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March 11, 2019

Bureaucracy Is Coming

AT&T brings cost-cutting and corporate restructuring to HBO's realm 48

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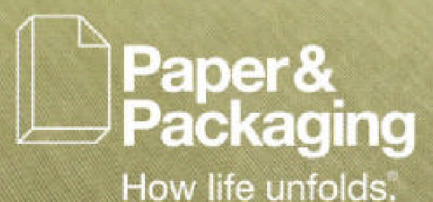

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◀ Loading up for delivery in Jucuapa

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PHOTOGRAPH BY FRED RAMOS FOR BLOOMBERG BUSINESSWEEK

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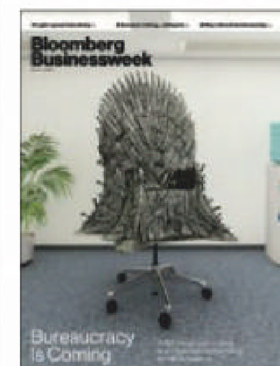

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IN BRIEF

By Benedikt Kammel

● The U.S. budget deficit widened to

$310b

in the first four months of the fiscal year, and the financial shortfall is set to grow even more in the coming years as the Republican tax cut package and increased spending for defense and other priorities boost government outlays.

● Carlos Ghosn was granted bail—set at 1 billion yen ($8.9 million)—by a Tokyo court and released from detention after more than 100 days. Ghosn said in a statement that accusations of financial misconduct are "meritless and unsubstantiated."

● "I don't feel the investigation is a witch hunt."

Former Trump White House lawyer Ty Cobb disputed his former boss's view of the Russia election meddling probe, instead calling special counsel Robert Mueller an "American hero."

● Bugatti unveiled a one-off supercar, La Voiture Noire. Priced at €11 million ($12.5 million), it will go to a buyer identified only as an "enthusiast" of the brand.

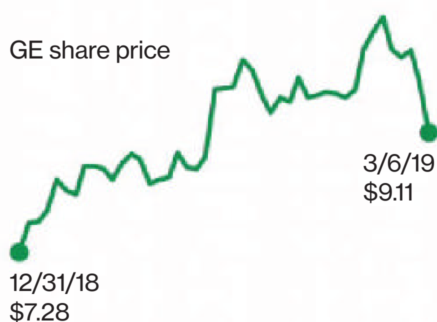
● Oxycontin maker Purdue Pharma is preparing for a possible bankruptcy filing as it faces hundreds of lawsuits over its role in the U.S. opioid epidemic, according to Reuters.

● Kylie Jenner, 21, is now the youngest person to become a billionaire with her own company.

Kylie Cosmetics had $360 million in sales last year, fueled by Jenner's 128 million Instagram followers.

● SpaceX's unmanned Crew Dragon capsule completed its mission of docking with the International Space Station. A manned flight is scheduled for July.

● GE's share price fell almost 8 percent on March 6, after CEO Larry Culp said the company would have negative industrial free cash flow this year—a sign of just how far GE has yet to go to fix its balance sheet.



● Volvo announced it would cap the top speed on all its cars at 180 kilometers per hour (112 mph) beginning in 2020, saying the move is part of a campaign to eliminate fatal accidents.

● Newmont Mining rejected an unsolicited bid from Barrick Gold, a potential

$17.8b

deal that would have created the world's largest gold producer.

● U.S. regulators approved Johnson & Johnson's nasal spray Spravato, a chemical cousin of ketamine, to treat depression.

● The worsening scandal facing Canadian Prime Minister Justin Trudeau cost him two members of his cabinet.

● Embattled pizza chain Papa John's International announced that founder John Schnatter will resign from its board.

● An HIV patient who received a stem-cell transplant has no sign of the virus, the second successful treatment of its kind.

GHOSN: TORU HANAI/BLOOMBERG; BUGATTI: STEFAN WERMUTH/BLOOMBERG; JENNER: RICK KERN/GETTY IMAGES/ULTA BEAUTY

▶ China's Growth Engine Sputters

Premier Li Keqiang holds the closing press conference of the National People's Congress, China's biggest political event of the year, on March 15. Li has already warned of a "tough economic battle ahead" as the country's growth shows signs of slowing (page 27).

▶ Tesla presents a new SUV on March 14. The Model Y will be slightly bigger and more expensive than Model 3 but will have a shorter range.

▶ Data on U.S. retail sales are due on March 11. The most recent report showed a surprise drop amid turmoil in financial markets and the government shutdown.

