Science and tech firms that leave gender discrimination unaddressed may overlook talented female candidates.
“Whether you do something based on your friends’ recommendations depends on whether they share the same friends as you.”

Read more on page 2.
In 2005, economist Larry Summers, then president of Harvard University, made a controversial speech in which he noted three possible reasons women are not as prevalent in science, technology, engineering, and mathematics (STEM) fields as men: women’s abilities were simply different and not as good as those of men, perhaps women were disinterested and preferred not to go into those fields, or, alternately, they faced simple discrimination—skilled STEM women are overlooked in favor of lesser or comparably skilled STEM men.

Data show that young girls do express interest and show aptitude in STEM subjects on par with their male peers and have comparable standardized test scores, evidence that should put to rest the first two hypotheses. But by the time they reach college, young women are not actively pursuing STEM majors and are outnumbered by male students in most STEM fields. If interest and aptitude aren’t initial barriers, could discrimination be keeping women out of STEM?

New research from Professor Ernesto Reuben asks that question. Working with Paola Sapienza of Northwestern University and Luigi Zingales of the University of Chicago, Reuben found that bias is thriving and has potentially far-reaching effects—but it can, to some degree, be offset.

In a series of experiments, the researchers mimicked how employers get information about candidates during job interviews. First, they asked subjects to complete a task that men and women perform equally well but about which there is a pervasive stereotype that men perform better: correctly completing as many math problems as possible in four minutes. After subjects received their scores, the researchers randomly assigned these same subjects to play the role of either employer or candidate. (Employers earned more if they chose the candidates who had performed best on the first task, while candidates earned more if they were chosen by the employers.)

Employers each met two candidates in person at the same time and had to choose which of the candidates to hire to complete another set of math problems. In some cases, each candidate told the employer how well he or she thought he or she would perform on the math task—just as a candidate might sell ability and skills in an interview—and then the employer made the hiring decision. In other cases, the researchers—a less subjective source of information—told the employers about candidates’ past performance before asking them to decide between candidates. In two other variations, employers chose between candidates based on sight alone before receiving any other information. In these cases, after employers made their initial choices, candidates then told employers their expected future performance, or the researchers told employers the candidates’ true past performance.

As the last step in the study, all the subjects took the Implicit Association Test.
(IAT), an assessment that measures associations of words and images through response times. “The test assumes that if, for example, you’re less quickly able to associate the words ‘female’ and ‘math’ together than the words ‘female’ and ‘humanities’ then your brain is trying to resolve a conflict about the association between women and math,” Reuben explains. “So the IAT gives us a measure of the relative bias of each of the subjects.”

The results were not encouraging: both male and female employers were strongly biased against female candidates in all variations of the experiment, choosing women significantly less than half the time (half being the rate women would be expected to be chosen in the absence of discrimination). Even in the variations where employers could change their choices after learning more about candidates’ performances from the researchers or through the self-reported scores, male candidates were still favored by at least 13 percentage points. And when the candidates self-reported, 9 out of 10 times when the employer chose the poorer performing candidate, that candidate was a female. (This is likely because when candidates self-report, men tend to overestimate their future performance, a tendency Reuben has already documented.)

Generally, those employers with IAT results indicating greater bias were among the most biased in the experiments; when they updated their hiring decisions after getting new information, they still chose inferior male candidates over superior female candidates with surprising frequency.

“Our experiment shows that discrimination can be costly to employers,” Reuben says. “You would think that in a marketplace competing for talent, firms that discriminate and don’t hire optimal talent would just disappear.”

It’s probably difficult to avoid discriminating, Reuben acknowledges. “You can’t not interview candidates, because you’d lose other valuable information—can they speak articulately and knowledgeably on the spot, are they a fit in terms of personality, and other considerations about someone’s potential success in a given firm’s culture.”

So what’s an HR department or a hiring manager to do? “Be aware. You can overcome your bias if you process the information you get properly—don’t give weight to stereotypes—and concentrate on the information you do have,” he says. “If you’re comparing two women to each other, you’re probably going to make a better decision than if you’re comparing a woman to a man. So, when possible, you should evaluate candidates separately by gender. And that implies that firms might even want to ultimately consider a quota system.”

Almost 60 percent of Americans now use Facebook, according to a February 2014 Pew Research Center study of the social network. What brought all those users on board? Sociologists have shown that dense ties are more influential than sparse ties: people are more likely to be influenced by friends who already know their other friends than by friends who don’t share the same social circle. So the conventional wisdom is that most people joined Facebook because others from their social circle invited them.

But the shift to ever-increasing online connectivity may be carving out some exceptions to this sociological rule, says Professor Dan Wang, who studies how peer influence and social ties shape tastes, consumer habits, and beliefs. He worked with Jure Leskovec of Stanford University to analyze 40 million members of an online social network spread over 40,000 online social network communities that, similar to Facebook, allows users to create groups based on interests, from book clubs to hot rod fan clubs. The online communities often have subgroups: the Harry Potter Fan Club community might spawn the Harry Potter Fan Club of New York, and so on. Users can also create offline events and invite other network members to attend.

Wang and Leskovec looked at invitations to join online groups and attend offline events to learn how users responded to invitations for both kinds of activities. “It turns out there’s no clean answer. Whether you do something based on your friends’ recommendations depends on whether they share the same friends as you and on the kind of action they are asking you to take.”

Consider someone facing three different invitations to join Facebook. Past research has found that this person is more likely to join if the friends who extended the invitation are not also friends with each other—it’s
the disconnectedness among friends that prompts joining, an action that doesn’t require much effort. “But if a bunch of different people you know were inviting you to a protest, or even a party? You’re much less likely to make that significantly bigger commitment when the invitation comes from a disconnected set of friends than if it comes from a connected set of friends,” Wang says, summarizing one of the researchers’ key findings.

Specific group interests don’t seem to matter: people from wine-tasting groups and babysitting groups and car fan clubs all behaved the same. But group size mattered a lot: People were more likely to join groups of about 55 or smaller when their friend networks were dense; once groups grew larger, new members were likely to join when their sparsely networked friends invited them. “It reflects how social movements and protests form,” Wang explains. “A small, new group grows because people join out of a commitment to friends they share. But once there is a critical mass, the group gains legitimacy by appealing to a broader audience.”

The findings have implications for social influence for one set of health behaviors but not others can inform the design of policy. Some types of social networks may be effective at promoting the adoption of healthy behaviors such as getting regular exercise. “It depends on the cost of the behavior,” Wang says. “Hitting the gym early every morning before you hit the office could be relatively high-cost compared to taking a walk during your lunch break. And, each behavior could spread differently depending on the connectivity of your social network.”
Leading Opinion Online

THE RESEARCH
Opinion leaders usually evolve slowly over time, bolstered by growing numbers of peers who trust their assessments. While this phenomenon can be difficult to measure offline, online networks where users establish links to others to indicate trust—such as Facebook “likes” or YouTube followers—offer a unique environment to capture the evolution of opinion leaders. Firms rely on opinion leaders to create buzz and critical word-of-mouth for products, increasingly important in today’s social media and product marketing landscapes.

