trade, a blessing that was compounded by marrying well in his early 20s. By 1634, Keayne was prosperous enough to wager £100 on the Massachusetts Bay Company. It was an enormous sum, more than double the yearly income of the average wageworker in Victorian England 250 years later.

The risk, however, was in keeping with Keayne’s conscience, which had been inflamed and enlightened by Puritan evangelists, while also being a considered bet by a savvy merchant on the bounty of a brave new world just across the ocean.

Along with Anne, his wife, and beloved Ben, the only one of his four children to survive infancy, Keayne voyaged to Boston in 1635, swiftly becoming one of the city’s most distinguished and widely despised merchants. In fact, we only know so much about him because of the 50,000-word will that he began writing in 1653, three years before his death, to provide a full account of his life and the probity of his business affairs in order to “cleare myself in all material things.”

To the settlers of the Massachusetts Bay Colony, the record spoke for itself. Keayne’s two decades in Boston encompassed three public scandals. One was deeply embarrassing (in 1652, Keayne was found guilty of public drunkenness); one was surely annoying (a decade before, one Goody Sherman had failed to successfully prosecute him for stealing her sow); but the final scandal, and the earliest of the three, gave the merchant the greatest anguish, for it seemed to encapsulate the impossible quandaries of his trade.

In 1639, only four years after he had arrived in town, Keayne was accused of “oppression” in his dealings, a catch-all term that covered any instance of buyers or sellers taking advantage of the ignorance or necessity of one another in a business transaction. The specific charge was that he had sold sixpenny nails for 10 pence a pound, reaping a healthy profit off his neighbor. Too healthy, it seemed, for the customary profit margin on basic goods in the colony was between 10 and 30 percent.

Keayne argued that the matter was a simple misunderstanding, willful on the part of his accuser. He said that the man had originally purchased sixpenny nails on credit for 8 pence a pound and later exchanged them for eighpenny nails at 10 pence a pound, a profit margin of only 20 percent (hardly a “haynous sine,” Keayne observed in his will). It was only when Keayne asked him to pay off his balance, after giving him ample time to do so, that the man brought his suit to the authorities, with the accusation of oppressive pricing.

Early on during the trial, Keayne made a strong show of defending himself, with the messenger who delivered the second bag of nails testifying on his behalf, but then a raft of townspeople came forward to levy similar charges against him. As John Winthrop, the governor of the settlement and perhaps the most esteemed man in Boston, wrote in his diary, Keayne was widely known for being “notoriously above others observed and complained of” for the prices he charged and had been “admonished, both by private friends and also by some of the magistrates and elders”—all, it seemed, to no effect. He was convicted by the General Court of the offense, which had broadened beyond a single transaction to encompass a general way of doing business.

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Had the matter rested there, one suspects that Keayne would still have complained in his will of the “deep and sharpe censure that was layd upon me,” but the incident would not have been the defining moment of his professional career and, perhaps, his life. But then the elders of the First Church of Boston took up the matter to determine whether an ecclesiastical reproach was also warranted.

Keayne was fortunate to escape the most serious punishment, excommunication. That sentence was passed on eight offenses related to
economic matters between 1630 and 1654, a period when only 40 such sentences were given, tantamount, as they were, to consigning one to eternal damnation. Instead, Keayne was formally admonished, according to the records of the First Church, “for selling his wares at excessive Rates, to the Dishonor of Gods name, the Offense of the Generall Cort, and the Publique scandal of the Cunry,” a censure he lived under until the following May, when he became “Reconciled to the Church.”

Keayne continued to attend services, and the day after the rebuke was handed down, the Reverend John Cotton, the city’s foremost theologian, delivered a sermon that was obviously inspired by the wayward merchant. The subject, Winthrop wrote in his diary, was the “false principles” of trade that so many merchants seemed to abide by. They were recorded by Winthrop as follows:

That a man might sell as dear as he can, and buy as cheap as he can.
If a man lose by casualty of sea, etc., in some of his commodities, he may raise the price of the rest.
That he may sell as he bought, though he paid too dear, etc., and though the commodity be fallen, etc.
That as a man may take advantage of his own skill or ability, so he may of another’s ignorance or necessity.
Where one gives time for payment, he is to take like recompense of one as of another.

For the sake of modern ears, let me paraphrase these “false principles:”

Buy low, sell high.
If supply falls, raise prices.
Pass along losses.
Buyer and seller beware.
Charge interest.

If it seems preposterous that anyone might successfully pursue business by the photographic negative of these principles, that underscores how completely our views have changed since the 17th century. In Religion and the Rise of Capitalism, a magnificent book that deserves to be better remembered, the English social critic and economic historian R. H. Tawney describes how the work of Catholic theologians in the late Middle Ages provided the “fundamental assumptions” that shaped Robert Keayne’s world and that capitalism’s proponents would later have to reinterpret, if not displace outright.

Tawney said there were two central precepts that guided commercial activity: “that economic interests are subordinate to the real business of life, which is salvation, and that economic conduct is one aspect of personal conduct upon which, as on other parts of it, the rules of morality are binding.”

Taken together, these precepts are directly at odds with the central organizational assumption of capitalism, namely, that we should be guided by self-interest in commercial pursuits. To men of Keayne’s day, the idea that a stable economic system could indeed be organized along the lines of self-interest would have seemed absurd, but it would have also made for a technical dispute that they would never have countenanced, not at least before they had disposed of some pretty serious moral objections.

The most serious objection would have involved the proper orientation of a tradesman to his customer. “A man in dealing should as really design his neighbour’s good, profit and advantage, as his own,” the Puritan divine John Bunyan wrote not long after Keayne’s passing. The businessman, no less than anyone else, should have the community’s interests at heart when he conducted his affairs, and consequently one could not be motivated exclusively by self-interest when he engaged his customers. The man “who sells his commodity as dear or for as much money always as he can seeks himself, and himself only,” Bunyan said. He is always looking after his own interests, not his neighbor’s, and therefore not God’s.

For the Puritans, and more or less anyone else in the West until the 19th century, the pursuit of divine intention on earth involved consistently looking after the interests of others as part of a complex and mutually dependent community. “For this end, we must be knit together, in this work, as one man,” Winthrop declared to his fellow pilgrims in 1630 in what is now popularly known as the “City upon a Hill” speech:

Today, we accept that the conduct of business should be oriented toward one’s self-interests.

We must entertain each other in brotherly affection. We must be willing to abridge ourselves of our superfluities, for the supply of others’ necessities. We must uphold a familiar commerce together in all meekness, gentleness, patience, and liberality.

Such a moral orientation toward others inevitably put the tradesman in an awkward position. Having no recourse to the “business is business” mantra commonly invoked nowadays to exempt the commercial sphere from conscientious behavior, a man such as Keayne was left to conduct his business according to a slightly different credo: do unto others as you would have them do unto you.

If nothing else, the study of history imparts one simple lesson: things change. Today, we broadly accept that the conduct of business should be oriented inward, rather than outward, toward one’s self-interests rather than the interests of any other person, much less the community at large. As a coldly scientific matter, we comfort ourselves with the belief that, practically speaking, it couldn’t be any other way, not if we want to enjoy the creature comforts the contemporary world affords. That may be so, but the conviction is also consistent with a radical change in the way we look at each other and the broader human world. Moreover, one needn’t go so far as the 20th-century philosopher Theodor Adorno in his belief that “[t]he eye for possible advantages is the enemy of all human relationships” to share the concern that orienting commercial conduct exclusively toward self-interested ends can imperil a community and the integrity of one’s conscience.

Robert Keayne never went so far, but his conduct as a tradesman in the Massachusetts Bay Colony portended one of the most significant shifts in commercial conduct brought about by capitalism, a change that went hand-in-hand with, and indeed relied on, a revolution in moral sentiments. When Keayne was asked to defend his actions, he could not say, “I’m a businessman. I was looking after my own interests. That’s what we do, and you’re all better off for it.” Such an argument might prevail in the court of public opinion today, but before a jury of peers in 1639, it would have been nothing less than a confirmation of what they had always suspected about a life devoted to business. 

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How to split equity without drawing blood

Figuring out each person’s stake in a company can be acrimonious work. Here’s how to ensure a fair split from the start.

We live in a world where entrepreneurs and early-stage company participants get taken advantage of so frequently that we hardly notice. Bad equity deals are the rule, not the exception. Fairness is rare. The intent for fairness is there in the way equity is split among business partners, but the practice of fairness is not. This is a correctable problem.

Equity in a start-up entitles the owner to a portion of the company’s rewards, if and when they come. The rewards are a portion of the future profits or the proceeds of a sale. For most start-ups, equity is divided among founders, investors, key employees, and other early stakeholders—usually according to a fixed-split system that virtually guarantees an inequitable and contentious outcome. These stakeholders could divide equity much more fairly if they followed a simple principle: a person’s share of the rewards
should always be equal to that person’s share of what’s put at risk to attain those rewards. This principle is at the heart of an equity-split system I call “Slicing Pie.”

When a person contributes to a start-up company and does not get paid for her contribution, she is putting her contribution at risk with the hopes of getting a future reward. And, while the timing and the amount of the future reward is unknowable, the amount of the contributions at risk is knowable. It is equal to the fair market value of the contributions.

Because it’s impossible to know when or even if the rewards will ever come, we can never know how much people must put at risk to get the rewards. Every contribution, therefore, is essentially a bet on the future of the company, and nobody knows when the betting will end.