▶ Global central bankers and heads of financial institutions meet in Basel March 12-13 for a conference at the Bank of International Settlement.

▶ The Bank of Japan unveils its interest rate decision on March 15, with Governor Haruhiko Kuroda discussing his outlook at a press conference.

▶ China releases a slew of economic data on March 14, including the country's latest industrial production, fixed-asset investment, and retail sales figures.

▶ Spain celebrates the Las Fallas street festival from March 15 in Valencia, culminating in fireworks and the burning of giant puppets to usher in spring.

■ BLOOMBERG OPINION

Make the Report Public

● Americans need a full, transparent accounting of what happened during the 2016 presidential campaign

Michael Cohen's appearance before the House Committee on Oversight and Reform was surely a spectacle. The former personal lawyer to President Donald Trump, who had spent a decade lunging at anyone who threatened Trump's image or interests, marshaled his own attack on the president's character and behavior.

Cohen also documented his testimony with financial statements and canceled checks. This was meant to compensate for his own damaged credibility. But in revealing the hard evidence, he also demonstrated why it's essential that the most prominent presidential investigation—special counsel Robert Mueller's probe into Russian interference in the 2016 election—ultimately makes its evidence public.

There is no guarantee that this will happen. Regulations require Mueller to produce "a confidential report explaining the prosecution or declination decisions reached by the Special Counsel." He must submit his findings to Attorney General William Barr, and Barr must notify Congress of the report's completion. But the attorney general is not required to share its details. Nor is he compelled to make those findings public. In his confirmation hearings before the Senate, Barr conspicuously declined to promise he would, saying only that he would provide as much transparency as possible "consistent with the law."

That's not good enough. Russian sabotage of the 2016 election is a matter of vital public concern as well as national security. High-ranking members of the Trump campaign and Trump's former White House national security adviser have already pleaded guilty to crimes.

Of course, the special counsel must be careful not to speculate—or impugn the reputations of people who aren't charged with crimes. But Mueller should lay out in as detailed a manner as possible what his team has learned, regardless of whether or not that information results in criminal indictments. This becomes especially important if Mueller follows a U.S. Department of Justice rule that a sitting president cannot be indicted. If indictment is off the table and only information that leads to an indictment can be made public, then this president and all his successors in perpetuity essentially will be rendered unaccountable.

And the job of the U.S. Congress, as it embarks on what promises to be a long series of hearings having to do with President Trump's behavior and policies, will be that much harder.

The only way for the public to digest the complexity of the Russian attack, and for Congress to either act on that information or move on from it with confidence, is for the investigation's scope and implications to be clear. Four in five Americans say Mueller's full report should be released. Barr and Congress must see that it is. Ⓑ

Written by the Bloomberg Opinion editorial board

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It's Always Sunny in Private Equity

● Everything was glowing at the Davos of the private equity industry. Can anything really go wrong?

● By Jason Kelly

Berlin's Tegel Airport is a Cold War throwback, hailing from the time before travelers had to go through perfume shops, luxury stores, and immense food courts to board a flight. It's too small to comfortably serve the now hip and hopping capital of Germany—there aren't that many direct flights from the U.S.—but that doesn't stop the crowds from coming.

And each year in late February, Tegel welcomes a particularly exclusive set of visitors: Some fly in on private jets; others straggle in through connections, feeling ragged though still dressed in expensive jeans and Allbirds. They've booked as many as 20 back-to-back 30-minute meetings for each of the next four days, encounters that have been described as Wall Street speed dating. They've come to court the people controlling trillions of dollars in assets, who have also arrived in Berlin for a convention at the InterContinental Hotel. It's called SuperReturn International, a party of 2,500 attendees celebrating the private equity industry—the firms that invest in almost every big company you've ever heard of and are looking to own even more.

Collectively, private equity firms manage upwards of $3 trillion. Outback Steakhouse, the Weather Channel, and Neiman Marcus have all passed through their hands, entwining the industry in our everyday lives. Just one firm, Washington-based Carlyle Group LP, which has controlled everything from Hertz to AMC movie theaters, has a total of about 900,000 employees in all the companies it currently owns.