Typically, online users become network opinion leaders based on several factors: how many people are already connected to and trust them (giving them more visibility within the network), and the number and quality of their reviews, based on how useful and informative other users find their opinions. Professor Kinshuk Jerath, along with Yingda Lu of the Rensselaer Polytechnic Institute and Param Singh of Carnegie Mellon University, created a model to analyze the roles these factors play in shaping opinion leaders on the online review site Epinions, where users review consumer products ranging from home and garden items to cars and movies.

To remedy this, Jerath recommends implementing expiration dates for trust links, so that a thought leader’s large following has to be continually re-earned with well-written, quality content. You can also create a scoring system for reviewers that rates both past and more recent reviews, allowing users to see a more comprehensive picture of an opinion leader’s quality.

READ THE RESEARCH

THE APPLICATION
Marketing Managers, Social Media Managers, Web Designers
You can use this research to design online networks that encourage opinion leaders to write high-quality reviews. The researchers found that while the usefulness and informativeness of an opinion leader’s online review was a more important short-term factor in attracting a following, the leader’s network position—for example, how many followers or connections they already had—was more important in the long run. The latter can hamper the inherent quality of reviews on the site, because this allows opinion leaders to rest on their laurels, Jerath says, knowing their large following is already intact via established trust links. This means, for instance, that once you follow someone on Twitter, all their tweets arrive directly in your feed—regardless of quality. The opinion leader has a built-in audience, increasing their visibility and making it easier to reach even more potential followers.

THE IDEA
Design online networks to foster high-quality content from opinion leaders.
New research in location-based mobile marketing shows it’s not who you know or where you’re going that matters, but how you get there.

The world’s more than one billion smartphones produce a lot of location data, which has marketers seeing dollar signs—but only if they can learn how to use that information. New research from Professor Miklos Sarvary may be the key to unlocking the selling power of location data.

Until now, the main technique for deploying ads using location data was geo-fencing—the idea that smartphone users should receive an ad for ice cream cones when they walk by an ice cream parlor. Geo-fencing works fine in locations like shopping malls where people already intend to buy something and may be more inclined toward impulse purchases. Where geo-fencing fails is in selling big-ticket items like cars. Is it possible to use location data for marketing in ways other than geo-fencing?

Sarvary’s latest research indicates that it is: he, along with Peter Pal Zubcsek of the University of Florida and Zsolt Katona of the University of California, Berkeley, studied the movements of smartphone users in a large city over a 3-month period. The subjects received mobile coupons, and the researchers received demographic profiles, information about how the subjects used the coupons, and GPS data. The researchers cross-referenced coupon usage to identify which people responded similarly to mobile advertising.

The researchers then plotted the GPS data for each smartphone user within a grid so that they could see where the subjects moved in relation to each other at different times of the day. The researchers theorized that individuals passing through the same spaces at similar times, said to be co-located, might share other similar traits as well.

Co-location may mean that individuals work in the same building, eat at the same restaurant, or use the same public transit hub. The researchers sorted co-located smartphone users based on coupon usage and demographics as well as identifying groups they called families—not literal families of related people, but individuals who were co-located from 1 to 5 a.m. for at least one-third of the time they were in the program, indicating they most likely lived in the same location (such as the same apartment building).

These co-located families were expected to have similar buying patterns, simply by having the same proximity to the same stores. Residents would be expected to buy milk at the same nearby grocery, for instance. But when the researchers looked at similarities among non-family individuals, they still found that co-location was a significant indicator of similar buying habits. This meant that co-location was not merely an indicator of proximity. Mobile location data could also be used to understand personal preferences. Moreover, co-location was a better predictor of purchasing behavior than demographics and was equally as effective as highly prized word-of-mouth promotion.

As surprising as this may seem, the findings are conclusive. “If two people are going to the same places at the same times, chances are one person is very similar to the other,” Sarvary explains. “That’s actually kind of amazing.”

Co-location works like a social network, where similar behaviors and preferences can be inferred between connected individuals. “We constructed the network in an artificial way by connecting people who are at the same place at the same time. They may not know each other. In fact, chances are they don’t,” Savary says. Yet even this constructed network seems to indicate that co-located people have similar traits.

Even in the age of Google Maps and open information, precise mapping data can be hard to come by. Notably, the researchers lacked landmark information like whether people were visiting stores, office buildings, or transit hubs. “This makes the results even more surprising. Even our meager information—location coordinates—told us a lot about how similar people were.”

The findings suggest that a mobile marketer could look at a smartphone user who purchased a new car, for instance, and then advertise that car to co-located people. Co-located users are expected to exhibit similar behaviors to the car buyer, regardless of whether they pass by the car dealership, which would have been the primary piece of information used in a geo-fencing model.

“Previously, I would have needed to know—for example—their demographics, their income, where they live, and their age, to target an ad,” Savary says. “With co-location data, you can basically improve your advertising responsiveness, either using it on its own or with demographic information.”
A Better Match

The main weakness of the waiting list as a tool for managing demand is that overloaded lists with long wait times discourage people from turning down offers, leading to poor matches.

A SIMPLE APPROACH TO IMPROVING WAITING LISTS

Those who decline their first offer are placed in a pool.

The pool gives them priority when another option is offered.

Priority is spread evenly across the pool, so newcomers are not disadvantaged.

The policy minimizes mismatches, creating better outcomes.

The main weakness of the waiting list as a tool for managing demand is that overloaded lists with long wait times discourage people from turning down offers, leading to poor matches.

Operations Managers

You can use this research to make matching systems more effective.

Leshno modeled different types of matching systems to determine which would lead to the most effective assignments. The goal was to create the best matches for the most people possible. In public housing, for example, that means encouraging renters to turn down apartments that are not well suited for their needs, enabling others to consider them. The more people who can consider an apartment the more likely it is the apartment will be assigned to a renter who really wants it.

Leshno showed that it can be tricky to get people to decline bad options. Renters will evaluate the possibility of getting a better apartment against a longer wait and will decline bad options only if they expect a better offer soon enough. Leshno analyzed different policies for managing the waiting lists, identifying a simple policy that ensures the greatest number of people avoid bad matches. To encourage people to avoid bad matches, wait-listed people who decline their first offer are placed in a pool that gives them priority when another option becomes available. Everyone in the pool has the same priority, and subsequent offers are made randomly, people who join the pool later are not disadvantaged. This leads the greatest number of people to decline bad options, minimizes mismatches, and creates better outcomes for all—whenever their numbers are called.

READ THE RESEARCH


JACOB LESHNO

Assistant Professor of Decision, Risk, and Operations at Columbia Business School.
What Makes an Idea Creative?

If you want your idea to be innovative, you need to hit the right mix of novelty and familiarity, a new study shows.