**Blackjack**

Think of your start-up as a game of blackjack. You and a partner each bet $1 on the same hand. You have no way of knowing if you’re going to win or even how much you’re going to win, as different hands pay different amounts. The future, in other words, is unknowable. What is knowable is that you each contributed the same amount, and that amount is at risk because you could lose it all.

If you win, you should split the winnings 50/50, which is perfectly fair because you each bet the same.

But, what if the dealer deals two aces? You didn’t expect this, and you want to take advantage of the new opportunity, so you decide to split the aces and double down. (In case you don’t know how to play blackjack, “splitting the aces” means you are turning one hand into two hands and placing another bet.) Unfortunately, your partner is out of money. You aren’t, so you bet $2 more. Again, you have no way of knowing if you’re going to win or how much you’re going to win. What you do know is that you bet $3 and your partner bet $1.

Does 50/50 still seem like a fair deal? Probably not. In this scenario, you deserve 75 percent of the winnings because you placed 75 percent of the bets. If you simply keep track of what people bet, you can calculate exactly what portion of the rewards they deserve. It’s quite simple!

**The fixed-split problem**

Traditionally, nearly every start-up company uses a prenegotiated “fixed” or “static” equity split. In a fixed split, equity is doled out to participants in chunks, based on their potential contribution. This is kind of like paying someone his annual salary on his first day of work because he told his manager he was going to work hard. If it sounds silly, it is, but it happens all the time because many entrepreneurs believe they can predict the future. In fact, if they didn’t believe they could predict the future, they probably wouldn’t have the confidence to start a company in the first place. Optimism and confidence are important, but they don’t give anyone special powers such as seeing the future.

So, with the best intentions, founders enter into fixed-equity-split agreements loosely based on their predictions of this equation:

\[
\text{Your share} \% = \frac{\text{The value of your contribution}}{\text{The total value}}
\]

This is easy if they know what the numbers are. For instance, if you invested $100,000 in a company that has a postmoney valuation of $1 million, you would have 10 percent:

\[
10\% = \frac{100,000}{1,000,000}
\]

This is perfectly fair. You get a percentage that is in proportion to what you contributed. In most cases, however, we don’t know the values because they are likely to change, so people try to predict, estimate, or guess the variables.

Founders have to predict the future value of each person’s contribution (also known as the economic benefit to the firm) and they have to predict the total future value of the firm (because the current value is most likely $0). Both
of the answers to these questions will no doubt be based on a complex set of assumptions with virtually no grounding in reality.

Try as they might, they will produce numbers that will be wild guesses at best. At worst, they will be overly optimistic fantasies of a meteoric rise to fame and fortune. It’s impossible to create a fair fixed-equity split. And even if founders could make such a prediction, a split that was right one day will be wrong the next because start-ups always change. It’s such a complicated, emotionally charged discussion that many founders either avoid it altogether or do an even split such as 50/50 or 25/25/25/25.

All splits are dynamic
Sooner or later, all splits will need to be adjusted. In traditional equity models, the split often adjusts—incorrectly—after some kind of founder conflict. The adjustments simply set the team up for another fight later on—I call it the “Fix & Fight” model.

What might change
You may wonder what could possibly change to cause such founder conflict. The answer is everything. Whatever you think you and your partners will commit in terms of time, money, ideas, relationships, facilities, supplies, or anything else will likely be different as the company actually unfolds. When things change, you’ll be faced with one of two realities.

The first possible reality is that your share is less than you deserve:

Your share % < The value of your contribution/The total value

This is probably not OK with you. If you have less than you deserve, it means there is someone out there who has more than she deserves, and she got it at your personal expense. The greater the personal expense, the more upsetting this will be. You might even try to figure out who got more than their fair share and try to get some back with your posse of highly paid attorneys (if you can afford them). This happens all the time.

Even if you agreed to this arrangement in advance, it’s still not fair. The only reason people would agree to this kind of treatment is if they had no other choice or if they didn’t know any better. This, too, happens all the time. Some people have a habit of taking advantage of other people when they sense desperation or ignorance.

If you’ve ever been caught on the short end of this equation (as many of us have), you are probably going to try to avoid this situation in the future by making sure you cover your own butt. The greater the pain you endured, the greater your interest will be in covering your own butt, even if it means someone else has to lose. This leads us to the second reality that is also not fair:

Your share % > The value of your contribution/The total value

In this case you have more than you deserve. In many cases the more money, knowledge, or power one person has over the other person, the greater his share will be at the expense of the other.

Alligator pits
Because fixed-equity splits stop being fair the moment something changes, nearly every start-up has less-than alligators (<) representing people who have less than they deserve, and greater-than alligators (>) representing people who have more than they deserve. Eventually, the less-than people will get upset and want to renegotiate. Everyone becomes poised for a fight. I call these “alligator pit” negotiations.

In a fixed-equity split, every negotiation is an alligator pit because sooner or later something will change and it will stop being fair.

When we approach the alligator pit, we do it with fear, mistrust, and a keen instinct toward self-preservation. These are not the best building blocks for creating an awesome company.

Every time something changes, founders have to jump back in the alligator pit and renegotiate. Things always change, so it’s always a big, bloody frenzy of gnashing teeth and swinging tails. This happens over and over again, and each session in the alligator pit weakens working relationships. It’s a nightmare.

In an effort to protect ourselves from the snarling alligators that gnash their teeth and swing their tails, we invent concepts such as vesting, oppressive liquidation preferences, and the dreaded full-ratchet antidilution. Our attempts to protect ourselves from the alligator pits are expensive and time consuming, and often exacerbate the very problems we are trying to solve.

Research has shown that companies that use dynamic models fare better than those that use fixed splits.
Get them gators!
If you want to create a working environment that is dominated by trust, fairness, and cooperation, where everyone has aligned incentives, you've got to get them gators out of the equation.

Slicing Pie, the model I mentioned earlier, is a way to do that. There are two primary components of Slicing Pie: an allocation framework (which tells us how much each person should get) and a recovery framework (which tells us what to do when someone leaves the company).

The model is dynamic, meaning it changes over time, to keep it fair. Research has shown that companies using dynamic models fare better than those using fixed splits. Some people think fixed splits provide more certainty to participants. The only real certainty you will have is that you will eventually get thrown back into the alligator pit!

Calculating bets
Think back to the blackjack analogy. In order to apply the Slicing Pie model, you have to know how to determine fair market value so you can calculate each person’s bet. This is much easier to do than predicting the future!

For example, let’s say you are an experienced programmer with many successful tech projects under your belt. Your time has a higher value than the time of a young whippersnapper, right out of college with no concrete experience doing anything. Each of you could command a salary on the open market that is commensurate with your skills and experience.

Your respective fair-market-rate salaries would account for expected contributions to a firm’s productivity and would accommodate differences in skills, education, and experience. All things being equal, your ability to add value to a company would be higher, so you could command a higher salary. What you as the experienced programmer can do in a couple of hours might take the recent graduate weeks or months.

If the company pays you your full market rate, you are not putting anything at risk and, therefore, deserve no equity. If the company pays you less than your market rate, you deserve equity in proportion to the amount that you’re not getting paid. The same goes for the recent graduate.

The person who contributes $1 of cash to a company is putting more at risk than the person who contributes $1 worth of time or other noncash contributions.

Adjustments
There are two primary types of contributions a person can make to a start-up: cash and noncash. Cash contributions consume a person’s cash, while noncash contributions do not. For example, time is a noncash contribution and an unreimbursed expense is a cash contribution.

In most cases, it is much harder to save money than it is to earn money. A person who is earning $100,000 a year would be hard-pressed to save that amount in a year. Even if she could save all her money, she would be saving after-tax dollars, so a $100,000 annual salary would not mean $100,000 in the bank. The employer would pay employment tax and the employee would pay income tax. Lastly, when people actually buy stuff, they have to pay sales taxes or a VAT tax or other taxes, which further reduces the buying power of money. Therefore, the person who contributes $1 of cash to a company is putting more at risk than the person who contributes $1 worth of time or other noncash contributions.

Slicing Pie accounts for this difference by applying cash and noncash multipliers (aka normalizers). Just think of this as an “adjusted” fair market value.

The Slicing Pie formula
If we substitute the adjusted fair market value (FMV, which is easy to calculate) for future value (which is impossible to calculate), we have a perfect substitute for our calculation.

This:

Your share % = The value of your contribution/The total value

Becomes:

Your share % = The adjusted FMV of your contribution/The total adjusted FMV

In my book The Slicing Pie Handbook, I use the term “slices.” A slice is a fictional unit used to represent the adjusted fair-market value of an at-risk contribution. A slice does not represent equity shares, nor does it have any actual value; it just helps us to calculate the right percentages. The Slicing Pie formula is:

Your share % = Your slices/All slices
Slicing Pie in action

Let’s take a simple example of a fictional company where people contribute money, time, ideas, relationships, and other resources. For purposes of simplicity, we will assume that each contribution has been converted to slices (S). There are two partners, Norvin and Anson. In the first quarter they each invest 100 S (which could be any mix of money, time, ideas, etc.).