Other major players include Leon Black's Apollo Global Management LLC—which in 2017 raised a record-setting $24.7 billion for its ninth fund—KKR & Co., TPG Capital, and the biggest of them all, Blackstone Group. Blackstone expects to reach about $20 billion when it completes the first phase of capital-raising for its flagship fund in coming weeks. These firms raise money from insurance companies, pension funds, endowments, and other big investors. They amplify their buying power with borrowed money in the form of leveraged loans and high-yield bonds. They're well-paid for their work: typically "2 and 20"—a 2 percent annual management fee and 20 percent of any profits. They remake the purchased companies, sell them off to private buyers or take them public, and reap the rewards.

The firms' billionaire co-founders—Carlyle's David Rubenstein, KKR's Henry Kravis, Blackstone's Stephen Schwarzman, and others—have emerged as statesmen-philanthropists, counseling presidents, making huge contributions to universities (Kravis at Columbia Business School), setting up Rhodes scholarship-like programs in China (Schwarzman), and even renovating the Washington Monument (Rubenstein, who's also the host of *The David Rubenstein Show* on Bloomberg TV). They also invest in the sports world. In the NBA alone, the Philadelphia 76ers, Atlanta Hawks, Boston Celtics, Detroit Pistons, and Milwaukee Bucks are all owned by one or more private equity billionaires.

In Berlin, which was unseasonably sunny and warm for winter, the mood reflected all that success and influence. The main convention hall buzzed with interviews, as journalists sniffed out the deals being negotiated behind closed doors, in smaller sessions, at private dinners, and in the German capital's bars and nightclubs. The private equity firms were looking for new places to invest, but they were also wooing the endowments and institutional investors whose enormous pools of cash have made the industry one of the most important—if opaque—engines of the global economy.

What can possibly go wrong?

Pessimists point out that at the previous peak of the private equity industry, in 2007, buyouts regularly passed the $20 billion mark. The two biggest deals ever—Blackstone's buyout of Equity Office Properties Trust (an unmitigated success) and KKR and TPG's purchase of power company TXU (an abject failure)—were signed that year. And then the Great Recession set in. A few companies bought by private equity firms, such as Toys "R" Us and Claire's, collapsed from a combination of too much debt and the weak economy. But some buyouts survived the financial meltdown. In July 2007, as the crisis was beginning, Blackstone bought Hilton Hotels Corp. Today it stands as the most profitable buyout of all time, and Hilton is publicly traded.

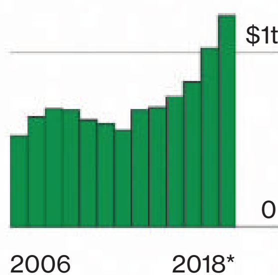
Successes like that ensured that private equity wouldn't fade away, and as the world economy recovered, the industry faced none of the wrath and regulation directed at others on Wall Street. Investment banks such as Goldman Sachs Group Inc. and JPMorgan Chase & Co., which help finance private equity deals, found themselves answering to lawmakers and subject to a host of new regulations; they were essentially barred from activities that put them in competition with their private equity clients (a fund run by Goldman had been one of the owners of TXU). Private equity firms stepped in to take up some of the work deemed too risky for banks in their newly scrutinized state, especially making sometimes risky loans to small and midsize companies. Blackstone, KKR, Carlyle, Apollo (page 21), and Ares Management all became publicly traded companies, accelerating expansions into businesses far beyond leveraged buyouts. More important, they continued to amass massive war chests from investors desperate for returns better than they were getting in public markets.

So what might cloud the sunny private equity environment? Brexit? The left wing of the Democratic Party? The Federal Reserve? At SuperReturn, one of the concerns was dry powder—that is, money investors had committed to private equity companies that they haven't used yet. As that amount moves toward $1.5 trillion, many worry that there aren't enough good deals to absorb it. A company that starts ▶

KATJA RIEDEL/SNOWMAD

Private Equity Casts a Long Shadow

Global private equity funds available to invest



Notable firms and what they oversee

Company	Employees†	Assets under management
Blackstone	450k	$472b
Brookfield	100	350
Apollo	325	280
Carlyle	900	216
KKR	695	195

*THROUGH JUNE 30. †WORKERS AT BUSINESSES IN COMPANY'S PORTFOLIO. DATA: PREQIN, BLOOMBERG REPORTING, COMPANY WEBSITES

◀ as a bargain could quickly become overpriced if managers eager to deploy their cash start bidding against one another.

Volatility can be a good thing—that touch of uncertainty disrupts equations and brings prices down. Ares Chief Executive Officer Michael Arougheti says his team was salivating in the wake of last year's Christmas Eve sell-off and wild market swings. "It was a little bit of an appetizer," he says. "Those are the types of markets where we do the best." But with stocks climbing steadily, opportunities can be scarce.