There’s a popular misconception that a great idea strikes from out of the blue, much like the apple that supposedly fell on Newton’s head. In fact, almost every idea, no matter how groundbreaking or innovative, depends closely on those that came before. “Coming up with an idea is best compared to inventive cooking: combining existing ingredients or modifying a recipe to come up with something new,” says Professor Olivier Toubia, who researches idea generation and social networks.

But is there a way to determine which set or arrangement of ingredients will make a great idea? Toubia, together with Professor Oded Netzer, sought to answer this question in a recent study that uncovered a schematic link between the various components of an idea and its perceived creativity. It is the first study to quantify how ideas with a particular mix of components that balance between novelty and familiarity are most likely to be seen as creative.

The researchers conducted a series of eight experiments in which participants were asked to generate ideas on a specific topic, such as how to improve a healthcare product. Over 4,000 ideas were generated in this study. These ideas were then evaluated by panels of judges, which in different versions of the study were composed of consumers, industry experts, and members of an online idea generation community. Each idea received an average rating for its creativity.

“We borrowed techniques from the world of big data, such as text mining, in order to automatically ‘read’ thousands of ideas and predict which ideas would be perceived as the most creative,” says Netzer, who researches how big data and related tools can be harnessed for business decision making.

In terms of the cooking analogy, each idea could be considered a recipe. Text-mining tools extract the ingredients. Using network analysis, the researchers analyzed the relationship of these ingredients within the baseline network. “If we ask someone to come up with an idea for an omelet, and they say, ‘I’m going to mix eggs and cheese,’ they’re picking a combination that is very common and familiar,” Toubia says. “But if the idea is to mix eggs and mint, that’s a less common and more novel combination.”

By looking at these combinations, researchers could quantify the balance between novelty and familiarity in each idea. “If your omelet has eggs, cheese, and mint, it contains a familiar combination—eggs and cheese—and some novel ones—eggs and mint and also cheese and mint,” Toubia says. The ideas that were seen as the most creative were those that struck an ideal mix between novelty and familiarity. “If an idea is going to be seen as exciting and new, there has to be

Oded Netzer is associate professor of business in the Marketing Division at Columbia Business School.

Olivier Toubia is the Glaubinger Professor of Business in the Marketing Division at Columbia Business School.

READ THE RESEARCH
If an idea is going to be seen as exciting and new, there has to be a twist. But at the same time, it has to include something familiar.”

a twist,” Toubia says. “But at the same time, it has to include something familiar.” In order to determine the optimal mix between novelty and familiarity, the researchers turned to the beauty-in-averageness effect uncovered by psychologists and biologists. Just as human faces with prototypical, commonly occurring features are judged as more beautiful, the researchers found that ideas with a prototypical mix of novelty and familiarity were judged as more creative.

In their final study, the researchers investigated ways of using these findings to help people solve problems more efficiently and creatively. They asked participants to submit ideas for creative smartphone apps that would help users improve their health. The researchers text mined a baseline of the 500 concepts (from discussions between users of several health apps) that are most frequently associated with health apps and designed a tool that would improve participants’ ideas by bringing them closer to the ideal mix of novelty and familiarity.

For example, if a consumer suggested a smartphone app that included three of the 500 concepts in the baseline, all of which were very common, the tool could suggest an unusual concept to include that would bring the idea closer to that ideal mix of novelty and familiarity. Likewise, if the consumer relied on five concepts, all of which were very unusual, the tool would suggest a familiar element that would help the idea seem more accessible. Ideas that were revised in this way were seen as more creative, the researchers found. “We have all of these big data tools; we can analyze tags and social networks. Most of these tools are just used for targeting and advertising,” Toubia says. “But we can also use them to help people.”

These findings have implications for almost any company or industry that is involved in idea generation. The researchers’ hope is that there are many other applications for similar tools. “If you want to be philosophical, this research is saying that good ideas are all about harmony and balance,” Toubia says. “And that balance is going to be useful in many areas in life that extend far beyond new product ideas.”

Dealing in Data

Robert Phillips is Professor of Professional Practice in the Decision, Risk, and Operations Division and director of the Center for Pricing and Revenue Management at Columbia Business School.

When it comes to negotiating the most profitable prices, humans help—but data delivers.

In many industries, it’s common for a firm’s headquarters to create a price list but grant local salespeople the ability to negotiate prices for individual transactions. For instance, when a consumer buys a car, the salesperson typically has room to negotiate the price, within limits set by the dealer. In theory, negotiations enable salespeople to use information about a buyer’s willingness-to-pay that was not available to headquarters when it set the list prices.

“A firm initially makes high-level decisions about what prices it’s going to charge based on its target consumer or the product itself,” says Professor Garrett van Ryzin, explaining what is known as uniform pricing. “But then it allows wiggle room for local salespeople to deviate from that price, with the idea that they can assess the individual customer, how willing the customer is to buy the product, what other alternatives the customer has, or uncover new information to exploit.”

“Some type of pricing is very common in business-to-business settings but it is also found in a few consumer markets such as auto purchases, lending, and mortgages,” explains Professor Robert Phillips.

Despite how common this practice is, however, there’s long been debate about how much price discretion actually benefits firms. Is it worth putting such power in the hands of salespeople? “It’s expensive to train people to negotiate face-to-face,” van Ryzin says. “Many argue that salespeople don’t do a good job of it, either because they’re not able to accurately assess somebody’s willingness to pay or they don’t negotiate effectively; or they have other incentives to sell—they just want to close the deal to meet sales goals, rather than try to get the best price.”

Complicating the debate is the improved ability to use data to set prices more intelligently than ever before. A firm’s centralized headquarters typically has access to far more data than any individual salesperson, so it is better poised to use business analytics and data to determine the best prices to offer. “There is often tension within organizations
between finance departments, which believe that pricing should be centralized, and sales departments, which believe that salespeople need more pricing discretion,” Phillips says.

To find which approach most benefits firms, Phillips, van Ryzin, and Serdar Simsek PhD ’13 of Cornell University, investigated pricing data from a major auto lending company with local pricing discretion at its many individual dealerships. They applied a control function approach to determine the extent to which individual salespeople were setting prices that were either better or worse than the prices recommended by headquarters. They found that local salespeople negotiated prices in a way that increased nationwide profits by approximately 10 percent on average; in other words, allowing salespeople price discretion did result in more profit for the firm than using the prices that were initially set by headquarters.

However, further analysis looked at what the company could have achieved if they had used the same information that they had initially used to set the list prices to recommend much more granular prices that were optimized for each market. This latter approach could potentially deliver even more benefit to the firm—an increase in profits of up to 27 percent over actual profits realized using localized price discretion. This suggests that centralized pricing—if appropriately optimized using today’s improved tools—can be more effective than price discretion in the field. The verdict: the benefits of a skilled sales force in earning maximum profits for firms may be diminishing in an increasingly data-driven world. This may explain why many industries, including hotels and retail, have moved away from local price discretion to centralized pricing.

“This casts light on an important issue facing many companies—how much pricing discretion to give salespeople. When you don’t have very intelligently set prices to begin with, local salespeople’s negotiating abilities can add a lot of value,” says Phillips. “But the added value of negotiation is much more limited if you do a really clever, informed job of setting prices using data.”