It’s logical that they would each own 50 percent of this business. And, because their contributions have been converted to slices, the contribution from Anson is “valued” the same as a contribution from Norvin, even though the company is probably worth nothing at this point. The next quarter Anson invests another 100 S and Norvin invests nothing. Maybe Norvin was busy with his day job that quarter. Here is what would happen if the split were fixed to 50/50:

In a fixed model, Anson would have no incentive to invest the extra contribution because their split would stay 50/50. This isn’t fair. Anson and Norvin would have to jump in the alligator pit and renegotiate their split. In a dynamic model, the split would adjust based on additional contributions:

This is fair, and both guys are happy knowing that they each have what they should. One might argue that earlier contribution is riskier, but measuring risk in a start-up is as impossible as measuring future value.

What if, during the second quarter, the company’s main client decides to cancel its contract? This would probably mean that the next round of contribution is actually riskier than earlier contributions. Considering this, Anson is more cautious, but Norvin is not:

The ultimate value of the company is still unknown. All that is known is how much each person contributed relative to the other person. Anson now has a smaller share, but he is comfortable with it because without Norvin’s contribution, the company may have failed. The following quarter neither one contributes anything; the company sells for $1 million.

Anson gets $400,000 and Norvin gets $600,000. This is exactly what they each should have had. Neither of them could have predicted that their company would sell for $1 million in less than a year, but they each invested what was needed to move the company forward. The model was always in balance.

In most cases, people attempt to negotiate, in advance, how much money, time, supplies, etc. they will need.

This excerpt is adapted from The Slicing Pie Handbook: Perfectly Fair Equity Splits for Bootstrapped Startups by Mike Moyer. Mike Moyer is adjunct associate professor of entrepreneurship at Chicago Booth.
How Eugene F. Fama has left his mark on industrial organization

The Nobel laureate is best known for work on efficient markets. But he also helped develop event studies, which have been used extensively in the field.

With the exception of his well-known work on the theory of the firm, Chicago Booth’s Eugene F. Fama is not mentioned as much as he should be in the industrial-organization literature. The reason is that one of the techniques that Gene was instrumental in developing, the event study, is used so routinely without attribution in industrial organization that I suspect many economists in the field are unaware that he helped figure it out. If Gene were a young assistant professor awaiting a tenure decision, or egotistical about the number of citations his work receives, I am sure he would be greatly upset. However, that is not a description of Gene.

In this brief space, I cannot comprehensively review all the topics in industrial organization influenced by event studies, but let me hit just a few key ones, with apologies to the many authors whom I do not have space to mention. I’ll end with a brief discussion of another area where Gene’s work is likely to influence industrial organization: the risk characteristics of small-value firms.

Merger policy is a fundamental topic in industrial organization. It is of practical as well as academic interest, as staffs of PhD economists at the Federal Trade Commission and the Department of Justice routinely have to figure out which mergers to allow and which to challenge.

The recent Antitrust Modernization Commission was charged with analyzing whether merger policy in the United States should be changed. Event-study literature about mergers was one of the key areas of academic research it examined.

Starting in 1983 with Dartmouth’s B. Espen Eckbo and Robert Stillman, now of Charles River Associates, industrial-organization economists have asked how the anticompetitive features of a merger could be analyzed by event studies. The logic goes as follows: suppose Firm A announces that it will merge with Firm B, and the value of the sum of the two firms postannouncement exceeds the sum of the values of the two firms before the announcement. That increase could occur either because the merger is efficient or because the merger will reduce competition and lead to elevated pricing. If the merger is expected to lead to higher prices, the rivals of the merged firm will benefit. However, if the merger will not increase market power but instead will create a more efficient firm, the values of the rivals of the merged firm should fall. So, by examining the response of rival firms’ stock prices to a merger announcement, regulators can tell whether the proposed merger represents increased efficiency or increased monopoly. This procedure exploits the more general and deeper shift in understanding introduced by Gene’s efficient-markets hypothesis,
that stock prices collect, reflect, and convey information otherwise held by dispersed market participants.

There are, of course, many caveats to such an analysis. For example, an event study requires that one define when the information about the merger starts leaking out to the market, how expectations change along the lengthy antitrust review process, and whether one can look at only equity values and not debt. Moreover, because firms sell many different products, the value of the firm may consist of so many industry segments that the effect of a merger in one segment will be hard to detect by examining the effect on the firm’s value.

Despite all these caveats, the results of these studies have been remarkably consistent over time. Mergers don’t seem to create market power but do seem to create efficiencies. There is an overall gain in value to the merged firm somewhere in the range of 0-10 percent above the value of the separate firms’ values, and that gain seems unrelated to market power. This result, of course, does not mean that mergers never create market power—just that any attempt by merger authorities to become more stringent in merger enforcement must recognize that, given our limited ability to identify such anticompetitive mergers ex ante, any significant toughening of standards runs the risk of deterring efficiency-enhancing mergers.

Event studies can also give guidance on whether government challenges to mergers have been perceived by the market as preventing antitrust harm. If the government challenges a merger that would lead to higher consumer prices because of the elimination of competition, that challenge should lead to a decline in the value of the merged firm’s rivals, who would benefit from the general increased price level. In a 2004 research paper, Tulane’s C. Edward Fee and University of Pittsburgh’s Shawn Thomas investigate that possibility and do not find evidence to support it. There may be anticompetitive mergers going on, but government agencies don’t seem to be able to identify them in their challenges.

More research is needed to reconcile these event studies with postmerger pricing and accounting information. If the merged firm is more efficient than the premerger firms, presumably measured profits should rise. That link has been hard to establish. Perhaps this is because of the difficulty of using accounting information, though I find that explanation unsatisfying. Some detailed studies of individual mergers have been more successful. There is evidence that CEOs who fail to deliver the anticipated value of a merger get replaced. But there is more work to be done to reconcile these results with the stock-price behavior documented by event studies. Moreover, there have been relatively few merger retrospectives on pricing in the industrial-organization literature, but that is changing. Linking up these postmerger studies on profits and individual pricing with event studies at the time of the merger would fill a gap in the literature. All of these advances are made possible by Gene’s contribution from decades before.

The effect of regulation is another question of great interest to industrial-organization economists. University of Rochester’s G. William Schwert describes clearly how event studies can assist in the study of regulation. Since that article was published in 1981, a large number of studies have done what Schwert suggests. Event studies have proven enormously valuable here, though again there are many complicated issues related to identifying the right event windows and figuring out how the regulations have affected the riskiness of the firms. The obvious question is how proposed and implemented regulations have affected the value of firms in the industry. If regulation protects consumers by limiting the exercise of market power on prices, regulations should reduce the profits of firms and lower their value. On the other hand, if producer groups use regulations to their advantage, for example by reducing competition, greater regulation might increase stock market value.

There have now been numerous event-study investigations of the effects of regulation and deregulation. The Federal Reserve’s Robin A. Prager used an event study to show that the creation of the Interstate Commerce Commission (ICC) in 1887 can be
viewed as an attempt by the railroads to create a regulatory authority that would limit the amount of railroad competition, to the detriment of consumers. The creation of that regulatory authority is associated with an increase in the value of railroads. Early court decisions that limited the power of the ICC to protect railroads from competition typically reduced the value of railroads. The ICC subsequently was captured by the customers of railroads and wound up harming the value of railroads.

There also have been numerous studies of the effect of deregulation of various industries using event studies. For example, MIT’s Nancy L. Rose uses an event study to show that deregulation of trucking in the 1980s led to large declines in the value of certain trucking firms, suggesting that the earlier regulations were used to prevent competition in trucking. University of Oregon’s Larry Y. Dann and University of Florida’s Christopher M. James find that the permission to issue variable-rate money-market certificates in the 1970s lowered the value of savings and loans. The 1980 deregulations, which allowed banks to offer a greater variety of services, helped large banks and hurt small ones. Central Connecticut State University’s Kathy Czyrnik and University of Connecticut’s Linda Schmid Klein use event studies to show that repeal of the Glass-Steagall Act increased the value of commercial and investment banks.

Event studies have also proven useful in industrial organization to measure the value of reputation. Reputation is hard to evaluate; but by looking at what happens to stock prices when an event hurts a firm’s reputation, one can quantify the harm to reputation aside from the direct harm from the unfortunate event. For example, AQR’s Mark L. Mitchell and Clemson University’s Michael T. Maloney examined what happens to the value of an airline when it experiences a crash. They find that the crash has a negative effect on firm value only if the crash was due to pilot error. If it was not pilot error, then their interpretation is that the airline has insurance to cover the direct costs of the crash and there is no further reputational loss.

Event studies have also been useful in the current controversy regarding patent-assertion entities, sometimes pejoratively referred to as patent trolls. The concern is that some firms do nothing but amass a large portfolio of patents of questionable validity and then go around suing lots of other firms, which settle the case rather than fight it in court in order to avoid high litigation costs. Such suits could deter innovative activity and could be viewed as a tax on producing firms. Event studies have shown that such suits have decreased the value of defendants in lawsuits by about $500 billion over the last decade. There is much concern that the original inventors of these patents obtain little of this bonanza, so there are no positive incentive effects on invention.

I conclude with a topic not associated with event studies. The article by Fama and Dartmouth’s Kenneth R. French, “Common Risk Factors in the Returns on Stocks and Bonds,” focuses on small-value firms. There is literature in industrial organization that looks at the birth and death of small firms. (As far as I know, it does not identify value firms.) This literature recently has shown that it is not small firms, but rather young ones, that have growth prospects distinguishing them from other firms. Reconciling and further investigating the connection between this literature in industrial organization and the finance literature in this area should have big research payoffs in identifying the risks facing small firms, and potentially in understanding the source of the small-stock and value-stock premiums in asset markets, and resolving puzzles such as the surprisingly bad stock market performance of small-growth firms, identified by Fama and French. Another great contribution from Gene, seemingly unrelated to industrial organization, may yet prove its importance in that area.