Confident dealmakers such as Joseph Baratta, global head of private equity at Blackstone, say they're willing to wait. "Certain sellers are going to have to realize that prices have come down," he says, adding that the industry has years to put its money to work—even if it can't right away, there's no real penalty for not investing.

But the private equity companies also have to sell, ideally after just a few years. Their profit model is built on unloading assets at the right time. One of the biggest recent mistakes among managers has been calling the top too soon. During an onstage conversation between Black and Rubenstein in Berlin, Apollo's founder conceded that his warning six years ago to sell "everything that's not nailed down" was a bit premature.

Interest rates are a critical factor, so the firms watch the Fed and other central banks carefully. When rates go up quickly the cost of borrowing soars, making deals more expensive. Coupled with higher purchase prices, that heightens the possibility of lower returns when the time comes to sell. Higher interest rates are "the one thing in the world that could upset what's going on today," says Brookfield Asset Management Inc. CEO Bruce Flatt, adding that he doesn't expect rates to rise much in the near term.

Then there's politics. Flatt oversees about $350 billion, much of it in real estate. The company controls swaths of Lower Manhattan and the Canary Wharf district in London. The latter has given him a front seat to Brexit. Flatt and his private equity brethren insist that Prime Minister Theresa May's drama will be only a speed bump. It hasn't yet dented their business in London.

Perhaps the most unpredictable political risk is the populist bent of the Democratic Party in Washington. That might bring private equity under political and regulatory scrutiny as never before. In 2007 lawmakers were riled, basically, at how much money the private equity tycoons made and how they benefited from the "carried interest" loophole, which allowed the bulk of their personal earnings to be taxed as capital gains, not ordinary income, resulting in huge savings. That flurry of unwanted attention led the industry to launch its first real lobbying effort, an all-out campaign that successfully beat back legislation to change the tax treatment.

When Mitt Romney, co-founder of private equity firm Bain Capital LP, ran for president in 2012, both his Republican primary rivals and ultimately his opponent for the Oval Office, President Barack Obama, pilloried him for his private equity past, casting him as a heartless, job-cutting fat cat.

Alarmed at being portrayed as vulture capitalists, the industry sought to soften its image during the long bull market. Its lobbying group changed its name from the Private Equity Growth Capital Council to the American Investment Council. The AIC goes from lawmaker to lawmaker in the halls of Congress to emphasize the number of employees at private-equity-backed companies. Private equity chiefs have also begun talking about their various "stakeholders," building teams to ensure they're working not just with investors, but also with communities, regulators, and lawmakers. The companies' leaders have historically avoided being summoned to testify on Capitol Hill. But the time may be coming for a public inquisition. Democratic presidential candidate and Massachusetts Senator Elizabeth Warren was among those who publicly, and successfully, pressed KKR and Bain to front $20 million for severance to former employees of Toys "R" Us, which had gone bankrupt, in part, because of debt incurred in the 2005 leveraged buyout. Many in the industry fear the concession could create a precedent, forcing them to set aside money in future deals for such contingencies, crimping profits.

Can private equity avoid the pitchforks? It is, to say the least, not a popular time to be a Wall Street billionaire. The amount of money they're pulling in remains astounding. Schwarzman took home $567.8 million in dividends and compensation in 2018. And that was a bit of a comedown. In 2017 he earned $786.5 million.

Still, firms believe they can see enough of the political horizon to prepare for and ride out turbulence. The industry seems to be ready for everything—everything that can be expected, that is. A black cloud can appear, or a black swan. It's always sunny weather—until it's not. Ⓑ

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Small Businesses, Big Problems

Financial institutions and corporations are bracing for Brexit, but the U.K.'s tiny outfits aren't prepared

Julianne Ponan doesn't run a gigantic corporation, but she hasn't been doing badly. When she bought Creative Nature, based in Surrey, about seven years ago, it was a money-losing maker of candles, among other things. In 2018 the company, which now produces and exports snacks for the booming health-and-wellness market around the world, about doubled its revenue from the year before, to £1.3 million ($1.7 million). The Federation of Small Businesses in the U.K. recognized Ponan with a best retail business award last year for her company's skill at turning ingredients from as far away as New Zealand into treats, dietary supplements, and cake mixes sold in Britain, Europe, and elsewhere. Ponan found the U.K.—with its banking system and easy access to larger export markets—to be the perfect hub.