The benefits of a skilled sales force in earning maximum profits for firms may be diminishing in an increasingly data-driven world.

SET PRICES OPTIMIZED FOR EACH MARKET

List prices that were optimized for each market increased profits up to 27 percent.

READ THE RESEARCH

The technique acts as a filter, sifting through financial statements for signs of likely manipulation.

A Filter for Financial Fraud

THE RESEARCH

During the last decade, the Securities and Exchange Commission (SEC) has dramatically scaled back the unit responsible for investigating accounting fraud and increased its focus on misdeeds in the financial sector that have emerged as a result of the financial crisis that started in 2008. Reported instances of accounting fraud and financial restatements have dropped, but many experts cite lax enforcement as a result of the cuts, not a decrease in wrongdoing, as the cause of this drop.

Professor Dan Amiram, who specializes in accounting, taxation, and business law, along with Columbia Business School doctoral candidate Ethan Rouen and Zahn Bozanic of Ohio State University, adapted a statistical technique that has been used to detect other types of artificial data manipulation that could help the auditors, investors, and the SEC quickly—and inexpensively—detect accounting fraud and financial irregularities. The technique acts as a filter, sifting through financial statements for signs of likely manipulation to point investigators toward those that should be more thoroughly investigated.

THE APPLICATION

Auditors, Financial Regulators, Investors

You can use this research to detect likely instances of accounting fraud and financial irregularities in financial statements. Using methods from statistical analysis, the researchers developed a measure, the Financial Statement Divergence (FSD) score, that allows them to compare the distribution of certain numbers in a firm’s annual financial statement to that of Benford’s distribution—a theoretical expected distribution frequency. In this case, the distribution is applied to the frequency with which the first digits of numbers in a financial statement should appear.

For example, the first digits of the numbers in the statement should appear with decreasing frequency, with the number 1 appearing about 30 percent of the time, the number 2 appearing about 17.6 percent of the time, and so on.

The researchers found that about 84 percent of existing recent financial statements conform to Benford’s Law, or the law of first digits. They measured how much the nonconforming statements diverged from the expected distribution—it’s this divergence that makes up the FSD score. The higher the FSD score, the greater likelihood of misstatement, a signal that should trigger a deeper investigation for wrongdoing. The study shows that firms that corrected their misstated financial statements had lower FSD scores after they corrected the wrongdoing. The study also shows that FSD scores predict actual SEC enforcement actions against misstating firms.
Has “Say on Pay” Worked?

Shareholder voting on executive compensation has done little to curb CEO pay—but has brought transparency to governance.

The rise of dot-coms in the late 1990s pushed CEO compensation up so high that just before that industry’s bubble burst in 2000 the average CEO-to-worker pay ratio in the United States, across all industries, was 400 to 1. For context, consider that in 1965 the ratio was just 18 to 1. Then, in 2001, the Enron and WorldCom accounting and governance scandals came to light. The increasingly popular practice of offering stock options as compensation to upper management created perverse incentives for executives to doctor financial reports in hopes of inflating stock prices. Stock options also played a key role in the compensation packages of dot-com executives and may have influenced valuations of those firms.

As a result, large institutional investors (such as pension funds) pushed for shareholder votes on CEO compensation policies, and many nations, including the United States and the UK, have mandated some form of so-called Say-on-Pay (SOP) practices. While such SOP votes are nonbinding, campaigns to implement the measures often brought unwanted scrutiny to targeted firms and their boards.

How successful have these nonbinding votes been in curbing CEO pay, and what are the other economic consequences of Say on Pay for firms?

How successful have these nonbinding votes been in curbing CEO pay, and what are the other economic consequences of SOP for firms? Professor Fabrizio Ferri looked at the last decade and a half of data and research on SOP in the United States and the UK to learn how effective such measures have been.

Across countries and firms, none of the data or studies Ferri analyzed showed that SOP votes had much effect on reining in CEO compensation levels. However, they did affect pay-for-performance sensitivity: He found that at firms with negative SOP votes—where a majority of shareholders voted against a board’s executive compensation proposal—CEOs did face a greater penalty for poor performance than CEOs at other firms (perhaps unsurprisingly, because many SOP votes have been motivated by shareholders’ requests to link pay to performance, especially on the downside). Ferri also found that many boards sat down with institutional investors in the lead up to SOP votes to negotiate key policies such as severance contracts and equity grants, and that almost all boards changed compensation contracts after negative SOP votes. So while SOP doesn’t appear to lower CEO compensation on average (except in cases of poor performance), it does prompt boards to be more involved and transparent with shareholders in the compensation policy process.

To determine what happens to firm valuation when SOP is on the table, Ferri analyzed event studies around SOP legislation, which, for example, consider the market reaction after a government announces a proposal to make SOP votes mandatory. “If the market reacts positively to this and similar announcements, it is consistent with the idea that it expects Say on Pay to create value overall by reducing excess compensation and providing better incentives, which should result in a higher value,” Ferri explains. “Or, if the market thinks that shareholder involvement in setting executive pay is just going to create distraction and be destructive, that should result in a lower value.” The results were mixed but suggest that the overall effect is probably positive, albeit modest—there’s some evidence of positive market reactions, much evidence of neutral reactions, and no evidence of negative, value-destroying reactions.

READ THE RESEARCH

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READ THE RESEARCH

Fabrizio Ferri is associate professor of accounting at Columbia Business School.

READ THE RESEARCH
Shareholders don’t necessarily want to micro-manage compensation contracts, but they do want to play a role in how policies are shaped.”

Ferri notes that SOP votes against board-proposed compensation packages are actually quite rare, although they make for good press and tend to get outsized attention. “That suggests that institutional investors feel that compensation packages overall are OK and there are a few instances when it’s important to raise their voice,” Ferri notes. “And in those cases very often the compensation is a symbol of governance more generally. Shareholders don’t necessarily want to micro-manage compensation contracts, but they do want to play a role in how policies are shaped.”

While there are some differences between the United States and UK in terms of regulations and relationships between firms and institutional investors, Ferri found that the effect of SOP has been similar in both countries: little effect on pay levels, more pay-for-poor-performance sensitivity, and the elimination of controversial features of compensation contracts after rare negative votes. Because other nations’ SOP mandates share key features of those in the United States and UK, it’s likely that they will experience similar outcomes.

Overall, Ferri says, SOP works, if not exactly in the way its architects intended. “SOP per se is just a tool. It worked, in the sense that boards heard what shareholders had to say on pay. But by and large, shareholders had little to say on compensation levels and more to say on specific contractual features viewed as affecting the relationship between pay and performance. Hence, overall SOP has had no significant effect on the level of executive compensation but has resulted in greater use of certain features, such as performance-based vesting of equity grants and the elimination of other features such as excise-tax gross-ups,” he says. “Even when it has not affected compensation contracts, it has led to better dialogue with shareholders and increased board transparency over the pay-setting process.”

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Sharon Katz is associate professor of accounting at Columbia Business School.