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Economics and the human instinct for storytelling
Why understanding dramatic economic events requires searching for the narratives that underlie them

Twenty-five years ago, Chicago Booth’s Dick Thaler and I set up a series of workshops at the National Bureau of Economic Research on what we called “behavioral economics.” Behavioral economics was economics with an input from the psychology department. Every department has its own tool kit for approaching research; we were very much influenced by psychology. Maybe a little sociology, maybe a little anthropology, but nevertheless all social-science fields.

I’m starting now, with my more recent work, to think that we have to look at the humanities as well. There is something difficult to formalize about human beings, but something that we nonetheless have to understand, and I think one way to do that is with an approach that I’m calling “narrative economics”: taking economics and adding the study of the narratives that people transmit.

The human species, everywhere you go, is engaged in conversation. We are wired for it: the human brain is built around narratives. We call ourselves Homo sapiens, but that may be something of a misnomer—sapiens means wise. The evolutionary biologist Stephen Jay Gould said we should be called Homo narrator. Your mind is really built for narratives, and especially narratives about other humans. That is why advertisers tend to focus not on a product itself, but rather on somebody doing some human action related to the product.

Narratives are contagious: they spread from one person to another. Some narratives disappear quickly; others can last a long time. I think of a narrative as a gem, something that you heard somewhere, and you think, I’ll remember that next time I’m in a conversation. I’ll use that. I’ll say it. I’ll try to present it right because I want it to have the effect that it had on me. That is a narrative. Narrative can, in the parlance of the internet, go viral.

The stock market gives us opportunities to construct narratives. For instance, earlier this year there were narratives around the Dow-Jones Industrial Average eclipsing 20,000 points for the first time in its history. In reality, that’s absolutely meaningless: the Dow started at 40 points in 1896, but it could have started at 50, or something else. Yet we constructed narratives around this moment: if you read a newspaper the next day, you might have seen a narrative about recently inaugurated President Donald J. Trump and his effect on the market, or a narrative about the triumph of the bulls over the bears. You might have read about whoops and cheers erupting on the floor of the New York Stock Exchange as the market closed.

Now, the people on the floor of the NYSE—who are themselves part of a different narrative, given the preeminence of electronic trading—aren’t stupid. They knew it was just a number that was made up, that the Dow hitting 20,000 wasn’t a result of some new level of fundamental market soundness. But the story wasn’t about the market being fundamentally sound; it was a story about a number, and about the people around that number.

That is narrative economics.

Not everyone is equally proficient at understanding narratives, and economists are among the worst at appreciating them.
I decided to go back and read US newspapers from 1920, just to try to get as immersed as I could in what was happening and what was being written about it.
narratives associated with it, but the one that you’re most likely to have heard involves Czar Nicholas II and his family. The Communists lined the family up, brought in a firing squad, and executed them all together. These were people that, if you’re living in the United States at that time, you knew, because they’re famous, they’re dignified, and they’re a beautiful family. They’re in the photo section of your newspaper regularly. The Communists just shot them all, and chances are it really got your attention.

All these events helped to set a mood among the public. If you’re an adult in the US at that time, maybe you are feeling kind of edgy. Maybe you are kind of angry. Maybe you also lost someone in your family in the war. And you’re experiencing inflation, and you’re seeing these companies making big money. It makes sense that this narrative about profiteers would be resonant among newspaper readers. So people started boycotting, particularly all these companies they thought were making obscene profits. That started a recession. Prices started falling.

Then people started worrying about prices falling, so they held off buying even more. I think that may be an explanation for what set the depression of 1920–21 in motion.

That event has repercussions later. Because when the Great Depression sets in, what was the narrative? Then it was 1920–21 all over again. The depression of 1920–21 had ended quickly, and many thought that the depression after 1929 would be similar. That is why President Hoover said it would be over soon.

The really big thing that happened immediately prior to the Great Depression was, of course, the 1929 crash. So again, I turned to the newspapers of that time to try to understand. The first thing that struck me is that newspapers started talking about a stock market crash for the first time in 1926. Why would that be?

When I was an undergraduate at the University of Michigan, I was assigned a book by Frederick Lewis Allen, published in 1931, called *Only Yesterday*. It was an informal history of the 1920s written immediately after the decade ended. According to Allen, the 1920s were a period of prosperity but also changing values and gender norms: women wearing short skirts, going off without any male companion, drinking at bars—trends that created a lot of discomfort among some people. There was also a lot of financial fraud. There was this sense that there was something immoral about the 1920s.

Ministers reacted strongly in their sermons the Sunday after the crash. To put it simply: they relished this crash. It was the day of judgment arriving. Allen, in his book, described a change in spirit and mentality during the Great Depression. Women in the 1930s felt repelled by the 1920s. They didn’t want to be part of it anymore. Skirt lengths went down. People started going to church more regularly. They didn’t want to spend money because it became unfashionable in the 1930s to show off your wealth. So demand fell. Again, it may be that a narrative—that the sins of the 1920s precipitated financial disaster—contributed to a dramatic economic event.

Why do economists miss the stories behind many of our economic fluctuations? One reason is that economists have a tool kit, and narrative hasn’t traditionally been in it. We view narrative as somebody else’s territory. We do simultaneous equations. We teach general equilibrium theory. That’s fine, but by the time we finish teaching those, we’re tired.

But there is room for economists to do research on narrative economics. We have databases. We can do quantitative analysis. It’s not easy to study the very human phenomena of narratives, but we can collaborate with people in the humanities—people such as literary theorists, who try to understand why some story structures work and others don’t. If we do, and if we make room in our tool kit for narrative, I’m optimistic that in the next 10 or 20 years, we will have a better understanding of economic fluctuations.

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Every entrepreneur should consider these statistics

Recently I received an email request from an entrepreneur to help figure out how to drive traffic to his fast-casual Indian restaurant without spending a boatload on marketing. The establishment had received favorable reviews by critics in local papers and by patrons on Yelp. He had drawn his own conclusion that his fundamental problem was the restaurant’s location. I gave him some blunt feedback:

One of the hardest problems to solve in the retail space is picking the wrong location. There are so many restaurants people can choose from that it is hard to become a destination that people will make the effort to go out of their way to try. It does happen. Think Urban Belly in Logan Square [a Chicago neighborhood]—somehow it went viral and became the hot spot for a while. But it is rare, and the cuisine has to be unique in some way. All the marketing in the world won’t make people go out of their way for good Indian fast-casual. There is just too much competition. Because restaurants have low barriers to entry and are not too expensive to start, there are way more restaurants that start up than the economy can absorb, so they do tend to fail at a pretty high rate.

Most people have heard the conventional wisdom that says restaurants are risky ventures, and only one in 10 survives. Anecdotes would seem to confirm this, as you may have noticed eating establishments come and go in your favorite neighborhood. It makes you wonder why anyone would risk so much to start something so likely to fail.

But like so much common wisdom in entrepreneurship, this failure rate is a myth. In doing additional research, prompted by the restaurateur’s email, I
found that new-restaurant failure rates are far different than most people think. In fact, it’s dicey to make general statements about the survival or failure rate in any particular industry.

Scott Shane, in his excellent book *The Illusions of Entrepreneurship: The Costly Myths That Entrepreneurs, Investors and Policy Makers Live By*, examined US Bureau of Labor Statistics (BLS) data to identify new-business failure rates by industry. He looked at companies started in 2005 and determined that industry does matter in terms of the statistical chances that a new business will survive for five years. However, survival rates ranged from 36 percent to 51 percent across industries as varied as mining, services, retailing, and construction. No industry—including food services—showed a 90 percent failure rate.

In reviewing these data, I was surprised to see that retail and services—sectors with low barriers to entry and relatively low start-up costs—fared better in terms of survival rates than industries more difficult to break into, including finance, transportation, and construction. I decided to update Shane's numbers to verify this counterintuitive observation.

The companies Shane looked at started in 2005 and had to endure the worst recession in US history since the Great Depression. But what about companies that started after that economic disaster? Using the BLS Business Employment Dynamics data, I discovered that companies that started in 2011 were in industries that had overall higher survival rates than those Shane looked at, with rates ranging from 45 percent for firms in the mining sector to a whopping 66 percent for agricultural start-ups.

Not only were overall survival rates higher, they changed over time—and survival rates for individual industries rose and fell relative to those of others. Mining moved from the industry with the highest survival rates in 2005 (51 percent) to the lowest in 2011 (45 percent). The construction industry bounced back from a 36 percent survival rate in 2005—during a real-estate and market crash that was caused largely by the mortgage and banking crisis, and that so clearly had an impact on the building trades—to 50 percent in 2011. Retail also had a huge surge, from 41 percent to 56 percent—giving retail businesses that started in 2011 a 15 percentage point greater chance of survival.

Why was 2011 such a great year to launch a new company? According to the US Census Bureau's Business Dynamics Statistics, from 1977 to 2008 the US economy saw a net addition of companies every year—as more new ones formed than went out of business. But in the three-year span from 2009 to 2011, company deaths exceeded births each year, and the economy lost a total of 211,496 companies.

This seems to have left a gap in the market, so entrepreneurs starting their companies from 2009 to 2011 had nearly a 51 percent chance that their firms would still be in business five years later—almost 3 percent higher than the survival average for the previous decade and a half. The only other stretch during that period when survival rates hit 50 percent was in 2002 and 2003, right after the tech crash. So it would seem that right after a market downturn is a good time for entrepreneurs to start new ventures.