With Brexit on the horizon, Creative Nature and hundreds of other small and midsize businesses must deal with an impending quagmire of financial and bureaucratic regulations, the kinds of delays that disrupt cash flow. The divorce from the European Union could cause liquidity problems and lead to innumerable loan defaults that some U.K.-based banks are trying to prevent, small business by small business.

A much-feared hard Brexit, in which the U.K. leaves the EU without any agreement for the movement of people and goods, could erect trade barriers overnight. Things may be a little better with the softer Brexit that Prime Minister Theresa May is trying to negotiate with Brussels (page 44). That would provide for a two-year transition period. Still, as part of the EU, the U.K. enjoys relatively easy trade with 69 countries, and so far it's won post-Brexit agreements with only seven of those. "For small businesses, it's very difficult, because we can't just stop sending over goods," Ponan says. "I still feel we made the right decision of setting up in the U.K., but it's going to be a difficult time ahead."

If Parliament doesn't approve May's new deal, and if Brexit isn't delayed, export and import businesses will find themselves trading with Europe on March 29 under World Trade Organization rules. The U.K.'s 5.6 million small and midsize businesses, which employ 16.3 million people and generated $2.6 trillion in revenue in 2018, will most likely incur higher costs, delays, and a raft of new documentation requirements. "Small and medium enterprises have been relying too much on the assumptions that everything will be OK," says Mike Slevin, who leads the Brexit program for the commercial bank at Royal Bank of Scotland Group Plc, historically the U.K.'s largest provider for small and medium-size businesses. "The majority hasn't started to put contingency plans in action and execute them."

"If I could move my business somewhere else at zero costs, I would do it tomorrow," says Giambattista La Torre, general manager of an Italian boutique hotel and restaurant in Covent Garden that imports wine, salami, and other goods from Puglia. "Some have suggested to stockpile goods, but rarely does a restaurant in the heart of London have the space for that. We are living from one day to the next."

According to Banco Santander SA's U.K. unit, about 90 percent of small and midsize enterprises "have only traded with Europe, and therefore they don't know about issues like rules of origin," says John Carroll, head of product management and international business. With a hard Brexit, exporters will need rules-of-origin certificates to determine the duties and tariffs that products will incur as they cross borders. It remains unclear which authorities will issue the documents—those in the U.K., the EU, or each specific country on the Continent. "We are pointing them in the direction of local chambers to see how they can get help," Carroll says.

Banks such as Santander and RBS have been coaching businesses to make sure they have the right papers in place by the end of March. "We had one seminar that was focused on about 40 businesses at the smaller end, and there was a real lack of knowledge," Carroll says. Some banks have also asked the government to put aside emergency funds ▶

Edited by James E. Ellis and Howard Chua-Eoan

PHOTOGRAPH BY HARRY MITCHELL FOR BLOOMBERG BUSINESSWEEK

“I still feel we made the right decision of setting up in the U.K., but it’s going to be a difficult time ahead,” Ponan says

◀ to backstop small businesses in case of chaos, according to a banker involved in the discussions.

Her Majesty's Revenue & Customs, the U.K.'s tax, payments, and customs authority, has already issued complicated import and export guidelines, including a recommendation to hire agents to help in case of a no-deal Brexit. Many companies, already suffering from anemic growth, aren't willing to take on more costs. "We will cross that bridge when we get to it," La Torre says. "We are not going to get ahead of ourselves and assuming extra costs unless strictly necessary."

Ponan is trying her best to bolster her organic-snacks business against all the uncertainty. "We are holding a lot more stock than what we would normally hold," she says. "We had to take more space in terms of external warehousing. But of course, with perishable products, you don't want to hold too much." Companies like hers usually set aside some funds. But that cash was meant to be invested to increase exports, not for crises such as Brexit. "Will goods be stopped at the borders?" Ponan asks. "Will there be limbo? We need to know if there will be deals in place that we can make use of." —*Stefania Spezzati and Charlie Devereux*

THE BOTTOM LINE Many of the U.K.'s 5.6 million small and midsize enterprises aren't ready for the delays, new documentation, and liquidity problems that may arise when the country leaves the EU.