Pro-Borrower or Pro-Lender?

Commercial contract laws that govern lending can generate big business for states—but borrower beware.

When taking out a loan to support expanded operations or enter a new market, businesses may not consider which state laws apply to the commercial debt contract that governs the loan. A business may not even be aware it has a choice. But it does: in many states, neither borrower nor lender need have any connection to the state they contract in.

Why does it matter? Because debt contract laws differ across the United States and there are substantial economic implications to the laws, according to new research from Professor Sharon Katz, Columbia Business School doctoral candidate Colleen Honigsberg, and Gil Sadka of the University of Texas, Dallas. The researchers first examined the relationship between commercial contracting laws in different US states and the terms and volume of debt contracts between borrowers and lenders. Then they examined how violations of these contracts under different states’ laws impact additional investments and borrowing. How do states benefit from commercial contracts law?

What does it mean for businesses that depend on easy access to loans to operate and grow? What does it mean for lenders?

To answer their questions, the researchers first created an index reflecting how lender-friendly each state’s contract law is: New York is the most lender-friendly state, with liability laws established that unequivocally favor banks; California is the least lender-friendly state, with liability laws that are better for borrowers. The researchers then combed through more than 3,000 commercial debt contracts from all 50 states available through the SEC’s EDGAR database. They matched each contract, including the state law under which it was contracted and any violations, as well as the outcome of those violations, to data from DealScan, which includes loan characteristics such as maturity date, yield, and whether collateral was put up, and to financial statement data from Compustat.

As with any loan, the terms of commercial contracts vary depending on the size of the loan, the length of the loan, whether the bank and firm have done business together before, and what the loan will be used for. But less obvious considerations also apply. For
example, there is an implicit covenant of good faith in all US commercial contracts, but interpretation of good faith—and the violation thereof—is left up to individual states. An alleged breach of good faith in one state may be quickly resolved in favor of the lender, while a lender who takes similar action in another state could face liability or a long litigation battle. Banks have more leverage than borrowers in choosing which state to contract in. Perhaps unsurprisingly, then, the researchers found that most debt contracts end up being governed by the two most pro-lender states: New York and Illinois. (The Mattels, McKessons, and Amgens of the world are exceptions: some borrowers have more leverage because of their financial strength, and other borrowers may be able to contract under more favorable law because of either their geographic location or because they are willing to pay higher yields.)

The researchers found that in cases where borrowers were able to negotiate contracts in California and other debtor-friendly states, they often put up more cash collateral, which is easier for lenders to seize if a firm defaults. They also found many more contract violations in pro-borrower states. But the repercussions are much more severe in pro-lender states: when these borrowers violate financial covenants in debt contracts, such as when a borrower fails to maintain a minimum level of equity, lenders are permitted to significantly alter the terms of the loan, hiking up interest rates or even calling the full loan due. As a result, those borrowers face restricted access to sources of cash and are forced to invest conservatively in the operations and growth of their businesses. The researchers did find that companies on the West Coast were more successful than others in getting lenders to agree to use California for their debt contracts but found that this came at a price: those firms that opted to contract in states with more borrower-friendly laws paid higher yields.

The researchers found evidence that states compete to attract debt contracts to their states—contract law can be lucrative for litigators, particularly in pro-lender states. New York is increasingly the winner: 20 years ago less than 50 percent of all commercial US debt contracts were written under New York State law. Today, about 70 percent are.

Notably, over 80 percent of the borrowers using law from pro-lender states such as New York and Illinois are located in another state such as Texas or Washington. That adds up to big litigation business: while a Texas bank that uses New York contract law can litigate over a breach of a debt contract in Texas, that litigation will require the expertise of New York lawyers. Indeed, the researchers found that the financial sector comprises a larger percent of overall GDP in New York and other lender-friendly states like Illinois and North Carolina, which also attract a good deal of debt contract business.

As for borrowers, the researchers caution them to look closely at governing states’ contract laws. When a firm must contract in a pro-lender state, it should assess the potential costs it might face if it were to violate the contract. And if a firm is successful in negotiating terms in a more borrower-friendly state, says Katz, “it should choose wisely, understanding that there is a tradeoff involved in selecting a borrower-friendly state—while the borrower may benefit in the event of a breach, the firm may also face collateral requirements and pay a higher yield.”
Unlocking the Value of Movable Assets

Mauricio Larrain is assistant professor of finance and economics at Columbia Business School.

Can a simple change to commercial laws in emerging economies spur business growth?

In the first 5 years after a country expands collateral lending laws, firms with a high percentage of movable assets:

- **2.4%** Increased leverage by 2.4%
- **3.5%** Invested 3.5% more in fixed assets
- **4%** Hired 4% more workers
- **5%** Saw productivity increase 5%
- **7%** Saw profitability increase 7%
- **9%** Saw sales increase 9%

Most small and medium businesses finance operations and expansions through bank loans. Almost all of these loans are secured, since banks typically only lend if borrowers have collateral to pledge in the event of a default. Secured lending works well in developed countries like the United States, where banks accept both movable assets—such as machinery, equipment, inventory, or accounts receivable—and immovable assets such as land and buildings as collateral. In emerging economies, however, banks usually accept only immovable assets as collateral.

The restrictions on using movable assets as collateral may have potentially large consequences for emerging economies. In theory, businesses should be able to use their assets not just for production and operations but also to pledge as collateral, creating debt capacity that allows firms to secure loans to expand—the benefits of which would filter into the larger economy in the form of increased productivity and employment.

Not only do emerging economies restrict the use of movable assets for secured lending, they lack collateral registries for movable assets that developed economies have implemented to support commercial lending. For example, in the United States, collateral registries are required as part of each lending transaction: every time firms pledge machinery or inventory as collateral, they must register the transaction, including the name of the firm, the name of the bank, and the type of asset. “Banks can easily see which assets have been pledged as collateral,” Professor Mauricio Larrain explains. The lack of registries for movable assets in many emerging economies means banks have no reliable means to learn if an asset is already pledged to another bank, so they are reluctant to accept movable assets as collateral. (These economies do have collateral registries for immovable assets.)

Larrain, working with Murillo Campello of Cornell University, wanted to see if he could quantify the effects of strengthening commercial lending laws on businesses and economies overall: what happens when countries expand the menu of pledgeable assets?

They used Romania as their test case: in 2000 Romania passed new laws that specifically allowed the use of movable assets in secured lending and introduced a state-of-the-art electronic registry for movable assets. The researchers looked at financial statements and related data from all firms operating in Romania. They tracked changes in firms’ leverage (total debt divided by assets, or the fraction of assets financed with debt) before and after the new laws were implemented, from 1996 to 2005, analyzing firms by whether they operate in an industry with primarily movable or immovable assets. For example, steel and iron manufacturing use a lot of movable machinery and equipment; industries such as precious metals and mining don’t (mining requires some machinery, but the bulk of assets are in the land). Firms in industries with primarily movable machinery experienced virtually all of the relevant changes, by significant measures, whereas firms in industries where the bulk of assets were immovable remained largely unchanged. For example, leverage in steel manufacturing increased significantly, while leverage in precious metals barely increased at all.