But these numbers reflect average survival rates across broad industry sectors. How many entrepreneurs are really starting mining, agriculture, or manufacturing businesses? Those are not exactly the hot sectors that people read about in the press, yet they have more entrepreneurs than one might expect.
In 2011, there were more than 20,000 new companies launched in these areas, giving us a large data set to consider. These giant industries collectively contribute 16 percent to the overall US GDP, so there would seem to be a lot of room for new entrants. But they are unpopular for entrepreneurs, accounting for only 4 percent of start-ups.

What is going on with the most popular sectors for new start-ups? The top 10 industries, accounting for 86 percent of all new companies in 2011, saw five-year survival rates ranging from 45 percent in the professional, technical, and scientific-services sector to 60 percent in health care and social assistance. I find no correlation between survival rates and the size of the overall market as measured by percent contribution to US GDP. Apparently the economy can absorb new companies in growing markets such as health care as well as shrinking sectors such as retail and construction.

What does all this mean for entrepreneurs? Timing in the broader economy and a good value proposition mean more than what industry you choose. A cold industry—be it construction or agriculture—might get hot. Highly competitive markets such as restaurants and retail are just as likely to produce successful new companies as sexier industries such as high tech and finance.

Statistics don’t mean much to most entrepreneurs, including the intrepid restaurateur trying to drive traffic to his fast-casual Indian restaurant. Restaurant failure rates may not be 90 percent, but even 50 percent is a high hurdle. He responded to my feedback by saying,

“I appreciate your honesty and value your views. I do understand the competition in this market as well as the high failure rates but at this juncture I am all in and all I can do is work my hardest and give it my best so that no matter what the outcome, on hindsight I won’t say I could have done more.

For entrepreneurs, passion outweighs statistical odds. Even when facing the uphill battles of a bad location and a tough market, this entrepreneur needs to give it his all, so that he will have no regrets—succeed or fail. That resilience characterizes all successful entrepreneurs. And to them I say, keep fighting the good fight.”

Waverly Deutsch is clinical professor of entrepreneurship at Chicago Booth.
Identify and rise above load-bearing assumptions

What the skyscraper can teach us about leadership

In 1872, a 28-year-old apprentice draftsman named Daniel Burnham opened an architecture firm with his good friend, John Root. Burnham and Root would soon become one of the finest architectural firms in Chicago.

Among the firm’s best work is the Monadnock Building, in Chicago’s Loop, at the corner of Dearborn and Jackson. If you have time, or when you tour Chicago, I hope that you will see this building. There’s a very good coffee shop there, and a hat shop, and a great, old shoe-repair business. If you go to visit, pay particular attention to the walls.

They are 6 feet thick, almost 2 meters, at the base. They had to be that wide to support the weight of the 16-story-high building.

For thousands of years, buildings had to have thick walls because the walls carried the weight of the entire structure. The higher the building, the thicker the walls had to be. The Monadnock Building represented an amazing architectural achievement: it was the tallest load-bearing building ever built, and it was the tallest office building in the world. John Root called this building his “Jumbo.” It was his last project because he died suddenly of pneumonia while it was under construction.

But the Monadnock Building was a great achievement that also represented the limits of an age-old concept. It made sense that the walls had to be heavy and strong in order to hold the weight of the building. But with load-bearing walls, a building can only go so high. As the ambitions of city planners and residents rose, so did the desires of architects and their clients to build even higher. But how could you build a really, really tall building without building really, really thick walls?

A man named William Le Baron Jenney came up with the answer. Jenney is widely recognized as the father of the American skyscraper, and according to Chicago lore, he had a breakthrough idea when he observed his wife placing a very heavy...
A book on top of a tall metal birdcage. The cage not only supported the weight of the book, Jenney could see that it could have easily supported a whole stack of books. A stack of books piled high and balancing on a birdcage—what an image.

Jenney introduced the idea of a complete, steel skeleton, and he built the first fully metal-framed skyscraper in Chicago in 1884. Just as his wife used a birdcage to support the weight of a very big book, Jenney used metal columns and beams to support his building from the inside.

With Jenney’s new framework, limits on the height of buildings changed. Walls became more like hanging curtains made of glass, and columns within the buildings bore the structure’s weight across the foundation. Buildings began rising to impressive new heights, and together with the development of plumbing, electricity, and elevators, and most importantly with the invention of the elevator braking system, the sky was literally the limit.

The strength of an inner framework

If you go to the top of the Willis Tower (the old Sears Tower) or any other famous skyscraper on a tour of Chicago, you will see much more than an extraordinary view. You will see the power of abandoning long-held assumptions.

The assumption that walls held up a building dominated for many years and limited architects’ progress. Their load-bearing assumptions quite literally served as an upper bound to the height of the buildings they could design. Jenney’s vision to use metal-frame-core construction was brilliant. It represented a completely new way of thinking about the source of strength—the strength of an inner framework.

This story demonstrates the combined power of shedding a default assumption that weighed people down with making a major conceptual shift, which, in this case, provided architects the strength they needed to build higher.

Many of us face load-bearing assumptions, perhaps about management, strategy, finance, or leadership. For example, you may assume that the economic world is a zero-sum game. Or that some people can systematically beat the market without any inside information. Or that debt is a cheaper form of finance because it is less risky. Or that issuing equity is bad because it dilutes earnings. You may even assume that some people are natural-born leaders while others are not, as opposed to holding the view that leadership is a choice.

Shedding assumptions is not an easy task because many have served you well in the past, and there is risk in abandoning them. Yet one of the most important skills that you can acquire is a willingness to question your load-bearing assumptions and make a different choice, when necessary.

Now, there is a second thing that is important for you to notice about skyscrapers. In my classroom, we speak often about the frameworks that allow us to think more complexly about business issues across industries, economies, and geographies. When I teach leadership, I emphasize building our own personal frameworks. When we create our own structures, and reduce our reliance on externally provided ones, we increase our ability to handle ambiguity.

Creating our own frameworks can help us to be wiser, younger, and to learn more from everyday experience—and what we learn can better inform our choices. Frameworks can help each of us create a better future.

Just as a skyscraper’s strength comes from its core, the clarity, vision, and support for your own framework must come from your core. There is no blueprint for your future.

In architecture, structural integrity is established during the planning phase and built into the foundation. William Le Baron Jenney taught us to build up by building from within.

You need that same kind of structural integrity. Build from within. Build your frame with strong values. Build with selflessness, kindness, and curiosity. Build with open-mindedness to new ideas, with compassion, and with a sense of fairness. Your own inner framework will determine how high you can go. I hope you will continue to rise above your load-bearing assumptions, and keep building a strong, inner framework to ensure the integrity of all you do.

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What target should the Fed be shooting at?
The conventional wisdom on interest rates may be wrong

Underneath the quarterly hurly-burly—will the US Federal Reserve raise or lower rates a quarter percent? What will the Fed say about the economy?—a deeper discussion is brewing. Where are interest rates headed eventually? What should the Fed’s long-term interest-rate target be?

The traditional view is that the interest-rates glide path should aim at 4 percent: 2 percent real interest plus 2 percent inflation. But 4 percent is not written in stone, and many people inside and outside the Fed are rethinking this conventional wisdom.

3 percent?
One big subject of debate right now is whether the long-term “natural” real rate of interest—\( r^* \), or “r-star” in econ speak—has declined below 2 percent. Over the long run, the Fed cannot control the real rate of interest; that comes from how much people want to save and what opportunities there are for investment, i.e. the marginal product of capital. So, if the real rate of interest is now permanently lower, say 1 percent, one might argue that the glide path should aim for a 3 percent long-term interest rate—1 percent real interest plus the usual 2 percent inflation target—not 4 percent.

Fed Chair Janet Yellen recently came to Stanford and gave a very interesting speech in which she talked in part about a lower \( r^* \), and seemed to be heading to something like this view. Of course, cynics will say that it’s just the latest excuse not to raise rates. But this is a serious argument that should be considered on its merits.

0 percent?
So is a glide path toward 3 percent the answer? Maybe not. How about zero?

Long ago, Milton Friedman explained the “optimal quantity of money,” which is really the optimal interest rate. It is zero. (Or “permazero,” in St. Louis Fed President Jim Bullard’s colorful terminology.) At interest rates above zero, people hold less cash and spend time and effort collecting bills early, paying them late, and so on. This is all a waste of time from a social point of view. Also, taxes on rate of return are a bad idea. With all rates of return that much lower, the tax distortion is that much lower. For example, with 0 percent interest rates, and correspondingly lower inflation, inflation-induced capital-gains taxes vanish.

So maybe the glide path should be to a 0 percent interest rate, not 3 percent. If the natural real rate is 1 percent, then the Fed should instead moderate the inflation target, to -1 percent.

In this line of thinking, the long-term interest rate is what counts directly. Rather than start with a natural rate, add an inflation target, and deduce the long-term interest rate, we start with the desirable long-term interest rate, subtract the natural real rate, and deduct long-term inflation. And indeed, it becomes much less important for the Fed to divine what the “natural” rate is, as a larger natural rate will automatically be reflected in persistently low inflation.

4 percent?
Why not permazero interest rates? The primary reason often given is that interest rates gliding toward a zero long-term target cannot go substantially below zero, at least without banning cash and undergoing
many other gyrations of our monetary and financial system. So if the interest rate is near zero, the Fed does not have “headroom” to stimulate the economy in a recession. I don’t necessarily agree that this is so important, but let’s go with it for a moment.