When the Hand That Feeds You Bites Back

● Dolce & Gabbana offended Chinese women. The furor on the mainland, where luxe brands rule, hasn't abated

From the red carpets of Hollywood award shows to the catwalks of Paris and Milan, where throngs of photographers chase Instagram-worthy shots of actors, pop stars, and style bloggers sporting the latest look, winter is the season when Gucci, Louis Vuitton, Versace, and other luxury brands make a big business of being in the spotlight.

One name has been notably absent from this year's glamour parade: Dolce & Gabbana. The iconic Italian brand is still struggling to overcome a backlash that erupted in November over a tone-deaf marketing video and derogatory comments from co-founder Stefano Gabbana about the Chinese. What's followed is a boycott on the mainland that threatens to snuff out one of fashion's biggest names.

Online retailers such as Alibaba's TMall and Richemont SA's Yoox Net-a-Porter still haven't reintroduced Dolce & Gabbana on their Chinese sites; Lane Crawford and other high-end department stores pulled the brand's wares from their stores on the mainland; and the spring issues of influential local magazines like *Vogue China* feature no D&G ads or products.

The damage hasn't been limited to China. At both the Golden Globes and the Oscars, where in previous years Sarah Jessica Parker, Scarlett Johansson, and other top talent stepped out in opulent Dolce & Gabbana gowns, no A-lister dared to risk alienating fans by donning the label. "They basically offended an entire country," says Leaf Greener, a stylist and fashion consultant based in Shanghai and Paris. "Who wants to associate with that?"

With Chinese shoppers estimated to account for at least a third of luxury sales and two-thirds of the

◀ The video of a Chinese model struggling to eat pizza sparked outrage

YOUTUBE

industry's growth, the enduring controversy in this key market may pose an existential threat to closely held Dolce & Gabbana. The company doesn't disclose sales, but an Italian filing showed revenue of €1.3 billion ($1.47 billion) for the year ended March 2018, roughly twice the haul of rival Versace SpA.

Gabbana and his partner Domenico Dolce founded the brand in 1985 with a unique Italian blend—look-at-me dresses bursting with leopard prints and embroidered flowers, skimpy men's underwear, and advertising campaigns that celebrated a cartoonish version of their country: shouting families, nuns, and sexed-up ingénues arranged in kitschy restaurants, or Sicilian street scenes that looked straight out of *The Godfather*.

The duo has weathered—and even seemed to relish—previous controversies. In 2017, Gabbana punched back at detractors of its "Thin & Gorgeous" sneakers as "fat and full of cholesterol." The company even sold its own $245 "#Boycott D&G" T-shirts to lambaste Americans who denounced it for dressing first lady Melania Trump, a longtime fan. The pair did have to walk back remarks they made criticizing gay families to an Italian magazine in 2015, but that damage pales in comparison with the China meltdown. "It's gotten political now," Greener says. "I don't think people are going to forget."

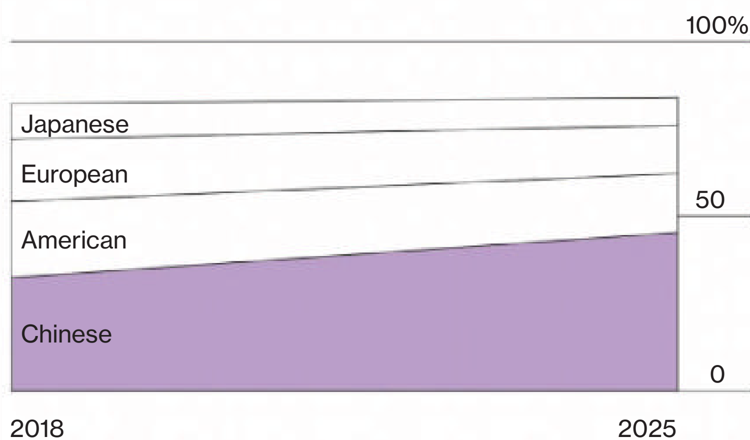
Before a planned November runway show in Shanghai, Dolce & Gabbana posted a series of videos featuring a Chinese model awkwardly attempting to eat cannoli, pizza, and other Italian foods with chopsticks. The videos alone might have been forgiven as a crude joke made by a company known for poking fun at its own culture, but leaked messages by Gabbana insulting Chinese people and defending the video provoked a social media firestorm. Making matters worse, the company initially claimed it had been hacked and took days to remove the videos from its Instagram accounts and apologize. Amid the uproar, it was forced to hastily postpone the show.