“By allowing firms to pledge movable assets, the reforms resulted in increased lending,” Larrain says. “Bankers could give bigger or more loans because they could now secure movable assets.” (The differences between sectors provides very strong evidence that the change in the laws prompted the increases, rather than other events or laws that went into effect during the same time period, which would have been expected to impact all types of sectors more or less equally.) The researchers also found that after the laws went into effect firms increased their investment in fixed assets, purchasing more machines, which in turn required hiring new employees to operate the machines (see sidebar).

Although weak collateral laws are still in effect in many emerging markets, nations are beginning to adapt. In 2007, China made significant changes to its commercial lending laws, and the World Bank has increasingly advocated for collateral framework reforms. “Firms want to grow and invest, but if they’re not able to get loans secured by movable assets, they are limited,” Larrain says. “We show that when a country improves the legal framework for movable assets, huge effects result, not only in credit expansion for firms but also for the economy as a whole.”

**MORE IDEAS**

Watch Larrain discuss related research on credit in this video from the Program for Financial Studies No Free Lunch series: bit.ly/cbs-ideas-credit

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Option for Control

CEOs use their options to fight proxy battles.

CEOs are keen to keep the perks that come with the job. One form of compensation often extended to senior managers is the option to buy shares at a set price, or strike price, any time before a set expiration date. If the strike price is $50 per share, the CEO only needs to wait until the option is in-the-money—for the market price to exceed the strike price—and can then turn around and sell the shares at the higher market price. Equity shares are often viewed as incentive pay to encourage senior managers to take actions that boost firm value or revenue.

But what do managers do with their options when corporate control is up for grabs? Proxy battles occur when stockholders attempt to solicit proxy votes (in which an agent that represents shareholders of a public corporation attends meetings and casts votes in their stead) to install a new board, threatening managers’ control. The gut response for most managers is to defend their control, as well as the status and benefits that come along with it, Professor Wei Jiang says.

Jiang points to Leonard Riggio, the former CEO of Barnes & Noble, who exercised his option when it was out-of-the-money; he was willing to pay the strike price, at $16.96, which was 13 percent more than market price, or more than 990,000 shares of the bookseller in 2010. Those options expired eight months later, so why did Riggio exercise them and essentially overpay for the shares? Barnes & Noble was facing a proxy battle with activist investor Ronald Burkle, and Riggio was one of the directors up for reelection in Barnes & Noble’s staggered board. With his option exercised, Riggio held a 29.9 percent stake in the company (Burkle was the second-largest shareholder with 19.2 percent) and gained himself an extra 1.7 percent of the votes—a crucial advantage in an expected close contest. (Why not buy on the open market at a lower price? Because additional buying, without pre-commitment, during an information-sensitive period could have subjected Riggio to heightened legal risk associated with insider trading.)

Riggio isn’t alone, according to new research from Jiang, who worked with Vyacheslav Fos, PhD ’09, of the University of Illinois to compare data from several public CEO databases, including data on CEO options packages vested from 1995 to early 2013. They found that CEOs generally distort their option-exercise plans when facing proxy battles. For example, when a proxy contest is looming, the rate at which CEOs sell their shares slows down by 80 percent—by keeping the shares, they also keep their votes.

Once you sell your shares, you’ve also sold your voting rights.”

“The first thing you do is stop selling shares when a proxy battle is on the horizon,” Jiang says. “Once you sell your shares, you’ve also sold your voting rights. CEOs also increase the rate at which they exercise their options and hold the resulting shares—by 50 to 60 percent.” If the CEO is truly desperate to gain votes in a close proxy battle, they’ll even exercise their option to acquire shares out-of-the-money.

Jiang says the evidence that these changes in CEO option-exercise behavior are indeed driven by proxy battles can be found by looking at the record date—the latest date by which shares can be acquired to earn voting rights. “If you acquire shares the day after the record date, sorry, you don’t get to vote in the proxy battle—the previous shareholder does,” Jiang says. “We find that CEOs completely stop exercising and selling shares and quintuple their rate of exercising and holding shares before the record date. After the record date, CEOs start to exercise and sell again and pretty much revert back to their normal exercise and hold rate.”

While previous research has indicated that overconfidence and insider trading may influence whether and how CEOs exercise options, Jiang points out that these findings identify a completely different motive, one that touches on the very core of leading a company: control. “CEOs do all kinds of things to keep their control when it’s under contest,” Jiang says, “especially when they have more benefits to defend.”
In his latest book, Charles Calomiris shows how unlikely political coalitions have contributed to banking crises in some countries and helped create stability in others.

**This is the first book that takes an in-depth look at the connection between politics and banking crises. What led you to the topic?**

Stephen Haber at Stanford and I spent the better part of the last 30 years working separately on issues of banking system risk. And that work kept revealing the impact of political influences on banking systems.

If you talk to anyone who’s ever run a bank, or any journalist who covers banking in depth, they’ll tell you that politics is hugely important. Yet in a lot of academic analyses, politics is little more than a footnote. We wanted to know—especially in light of the most recent crisis, but also of the last 35 years, in which over a hundred countries—including countries as different as England, Russia, Argentina, and Iceland—have experienced banking crises, why banking systems are sometimes dysfunctional and sometimes successful, and why some countries manage to make transitions from dysfunctional systems to functional ones.

And we wondered if politics was critical to understanding that. And so we began to examine various countries’ banking histories in light of their political histories: where a country’s constitution came from, how it was settled, what system of government it has. We saw that these factors might be the main drivers of banking function or dysfunction, both in terms of instability and scarce credit. Having researched this subject for three decades, we knew that this was more than plausible. It was the story.

**How did you test your theory?**

We argue that narrative historical analysis, disciplined by economic theory and political theory, can show how political systems work. And we claim that our book is the evidence—that by making a careful examination of historical events and using analytical tools, you can actually learn how politics affect banking outcomes.

We looked at Brazil, Canada, England, Mexico, and the United States. And from these five histories, going back between 200 and 400 years, we were able to understand how political regimes influence banking systems and the extent to which these systems are successful.
The contrasting histories of the United States and Canada are very surprising. While the United States has had 17 severe banking crises, Canada has had only two minor ones, most recently in 1839.

And that minor 1839 crisis was just a spill-over effect from the United States. Canada has never had a major panic, which can be explained by its political history.

While America was building a very decentralized national government, Canada was doing the opposite: its banking system was nationally chartered and centralized—unlike the United States, in which small, independent banks—unit banks—served local communities. Also, importantly, not every public official in Canada is elected; senators are appointed. This system, with all of its interesting checks and balances, tends to be relatively immune to populist influence. By populist influence, I’m referring to vested interests that get together within a democracy and try to push for rules that benefit them, such as small banks and rural populists, which joined forces to successfully prevent branching even within states in most of the country for two centuries. James Madison, one of our country’s founders, called these interests factions. Canada’s democracy was designed with constitutional “veto gates” that effectively prevent populist coalitions from taking control of its economic policy.