Another argument against a zero long-term interest-rate target is conventional Keynesian policy analysts’ concern about a “deflation spiral” if the Fed can’t lower rates. Deflation breaks out, the Fed cannot lower rates, real interest rates rise, this lowers aggregate demand, and through the Phillips curve, more deflation breaks out, in an explosive downward spiral. I’m not convinced this is a problem either, as recent experience at the zero bound didn’t include this spiral and New Keynesian models don’t spiral, but we’re here today to flesh out the arguments, not to adjudicate them.

Still, both arguments for headroom above zero seem to imply a direct nominal-interest-rate target, not the sum of inflation plus the real rate of interest. If the Fed needs 4 percentage points of headroom, consisting of 2 percent real interest plus 2 percent inflation, it needs 4 percentage points of headroom, consisting of 1 percent real interest plus 3 percent inflation, no?

So, from either the optimal quantity of money or the zero-bound-headroom argument, it does not follow obviously that the interest-rate target should move up and down with the natural rate.

Permatwo?
The question is, then, why is there a direct role for the inflation target? Why do we have to start with 2 percent inflation and then add the long-term real rate to deduce the nominal-rate glide path, rather than think directly about the long-term interest rate?

I think the answer is that prices and wages are felt to be sticky, especially downward. This is the second argument against the Friedman zero-interest-rate rule: its steady deflation is said to require people to change prices and wages downward. This is said to cause disruption.

OK (maybe), no Friedman-optimal deflation. But why then 2 percent rather than 0 percent inflation?

Quality-induced inflation
One argument for 2 percent inflation is that inflation is overstated due to quality improvements. Two percent is really 0 percent.

On both prices and wages, we also should remember the huge churn. Lots of prices and wages go up, lots go down.

### Inflation target and interest rates

As real interest rates decline, the Fed’s federal funds target will decline, with a constant 2 percent inflation target.

#### Fed’s long-run projections

- Fed funds rate
- Real interest rate

For example, suppose the iPhone 6 turns into the iPhone 7 and costs $100 more. How much of that is inflation, and how much of it is that the iPhone 7 is $100 better? Maybe the iPhone 7 is $200 better, and we are actually seeing $100 iPhone deflation.

The Bureau of Labor Statistics makes heroic efforts to adjust for this sort of thing, but the consensus seems to be that inflation is still overstated by something like 1-2 percent. (The Senate Finance Committee’s Boskin Commission Report, for instance, suggested that the bureau’s Consumer Price Index was overstated by about 1 percent, as of 1996. University of Rochester’s Mark Bils argued in a 2009 paper that it’s a good deal more, though Bils’s analysis was limited to consumer durables, where quality has been increasing quickly. Recent work from Philippe Aghion, Antonin Bergeaud, Timo Boppart, Peter J. Klenow, and Huiyu Li suggests there is another 0.5–1 percent overstatement because of goods that just disappear from the CPI.)

This is good news. Nominal GDP growth equals real GDP growth plus inflation. Nominal GDP growth is relatively well measured. If inflation is 1 percent overstated, then real growth is 1 percent understated.
It also means our real interest rates are mismeasured. If 2 percent inflation is really 0 percent inflation, then 1 percent interest rates are really -1 percent real rates, not -1 percent real rates.

Back to monetary policy. Suppose that 2 percent inflation is really 0 percent inflation due to quality effects. Does that mean we should have a 2 percent long-term inflation-rate target?

I don’t think so. Again, the motivation for a positive inflation target is that there is some economic damage if people have to lower prices and wages. But during quality improvements of new goods, nobody has to lower any prices. They are new goods! No existing good has to have lower prices. In fact, actual sticker prices rise.

There is a deeper point here. Not all uses of inflation measures are equal. One purpose of the CPI is to compare living standards over time. For that purpose, quality adjustments are really important. Another purpose of the CPI is to determine if people have to undergo whatever pain is associated with lowering prices. For that purpose, quality adjustments are irrelevant.

On both prices and wages, we also should remember the huge churn. Lots of prices and wages go up, lots go down. The individual is not the average. Changing the average inflation one or two percentage points doesn’t make much difference in how many prices or wages actually have to go down.

In sum, the argument that quality improvements mean 2 percent inflation is really 0 percent inflation does not imply that therefore the inflation target should be 2 percent because otherwise people have to lower prices. Standard-of-living inflation is not the right measure for costs-of-price-stickiness inflation. In price-stickiness logic, the Fed should be looking at a CPI measure with no quality adjustments at all! (At least in this simplistic analysis.)

So the argument for a separate inflation target much above zero seems weak to me. We’re back to the Friedman rule versus headroom, which argues for a direct nominal-interest-rate target. Since I’m not much of a fan of headroom or activist monetary policy, involving large changes in interest rates to direct the macroeconomy from on high, I lean toward lower values.

As often in policy, we argue too much about the external causes, and not enough about the logic tying causes to policy.

Leaving aside price stickiness, I’m still sympathetic to a price-level target, rather than any inflation target, on expectations grounds. If the quality-adjusted CPI is the same forever, then we have a CPI standard, the value of a dollar is always constant, and long-term uncertainty decreases. We don’t shorten the meter 2 percent every year. For this purpose, we do want the quality-adjusted CPI, and for this purpose the inflation target is primary. An interest-rate target would have to rise and fall with \( r^* \).

Real-rate variation
There really is no reason that the “natural” real rate only varies slowly over time. Interest rates crashed in a month in 2008 because real rates crashed—everyone wanted to save, and nobody wanted to invest. The Fed couldn’t have kept rates at 6 percent if it wanted to.

So, the procedures used to measure \( r^* \), like those used to measure potential output, are a bit suspect. They amount to taking long moving averages and assuming that supply shocks only act slowly over time.

Typical optimal-monetary-policy discussions use a Taylor rule,

\[
\text{funds rate} = r^* + 1.5 \times (\text{inflation} - \text{target}) + 0.5 \times (\text{output gap}) + \text{deviation}
\]

and recommend short-term deviations from the Taylor rule if there are supply shocks. Well, short-term deviations are the same thing as short-term movements in \( r^* \).

There’s more than the conventional answer
As often in policy, we argue too much about the external causes, as if the policy consequences were obvious, and not enough about the logic tying causes to policy. There may or may not have been a decline in \( r^* \). But it does not follow that the glide-path nominal rate should be \( r^* \) plus a 2 percent inflation target. Maybe the glide path should be a 0 percent nominal rate or a 4 percent nominal rate independent of \( r^* \). There are plenty of mechanisms and trade-offs worthy of thinking hard about.

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Can we trust federal spending as an economic stabilizer?

Adjusting expenditures alone isn’t enough

BY WALTER D. FACKLER

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By a few years ago, many people believed that economic stability could be achieved quite simply by compensatory government finance. In recessions, it was argued, the [US] government should increase its expenditures to fill the deflationary gap caused by deficient private demand; conversely, during periods of inflationary exuberance, the government should curb its spending to bring excess total demand down to a noninflationary, full-employment level.

Some people still argue that way. But the simple spigot theory has lost its charm. Technical difficulties, problems of implementation, and popular notions about fiscal proprieties were too much for it. The debate has moved on to a more sophisticated plane. Since government spending is only one of several policy variables, and not the easiest to manipulate, the debate now centers on the “appropriate fiscal-monetary mix.”

How should spending policies be fitted into the total scheme of things—Federal Reserve monetary policies, tax policy, debt management, and international financial transactions? To what extent are various stabilizing devices substitutes for one another? To what extent are they complements? Which policy parameters should remain sensibly fixed while the others are adjusted to them and to changing economic circumstances? How do operational constraints affect the choice of means to be used for stabilizing ends? These are the critical and current questions that inform the more fundamental question of the extent to which federal expenditures can and should be manipulated for the purpose of achieving more stable economic conditions.

Yes, fiscal policy matters

Whereas the public debate over fiscal stabilizers was once conducted on too simple a level, it has now, perhaps, become too complicated—at least for...
By the time a significant fiscal shift takes place, the need has often passed, and the effects are often perverse.

A rule of cost
The annually-balanced-budget dictum is essentially a simple and important rule of cost: that, when resources are transferred from private to public use, they should be paid for honestly, openly, and fully. Considering mankind's long experience with fiscal chicanery, it is not a bad idea—only an unworkable one.

In a recession, deficits are inevitable because of our flexible tax structure and the automatic increases that occur in various welfare payments, and they are beneficial because disposable income, consumer spending, and employment are maintained at higher levels than would otherwise be the case. Furthermore, it is an incontrovertible fact that debt-financed government expenditures are no more inflationary, in a purely monetary sense, than are tax-financed expenditures—as long as the funds are borrowed in the open market at unpegged rates of interest. Both methods of finance take money from the public and raise bank reserves out of the financial system. It is also a historical fact, however, that past deficits (at home and abroad) often have been financed by inflationary methods, or have led to inflationary policies at a subsequent date, because of political reluctance to pay market rates of interest on accumulated deficits, i.e., on the national debt. Hence, the balanced-budget idea contains a second grain of empirical truth embedded in its unworkable formula.

With this clearing of the decks, let us now review the principal policy issues. The difficulties of trying to use discretionary ad hoc shifts in government expenditures as an economic balance wheel are well known yet often ignored.