Three months later, "I still am not seeing anyone wear Dolce," says Bryanboy, a Filipino fashion influencer and style blogger. While Burberry, Gucci, and Prada have also faced anger for releasing products seen as crude or culturally insensitive, those brands responded quickly to quell any controversy. "This was on another level," Bryanboy says.

At Dolce & Gabbana's February show in Milan, the front row was missing names like Stevie Wonder and Monica Bellucci, who've graced previous shows. *Vogue China*'s editor-in-chief, Angelica Cheung, also sat out the event, as did many of the bloggers, stylists, and top models, whose online followers are key to attracting buyers for a collection. As a result, the show garnered only about

China's Expensive Appetites

Share of global personal luxury goods market, by consumers' nationality



2018 FIGURES ARE ESTIMATES; 2025 FIGURES ARE BAIN FORECASTS. DATA: BAIN & CO.

$4.2 million worth of exposure on social media and in the press, vs. $12.2 million the year before, estimates fashion consultant Launchmetrics. The number of articles and posts about the show fell to a tenth of their previous level.

"The influencer economy is so powerful, and they are increasingly demanding that brands reflect their lifestyle and values," says Elspeth Cheung, a brand valuation director at Kantar Millward Brown's BrandZ unit. Cheung says young Chinese shoppers have become more and more proud of their country's recent prosperity. "Brands need to make sure that their communication either supports or at least doesn't go against the China dream," she says.

In the scandal's wake, social media comments have quipped that D&G now stands for "Dead and Gone." With the brand still absent from key wholesalers, e-commerce, and magazines in China, the misstep has become the luxury industry's most notorious incident since Christian Dior designer John Galliano was filmed delivering an anti-Semitic rant in a Paris bar in 2012. Dior quickly fired Galliano and replaced him with another designer, but the way out for Dolce & Gabbana is less clear—Gabbana's name is on the door, and he owns half of the company.

On a recent Sunday in Beijing, some shoppers had returned to the Dolce & Gabbana corner at the SKP luxury mall. While a few said they didn't care about the scandal, most of their peers preferred to line up to enter the nearby shops of rivals Louis Vuitton and Gucci.

Xia Li, a 40-year-old entrepreneur, says some Chinese customers will return to the brand once the memory of the incident fades, but she hopes the majority will resist: "They're not insulting us and making profits from us at the same time." *—Robert Williams, with Claire Che and Daniela Wei*

THE BOTTOM LINE Chinese consumers account for at least a third of global luxury sales. Backlash over some culturally insensitive ads has put Dolce & Gabbana on the outs with these key shoppers.

"It's gotten political now. I don't think people are going to forget"

The Race To Put the Internet In Orbit

● OneWeb has sent the first of its small signal-beaming satellites into space

Richard Branson had snuck off into the corner of the room to buy a peaceful moment, but his scraggly blond mane and thick goatee are the opposite of a disguise. One by one, people approach, apologize for approaching, then rotate their bodies into a hug as they raise their phones for their obligatory photos. Branson can't escape the steady stream of selfie takers, even at another company's rocket launch.

The other company is OneWeb, a satellite maker that's raised more than $2 billion from Branson's Virgin Group and the likes of SoftBank, Coca-Cola, and Airbus to build a "space internet." The idea is to fire an estimated 1,980 satellites into orbit to beam signals below. On Feb. 27, Branson was one of a couple hundred spectators who joined OneWeb founder Greg Wyler at the edge of the Amazon rainforest in Kourou, French Guiana, to watch the first six satellites leave Earth.

Wyler started OneWeb in 2012 and persuaded Branson to help bankroll it soon after, when the two were palling around on the British mogul's Necker Island. While satellites have been used to relay internet data for decades, the existing services are slow and expensive, because the conventional sedan-size models are unwieldy, run on outdated technology, and orbit the Earth at about 18,500 miles up, making coverage spotty. Wyler's pitch: Use more advanced gear to put thousands of cheaper satellites the size of washing machines into orbit 750 miles above the planet. In theory, the larger network of satellites should cover everybody, including the more than 3 billion people who can't yet be reached by high-speed fiber optics.

The OneWeb founder promised to make low-cost antennas that could be placed on homes, schools, hospitals, and emergency services outposts and pull data down at an incredible clip. For the first time, the world would be surrounded by a type of computing shell that would give a Rwandan high school access to the same information and tools as a school in Mountain View, Calif., and make it possible for a climber to fill her Instagram feed from atop Mount Everest.