Another element that may surprise people is the extent to which unlikely coalitions have been responsible for much of the instability of the US banking system.

Populist factions have been the driver in the United States since the early 1800s. The identities of those factions have changed over time, but what happens is a group gets together with another group, and says, We can think of some banking rules that would be great for us. And it doesn’t matter that these rules will make the banking system a lot less stable. In our book, we call this the Game of Bank Bargains.

First we had the agrarian and unit bank coalition, beginning around 1810, which worked together to oppose branch banking. [The unit banks were small and independent, and didn’t want to compete with national branch banks.] That started to become less powerful as the number of people living in rural areas fell. But from about 1810 until 1994, the United States limited large-scale bank consolidation and branching across or within states.

This coalition began to crumble in the 1980s. Many influences contributed to that change. One was the savings and loan crisis. It meant that the federal government, particularly the Federal Deposit Insurance Corporation (FDIC), was facing a big bill because these small, fragile banks were failing apart, and who was going to pay? Out step a few bankers in states like Ohio and North Carolina and California, which allowed some in-state branching. These bankers told the FDIC they’d take some of this problem off their hands if the government would relax the rules and allow branching across state lines.

So the FDIC, the Fed, and the politicians started seeing the advantages. And once the regulators allowed acquisitions of smaller banks by their larger competitors, these growing banks became more powerful in the political process. . . . All of a sudden we had this new highly politicized process, with the Fed stuck in the middle.

That might sound like a good idea, but I don’t know any economists who think so. Because all of a sudden we had this new highly politicized process, with the Fed stuck in the middle. And organized urban activist groups were trying to define whether a bank was a good citizen, and I’m not joking when I say the main criterion was how much money the banks gave them. The banks actually wrote contracts with these community groups as an explicit quid pro quo for getting the groups to show up at the Fed hearings and testify in their favor. From 1992 to 2006, these banks passed $867 billion to these groups at the time they were seeking approval for pending mergers (the total amount passed to the groups during the period was about $2.5 trillion). The payments were mostly in the form of lending, which these groups funneled as subsidized credit, generally to poor people living in urban areas.

You resist making any specific policy recommendations. Why?

In a book arguing that political coalitions will decide the answers, not economists, it would be strange to make policy recommendations. Of course, I do often make policy recommendations in other work, but in doing so I recognize that good policy ideas eventually get adopted only if political seismic shifts happen that make the system amenable to it. That happened in Brazil in the late 1980s, when shifts in politics made the banking system much more successful. It happened in Mexico in the 1990s. It happened in the UK in the 1970s and 1980s. Fundamental political shifts can create windows of opportunity for good ideas. But what economists can’t do—and they shouldn’t fool themselves about it—is produce these political shifts.

As economists, we’re saying, Look, some countries know how to design a political system with appropriate checks and balances that produces a stable banking system with abundant credit. They’ve been doing it in Canada for 200 years, and maybe we could adapt some of their ideas. But the key question for the United States is whether we’ll see the political shifts that would make better policy possible. I’m not optimistic, but I’m not saying it can’t happen. I like to joke that on Mondays, Wednesdays, and Fridays, I write policy proposals. On Tuesdays, Thursdays, and Saturdays, I write about political economies and show how economists’ policy proposals are irrelevant. And on Sundays, I just pray.
To Reap Innovation’s Rewards, Team Up

Why does new technology spread so slowly in many industries?

Entrepreneurs and innovators are often surprised to find that new technologies tend to spread slowly within industries. In some cases, the reasons for resistance seem clear: doctors in private practice or small-scale farmers might not have the resources to invest in a new technology that won’t pay off in the short term. But why don’t large corporations in competitive industries rush to adopt new technologies that would give them an edge?

To explore this question, Professor Amit Khandelwal looked closely at soccer-ball manufacturing in Pakistan. Manufacturers in the city of Sialkot produce a total of about 30 million soccer balls a year—about 40 percent of world production. Working with David Atkin of Yale, Azam Chaudhry and Shamyla Chaudhry of the Lahore School of Economics, and Eric Verhoogen of Columbia University, Khandelwal found that virtually all 135 firms in the Sialkot cluster, whether large or small, produced their soccer balls in exactly the same way, making it an ideal setting for a study. “This is a place where everyone is doing the same tasks,” Khandelwal says. “If you come up with a technology that is beneficial, you can be reasonably sure that it will help every firm in the sector.”

Once the researchers had settled on an industry and location, they needed to introduce a new technology. Most production in Sialkot was carried out using manual labor, including the cutting of the 12 pentagons and 20 hexagons that are affixed to each soccer ball’s surface, shapes that are cut from rectangular sheets of rexine, an artificial leather. “We quickly discovered that the cutters were wasting expensive raw material,” Khandelwal says. “So we tried to come up with a way to reduce the waste, which would have obvious benefits for all of the firms.”

The researchers developed a pattern that would enable workers to cut more pentagons out of each sheet of rexine, which would turn save 1 percent of the manufacturing cost of each soccer ball.

That might not seem like a big savings, but the average profit margin among the Sialkot firms is about 8 percent, which means that a 1 percent cost savings translates to a 15 percent increase in profits. “This was a technology that didn’t cost much to adopt, and it had very clear benefits going forward,” Khandelwal says. “We were sure we had come up with something that was so beneficial that it would immediately start to spread.”

The researchers traveled to Pakistan to introduce their new technology, giving it to a set of 35 randomly selected firms at no cost. Fifteen months later, they found that only six of those firms were still using it. The researchers, puzzled by this outcome, interviewed the firms and found that resistance among workers was behind the widespread lack of adoption. The researchers hypothesized that this was a clear case of misaligned incentives: saving raw materials reduced costs and increased profits for the owners, but the cutters were paid per piece. At least initially, using the new pattern would slow down the cutters’ pace and lower their take-home pay.

“The workers had very little incentive to adopt this new technology unless the owner compensated them for their lost wages,” Khandelwal says. Once the researchers realized the dynamics that were in play, they conducted a second experiment in which workers at half of the original firms that received the technology were offered a one-time monetary incentive to demonstrate competence with the new cutting pattern. In theory, this would help the cutters increase their pace of production and preserve their pay. The researchers subsequently found widespread adoption of the new technology among the set of firms whose workers received the incentive.

“There are lots of potentially profitable technologies out there, and firms have to allow workers to share the benefits,” Khandelwal says. He and his research partners are continuing to track the Sialkot firms over the next several months to see if the new technology spreads to competitors. “This isn’t just about a particular set of companies in a developing country,” he adds. “Whenever firms want to move forward with a new technology, they should make sure that their incentives are aligned with those of their employees.”

Amit Khandelwal is the Gary Winnick and Martin Granoff Associate Professor of Business in the Finance and Economics Division and a Chazen Senior Scholar at Columbia Business School.
Dealing with the Hold-Up Problem

Investing in relationships and sharing information can help firms enforce informal contracts with suppliers.