Three time lags
The biggest problem is one of time and time lags. According to a popular schema adopted from a now classic article by Lloyd Metzler on inventories, there are three time lags that will always plague the policy maker.

First is the information lag. We never know where the economy is at the moment—only where it was last month or last quarter. Because our statistical indicators are unavoidably late at best and because of the difficulties of short-term forecasting, considerable time elapses before the need for policy action is clearly perceived.

Second is the decision lag. After the need for action is recognized, decisions take time. What kinds of expenditures should be increased, by whom, and by how much? The Bureau of the Budget simply cannot “push the funds out.” Other policy questions also must be considered. For example, should certain kinds of military procurement proceed apace when the Department of Defense is yet uncertain as to whether a particular weapons system is really what is wanted in the long run?

According to one of several “Stigler's Laws,” the government cannot do anything quickly. From observation I can tell you how this law operates in connection with fiscal policy. What usually happens is that internal pressures to accelerate the flow of obligations and expenditures build up gradually within policy councils. Then the various agencies must be consulted, and they generate a veritable snowstorm of paper. This process takes considerable time and, no doubt, yields considerable job satisfaction to government employees. There is much activity but little action. By the time a significant fiscal shift takes place, the need has often passed, and the effects are often perverse. Where congressional action is needed, as in the case of a tax cut, the decision lag can be interminable. More than two years of debate and harangue preceded the 1964 tax cut, and all during that time the
administration stoutly maintained that immediate action was desperately needed for short-term economic stimulus. By the time the tax bill passed, fears were growing that it might “overheat” the economy in the short run.

The third lag is the time required for the economic adjustments to take place. The effects of any policy—a significant shift in federal expenditures, for example—spread gradually through the economy. Public works and major procurement items have a long lead time. Even allowing for some immediate stimulus to private activity when contracts are let and before expenditures actually are made, the process of adjustment is slow. In military procurement, expenditures tend to rise about nine months after new obligations are made. The secondary multiplier effects of a rise or fall in government spending build up 12 to 18 months after the shift in policy is made.

Other practical problems
In practical terms, these three lags severely limit the scope for stabilizing expenditure policies. Indeed, there is an ever-present danger that fiscal manipulations will operate in a procyclical manner toaccentuate the swings of the business cycle, rather than moderate them.

To speed things up and reduce these inevitable time lags, a variety of proposals has been made over the years, ranging from a reserve shelf of public works to more-flexible administrative procedures in the Bureau of the Budget. The late President Kennedy, for example, requested from Congress executive authority to cut tax rates within a range and to undertake discretionary public works projects as economic stimulants when he deemed these actions to be desirable. As might have been expected, Congress did not rush to divest itself of its traditional prerogatives. For the present, at least, the forecasting, timing, and time-lag problems still loom as very large, if not insurmountable, obstacles to any full-blown stabilizing expenditure policy.

There are further difficulties. Stabilizing expenditure policy is clumsy. It calls for whipsawing governmental expenditures back and forth, expanding them in recession and cutting them back in a boom. In the process it seems highly likely that spending decisions will be even less rationally made than they are now. Governmental services are either wanted and worth what they cost or they are not, and spending decisions should be made on the basis of strict cost-benefit principles, as difficult as they are to apply in governmental budget making. As a practical matter, it is impossible to manipulate government spending in order to stimulate or depress aggregate demand without creating economic inefficiencies. For this reason, tax policy and monetary policy, which leave expenditures more or less fixed or to be decided upon the basis of independent criteria, have important advantages as stabilizing instruments.

Making fiscal policy work in context
In strict theory, of course, optimum combinations of several policies can be devised. For maximum output, resources employed in any particular manner should be as productive as in all possible alternative uses. This means that resources invested publicly should have the same marginal productivity as resources invested privately. Presumably, prospective government investments can be ranked in descending order of productivity, with fewer projects having higher rates of return (interest), and many more projects having lower anticipated yields.

Assume for the moment that the economy is in proper balance at high employment with both the private and the public sectors having equal marginal productivities. Now, private-investment demand shifts sharply downward. To stimulate private investment sufficiently to restore total demand to previous levels, monetary policy would have to be sharply expansionary and interest rates would have to fall far enough to induce the necessary private spending. However, at these lower interest rates, there would be underinvestment in the public sector, and our efficiency rule would be violated. Ideally, there should be some combination of money creation and increased government investment that would simultaneously restore full-employment demand and maximize overall production. Similarly, the efficiency rule requires a cutback of government spending and monetary restraint when private demands are shifting upward beyond the full employment level at current interest rates.

All this is well and good—and technical. In reality, no precise schedules are available to policy makers, nor are policy decisions made on the basis of a neat economic calculus. Budgets are, at best, crude economic instruments. During a recession, they become the vehicle upon which politicians load all their pet spending schemes. For this reason, many well-intentioned people distrust the use of expenditures as a stabilization device. They fear that government expenditures will be expanded willy-nilly in a recession (ostensibly to promote recovery) and expanded again in boom times (when tax receipts are permisibly high). In short, they fear that “stabilizing” expenditure policy will be used as a one-way street to permanent enlargement of the size and scope of government and that no sensible economic calculations will be used to control the traffic. Who would say that such fears are completely irrational or unfounded?

The last set of operational problems I want to mention deals with prediction, control, and substitutability. Much discussion of both expenditure and tax policy takes place within a vacuum. The effects of a change in expenditures or in tax-rate schedules will depend critically upon the direction of the accompanying monetary policy. Only to a limited extent are fiscal policies a substitute for monetary policies. In the main, they are complements, and the hoped-for stimulative or depressive effects of fiscal policy will not come to pass without cooperating monetary measures.

...
Consider the multiplier effects on total spending induced by an increase in government spending or by a cut in taxes. How is one to predict their magnitude? Will the Board of Governors of the Federal Reserve System be willing to increase the stock of money in sufficient amounts to finance additional transactions? If not, interest rates will rise and private spending will decline by an unpredictable amount, to offset, at least partially, the hoped-for build-up of secondary or induced spending.

This is a simple case. The difficulties are more fundamental and complicated. Besides capital-market offsets, there may be adverse price effects (bottlenecks), foreign-trade effects, inventory effects, and a host of other induced ripples, positive and negative, that will affect the outcome in any given situation.

Moreover, the size of the expected multiplier depends critically on the stability of the relation between private consumption expenditure and national income. If stability conditions do not hold, the value of the multiplier cannot be predicted with confidence. When one allows for other dynamic economic changes, the difficulties are compounded.

The President’s Council of Economic Advisers speaks blithely of “plugging in the best multiplier that economic science can produce.” Unfortunately, the best is not very good. Economic science simply cannot produce a very good number that will accurately predict multiplier effects in advance. This honest admission of uncertainty is, in itself, no bar to the use of fiscal policy, but it should cause economists to adopt a proper attitude of humility in making their recommendations.

**Predictability is paramount**

Prediction and control are crucial for economic policy. The best policy instruments are those that are properly subject to governmental control and that produce predictable results. In the final analysis, stabilizing expenditure policy must be judged in terms of these criteria. In a highly significant study for the Commission on Money and Credit, Milton Friedman and David Meiselman tested the predictability of the effects of changes in autonomous expenditures (net private investment and government) upon consumption and income as compared with the predictability of changes in the stock of money upon consumption and income. As Friedman and Meiselman write, “the results are strikingly one-sided.” It turns out that money matters very much. Monetary changes are much more highly correlated with subsequent income and consumption than are autonomous changes in expenditures.

**Monetary changes are much more highly correlated with subsequent income and consumption than are autonomous changes in expenditures.**

Friedman and Meiselman do not claim their findings to be decisive; there are statistical difficulties in fitting data into appropriate theoretical categories. But the study is highly suggestive and has created some stir. If money, which is subject to control, is a better predictor than autonomous expenditures, which are under only partial control and hard to manipulate, is there really a stabilizing task left for expenditures policy? Friedman and Meiselman have to be taken seriously because they ask the right questions. By trying to resolve what is basically a question of empirical fact, they have helped to lift stabilization policy out of the realm of theology.

**Where do we go from here?**

Does all this mean we should abandon economic stability as a goal of budget policy? I think not. To do so would constitute another form of “fiscal irresponsibility.” Despite the existence of serious technical and operational constraints on the effective use of discretionary expenditure policy, the economic effects of the budget simply cannot be ignored. At minimum, the budget pressures should work in the right direction. There is no excuse for tolerating the perverse fiscal acts that have sometimes occurred in the past. Moreover, there does exist some modest scope for improving the administrative procedures in order to adapt spending policy somewhat more effectively to changing economic conditions.

There are many unsettled questions in the field of stabilization policy. Most of them are not theoretical issues but questions of empirical fact. In other words, they are questions that eventually may be answered by painstaking research. One of the serious deterrents to progress on this front lies in the fact that too many people, including many economists, have a vested interest in or strong commitment to a particular intellectual apparatus or policy position. Such policy positions are often unrelated to economic realities. They change slowly.-cfr

Walter D. Fackler was professor of business economics at Chicago Booth, where he also served as director of the Executive MBA Program. He passed away in 1993.

Go to Review.ChicagoBooth.edu to see citations for research and publications mentioned in this essay.
WHAT ECONOMISTS THINK ABOUT PUBLIC FINANCING FOR SPORTS STADIUMS

Even if they never attend a game, fans can end up subsidizing their local sports teams via public financing of their stadiums. When the NFL’s Atlanta Falcons move into their new home later this year, for instance, they’ll be able to thank $200 million in public bonds that helped pay for the construction. Altogether, from 2000 to 2015, privately owned sports facilities cost US taxpayers $12 billion.