In the 1920s, General Motors (GM) became embroiled in a dispute that is now known as a classic example of the hold-up problem. At the time, Fisher Body, a Detroit-based auto parts manufacturer, was an exclusive supplier for GM and the only vendor capable of manufacturing certain parts according to GM’s specifications. When demand for cars suddenly surged, Fisher Body was accused of “holding up” GM by increasing its prices. (Fisher Body denied the accusation.)

Firms today often face the hold-up problem. Perhaps the most common scenario is a firm that invests in a supplier, paying for new equipment or even a plant that will be used to manufacture a new product. After the investment has been made, the firm faces the risk of being held up by the supplier’s management or its striking workers, who may demand higher fees and wages.

Many studies have shown that firms, facing this risk, invest at a less-than-optimal level in their supplier. A firm that could have invested $10 million in new equipment might decide to invest only $5 million, sacrificing potentially greater returns, because the possibility of being held up decreases its incentives. “The firm has to go ahead and make its investment, without being able to contract with the supplier or the supplier’s workers in advance,” explains Professor Marina Halac, whose research often focuses on relationships between firms and workers. “It’s very hard, if not impossible, to write a contract that involves technology or equipment that hasn’t yet been built.”

This problem has typically been analyzed as it relates to single transactions: the firm makes its investment and gets its product. Using a game theory model, Halac studied how these forces play out in ongoing relationships. In an ongoing relationship, a firm continues to commission its suppliers and offers rewards, such as bonuses or better rates, for high performance. These rewards are often based on aspects of performance that are subjective and difficult to verify; therefore, they are typically enforced through informal or relational contracts. Once the firm and supplier are working together, the firm’s promises of future rewards are deemed credible by the suppliers because the relationship would break down if the firm reneged.

A firm that relies on relational contracts might find it optimal to share information about its profits, Halac’s model shows. That might seem counterintuitive, since a firm might want to hide its profits to reduce the risk that its suppliers will make greater demands. However, if a supplier can see that it is valuable to the firm, it is more likely to believe that the firm will honor its promises of future reward.

“If the relationship is valuable, the firm can’t just go out and find a different supplier or hire different workers to do the same work,” Halac says. “The supplier and its workers will see that, and want to try to earn those bonuses, because they believe the firm will honor its commitments.”

Relational contracts are common in industries from manufacturing to finance. Because these contracts are enforced by the value of the relationship, a firm’s promises of rewards increase in tandem with the relationship’s value, Halac points out. Therefore, she concludes, a firm may want to invest more in its suppliers to demonstrate that it values the supplier and that its promises are credible. “The inability to write formal contracts implies an inefficiency,” she says. “But this inefficiency actually helps alleviate another inefficiency: that of the firm’s upfront investment, tied to the hold-up problem.” In other words, if a firm relies on relational contracts, it has increased incentives to invest in the relationship at the start—and the efficiency of the entire firm-supplier relationship can be greater as a result.

If a firm relies on relational contracts, it has increased incentives to invest in the relationship at the start.
Rivalry’s Poor Returns

New research suggests that, in some settings, ethnic loyalties trump productivity.

In most countries, ethnic diversity goes hand in hand with limited economic growth: diverse nations are, on average, poorer than their less diverse neighbors. Virtually all the evidence for this comes from studies of public sector decision making and spending. Economists understand far less about the effect of diverse groups on productivity in the private sector.

Professor Jonas Hjort wanted to know: is there a different, more direct effect of ethnic diversity on individuals’ income? His new research studies production and human resources data from a large Kenyan flower farm, showing how productivity in the private sector can vary depending on relationships between ethnic groups.

On the farm, workers rotate through different teams. For each three-person team in a packing hall, one upstream worker distributes flowers downstream to a two-person team, which arranges flowers into bunches. Using more than two years of daily production data from the farm, including which of two ethnic groups each team member belonged to, Hjort could see when each worker was on a mixed team or a homogeneous team; by comparing the average productivity of the homogeneous and mixed teams at different points in time he was able to document how ethnic divisions affected productivity.

Horizontally mixed teams—in which the supplier was of a different ethnicity than one of the assemblers—were 5 percent less productive than homogenous teams, while vertically mixed groups—teams in which the supplier was a different ethnicity than both assemblers—were 8 percent less productive than homogeneous teams.

In short, the suppliers undersupplied members of the rival ethnic group on the production teams by distributing more flowers to teams made up of their same tribe. This decreased their own productivity as well as pay, but the upstream workers were willing to accept lower pay themselves in order to decrease the pay of team members of rival ethnic groups.

In late 2007, ethnic tensions flared up in Kenya in response to controversial national election results that pitted candidates from the two ethnic groups against each other. On the farm, the output gap between homogenous and diverse teams almost doubled during the initial post-election conflict. Hjort attributes this to an increase in discrimination fueled by the political controversy. “This demonstrates that the economic costs of ethnic diversity vary with the political environment and that conflict periods have real costs,” he says.

When, six weeks into the conflict period, the farm owner shifted from individual to team pay for assemblers, productivity increased for horizontally mixed teams—so much so that while production fell modestly in homogeneous and teams where the supplier was of a different ethnicity than both assemblers, overall productivity still edged up. “This changed the incentives of upstream workers: when the firm started basing pay on team output, there was no longer any reason for the supplier to misallocate flowers in mixed assembly teams, since both would get paid the same.” The firm was unable to entirely eliminate the crisis-spurred productivity slump, and Hjort found evidence that discrimination affected productivity long after the initial crisis died down.

Diverse groups need not doom an industry or a nation—the flower industry in Kenya has been successful for several decades in spite of ethnic strife in its ranks—but this research shows how they can dampen productivity. Interacting economically with individuals of other ethnic backgrounds is hard to avoid when urbanization and economic modernization bring larger groups of workers together. Firms would do well to anticipate ways in which they can help diverse workforces reduce or eliminate conflict.

Hjort emphasizes that these results are not definitive, and other research has shown that diversity is often quite good for productivity: Professor Katherine Phillips has shown that, in the United States, diverse teams are better at solving problems than homogeneous teams. Hjort speculates that one reason for his findings is that he looks at a simple production process where there’s little place for the potentially positive effects of diversity to surface. “If you’re trying to solve a complicated problem, it may be better to have people of different backgrounds,” he says. “As a starting point, we should expect the effects of ethnic diversity to depend on many circumstances.”
One new trend “... is more research on understanding gender, not just in the way we’ve traditionally done it.”

Featuring Professor Katherine Phillips

“Raining? Twitter Wants to Help Sell You an Umbrella.”

Quoting Professor Oded Netzer

“When a piece of music makes people feel powerful ... they feel more confident, even though they have no more control.”

“Financial Times July 24, 2014

“Marketplace June 12, 2014

“If previously we used to think more about different advertising for different people, now we’re starting to think different advertising for the same people at different states of their environment.”

Featuring Professor Adam Galinsky


bit.ly/cbs-ideas-powerofmusic

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