But do the local economic benefits generated by these facilities—via increased tourism, for example—justify the costs to the public? Chicago Booth’s Initiative on Global Markets put that question to its US Economic Experts Panel. Fifty-seven percent of the panel agreed that the costs to taxpayers are likely to outweigh benefits, while only 2 percent disagreed—though several panelists noted that some contributions of local sports teams are difficult to quantify.
**Question:** Providing state and local subsidies to build stadiums for professional sports teams is likely to cost the relevant taxpayers more than any local economic benefits that are generated.

**Michael Greenstone, University of Chicago**
“Sports teams generate value that they cannot capture through tickets/television. Chicagoans benefited from the Cubs winning the World Series. Subsidies are compensation.”
Response: Disagree

**Joseph Altonji, Yale**
“Tangible economic benefits are not large. Consumer satisfaction from having a local team is harder to quantify.”
Response: Agree

**Robert Shimer, University of Chicago**
“Some local economic benefits are easy to quantify, and those are small. But agglomeration effects are harder to measure.”
Response: Uncertain

**Christopher Udry, Yale**
“Almost always true, if ‘economic’ is narrowly construed as ‘fiscal.’ This is true for museums and concert halls as well.”
Response: Strongly agree

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**WEIGHTED BY EXPERTS’ CONFIDENCE**

- 26% Strongly agree
- 57% Agree
- 11% Uncertain
- 4% Disagree
HOW CAN WE IMPROVE WORKPLACE COMMUNICATION?

Chicago Booth’s Nicholas Epley, Ayelet Fishbach, and Heather M. Caruso analyze challenges that arise.

Nicholas Epley
John Templeton Keller Professor of Behavioral Science and Neubauer Family Faculty Fellow

Ayelet Fishbach
Jeffrey Breakenridge Keller Professor of Behavioral Science and Marketing

Heather M. Caruso
Adjunct associate professor of behavioral science and executive director of the Center for Decision Research

We communicate so much by email, yet email is easily misconstrued. Would we be better off picking up the phone or meeting people in person?

Epley: Communication media are simply tools for conveying ideas in my head to yours. The big difference between these different kinds of media is whether they include certain kinds of cues. Email only includes text. It lacks a lot of the paralinguistic cues we use in personal interactions—such as intonation and variations in pace—to communicate thoughts, beliefs, attitudes, and feelings. You know I’m excited about an idea because my voice flutters up and down, and I speak louder or softer. There’s a lot that’s communicated not just by what we say, but by how we say it. Text-based communication only includes what we say, only the semantic content, and so a lot is missing. One problem in communication is that when you are the person who is sending information, you have a hard time recognizing what’s missing on the recipient’s side. Text-based communication, however, is great if you’re going to send a spreadsheet, or for other core content that doesn’t require communicating contingency, motives, or desires. But it’s awful if you really want interpersonal understanding. The voice, we’re finding, communicates more than you might imagine. If people listen to somebody on the opposing side of the political spectrum from them, explaining why they voted for a particular candidate, people judge the person to be more reasonable, rational, and thoughtful.

Caruso: More impoverished mediums [such as email] lack context for why it is you’re communicating. Sometimes people just like to launch into the middle of the conversation and state whatever it is they have on their mind, without it being clear what the motivation is for sharing that. You run into some of the egocentrism problems that Nick referred to. Even if you describe the context, the words you use refer in your mind to certain meanings, to certain other conversations, to a certain history. If you’re not explicitly elaborating all of that, you shouldn’t assume that other people will get it. This is exacerbated when the people you’re communicating with are from a different background, or when their assumptions aren’t the same as yours. So in group decision making, it’s really important to set goals clearly, up front, consensually, face-to-face. Then, even when people start off with differing perspectives, you can step forward with a confirmed consensus on
Why you’re meeting, what you’re supposed to be communicating, and what the helpful information is that you need to introduce into the conversation.

**If we anticipate a conversation will be difficult, do we tend to revert back to email rather than confronting people directly?**

**Caruso:** When you’re coming from an unfamiliar background, or an historically antagonistic background to the other person, you might shy away from those kinds of conversations [in person] because you anticipate a fight, or some moment of embarrassment. We’re trying to understand, under what conditions are people actually willing to risk that kind of thing?

**Epley:** Our research finds that these conversations often turn out to be less awkward than the participants in our experiments expected them to be. You can make an important distinction between two parts of a conversation. You think first about engagement. How do I choose to engage with somebody in a conversation? The second is enactment. Once we’re engaged, how do I choose to talk about it? Psychologists study the enactment part a lot; but, I think some of these bigger questions here really take us a step back in the conversation stream, to whether or not we choose to interact. If I’m anticipating an awkward conversation with someone, it would be better for us to work out our differences by talking to each other in an information-rich environment. But I might choose an information-poor environment, such as email, which might increase misunderstanding rather than reduce it.

**Caruso:** [In email] I can write and pore over my word choice: I can prepare and manage my anxiety and uncertainty. We think this may reflect a tendency to want to script interactions, and that research may uncover conditions under which people are more comfortable with unscripted interactions, more comfortable with risk taking—able to find that energizing and exciting in a way that makes the awkwardness actually part of a game.

**Fishbach:** Let me defend information-poor environments. I really love reading books. Being able to focus just on one medium and not being overwhelmed by images and sounds is often what creates art. Let’s keep this in mind. Yes, there is less information, but sometimes less is more. There is another problem, which is bias in communication. When I listen to Nick, I might hear what I want to hear. If I want Nick to say something, the likelihood of me hearing it is much higher than if I don’t want to hear about it or if I don’t care about it. One of the classic demonstrations of that is an experiment in which there is a group of people passing balls, and you need to count the number of times that the people with the white shirts as opposed to the people with the black shirts are passing balls. While you are doing this, someone enters the room dressed up like a gorilla and dances in front of you. I think that in the original experiment most of the people, more than 50 percent, didn’t see that. They did not see a gorilla standing in front of them and dancing. Now, this is a very rich environment, but a gorilla can stand in front of you and you will not notice it because you are busy counting balls.

**Do those same biases apply to reading?**

**Fishbach:** Absolutely. You hear what you want to hear; you see what you want to see. Our expectations influence what we see in every medium.

**Caruso:** The Second City, the improv powerhouse, is partnering with us [at Chicago Booth] to look at the improvisational elements of everyday life, and interpersonal understanding is one of those things. Together, we’re running exercises in which people listen all the way to the end of a speaker’s statement—and people find this harder than they expect. But when participants do this, they become much more conscious of the interdependence between people who are speaking to one another. It suggests that there’s room for developing listening skills that allow for a fuller understanding of everything that a person is trying to get out.

**What are some other basic things that managers could do to improve their communication?**

**“In close relationships, people ask for more negative feedback than they do in distant relationships.”**

— AYELET FISHBACH

**Fishbach:** Perspective taking: [ask yourself, for instance,] “What would be my view on this topic if I weren’t managing this department?” Just by doing this exercise, you can generate the arguments that you are going to be facing. Other than perspective taking, one thing that we often advise people is to have a very structured way of collecting information.

**Caruso:** Start with asking people questions rather than thinking about what you need to communicate. There are benefits to just asking where people stand, how they think things are going.

**Fishbach:** The more a person is an expert, the more they feel confident about something, the more the relationship is established, the more negative feedback will be effective in motivating action. Think about a child who is learning to, say, ride a bike. You are not going to tell him that his balance is not great. You’ll say, “Wow, look at you. You can already go 10 feet. That’s amazing.” Now there’s more confidence. Now take the experts, a professional biker. You would say, “Here’s what’s missing. Here’s how you can get even better.” So there is always both [positive and negative feedback], but you know that one of them will motivate action.

**What about the recipients of feedback?**

**Fishbach:** Receivers like to get more positive feedback when they’re novices and ask for more ways to improve as they gain expertise. Also, in close relationships, people ask for more negative feedback than they do in distant relationships.

**Epley:** If I’m giving you feedback, I might anticipate you’ll respond really well to positive feedback, and you’ll just crumble or be angry in response to negative feedback—when in fact that’s often not how people take negative, constructive feedback. People want to improve, so if I tell you how to get better at something, or you tell me how to get better at something, that’s a positive thing.

**Fishbach:** There is definitely some coordination, in the sense that the receiver and the giver of feedback both evaluate their level of experience and relationship depth, and match the negativity in feedback to that level. If we agree our relationship is deep, there’s more constructive feedback.

**Epley:** I’d say our relationship is a 7.

**Fishbach:** That’s a problem, because I feel our relationship is a 10.

**Epley:** You’re right.
Appetite for risk can shape elections

People’s changing willingness to take on risks can drive the ups and downs of business cycles, but it can also influence whether people vote “left” or “right,” according to a model of political cycles by Chicago Booth’s Lubos Pastor and Pietro Veronesi. In the model, people choose either to be an entrepreneur or work for the government depending on their aversion to risk, which can change over time. In periods of economic turmoil, people tend to be more risk averse. But as the economy gets stronger, they may start feeling bolder—and vote differently. Learn more about the model at Review.ChicagoBooth.edu and on pages 20-21 of this issue.
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JULY 6–9
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AS SEARS FAILS, WHO WILL BUY ITS BRANDS?

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