The sheer expense of Wyler's project, including some pricier-than-expected technology, as well as some skeptical investors, have forced him to massage his ambitions for now. In the revised plan, the recently launched satellites will be joined by about 650 more over the next couple years. This first fleet will be aimed at making money by delivering high-speed internet to airplanes, cruise ships, and governments willing to pay to modernize their infrastructure.

Wyler says he hopes such customers will cover the costs of the global network, which will total billions of dollars more than he's already raised. "This is the world's largest civilian space project," he says while driving around the grounds of the Guiana Space Centre. "We are not funded by NASA or a government, and it can't run at a loss. We want to bring the internet to the poorest people in the world and have built the world's most expensive system to do it, and the expansion of the service needs to pay for itself." Branson, flanking Wyler, insists with characteristic optimism that the era of billionaires like him losing money on space ventures is over. "I think the time has come for space companies to succeed," he says.

Companies with names like Telesat and LeoSat have similar plans for internet-beaming satellite constellations, but Wyler's biggest competition has been Elon Musk, chief executive officer of SpaceX and Tesla Inc. and a Branson frenemy. (The two play-fight about their respective rocketry achievements while chilling together on Branson's island.) SpaceX sent two space internet test systems into orbit last year, and its battle with OneWeb is fraught with extra helpings of bitterness and enmity. "My issue with SpaceX is personal," Wyler says.

He and Musk were once friends who slept over at each other's houses while planning to build OneWeb together with financial help from Google. In 2014, Wyler spent months laying out his ideas for Musk, only to find one day that SpaceX had decided to build a similar project of its own and had taken Google on as a financial backer. SpaceX declined to comment for this story.

The OneWeb founder says he still has a huge technological lead, citing the low-cost antennas

Edited by Jeff Muskus

▲ A rocket carrying the first six OneWeb satellites lifts off from the Guiana Space Centre, near Kourou, on Feb. 27

COURTESY ONEWEB

from a company he's invested in called Wafer. "I haven't found any other technology that is close," he says. "It's at least one to three years ahead of everything else." OneWeb also secured valuable wireless spectrum rights for its service well ahead of its rivals. If the satellites from the recent launch work as billed, the company will hold on to those broadcast frequencies for decades. Competitors will have to find spectrum of their own and persuade the United Nations' International Telecommunication Union that they won't interfere with OneWeb's service.

French Guiana provides an all-too-symbolic backdrop for Wyler and Branson's quest to bring the trappings of modernity to poor and remote locales. The economy of the French territory, located in northeastern South America, is stuck in neutral, with limited farming and a heavy reliance on imports and subsidies from its colonizer. Many people are as likely to get around by canoe as they are on the dilapidated roads. Even the beaches struggle to lure tourists because of their biting sand fleas and murky, mud-colored waters. And the rainforests, which carry a hearty helping of yellow fever, offer more adventure than most outsiders seek.

Built in the 1960s, the Guiana Space Centre presents a study in contradictions with its surroundings. Its home city of Kourou is about an hour's drive north of the capital, Cayenne, and was once home to the notoriously brutal Devil's Island penal colony. To reach the spaceport, you travel on two-lane highways past densely packed rainforest and modest, brightly colored houses with tin roofs. Billboards along the highways alternate between plugs for potato chips and satellites. The facility takes up 266 square miles, employs thousands of people, and serves as the launch site for rockets from Europe. Arianespace, a European aerospace company, operates three launchpads: two for its own rockets, and one for a version of the Russian Soyuz, which carried the OneWeb satellites.

From a physics standpoint, Kourou has a lot going for it. It's on the coast just 300 miles north of the equator, which means the rockets receive an added boost—the Earth spins fastest at its midpoint—and that most debris from a mishap is ▶

◀ likely to fall into the ocean. In a typical year, Arianespace will send up about one rocket a month, although keeping up with OneWeb will require it to work faster. OneWeb has contracted with the company for more than 20 launches. By October, Wyler expects to witness one every three weeks or so, with each rocket carrying about 34 OneWeb satellites. If he's right, he'll quickly break by a wide margin the record number of satellites launched by a single company.

Launch days remain a special occasion here, even though they've been taking place for decades. Before blastoff, the French Foreign Legion clears the forest and seas and provides security on-site. As the event draws near, hundreds of people, including men in uniform and women in bright sundresses, arrive at a theater attached to the glass-enclosed mission control while an announcer delivers play-by-play commentary. Branson found himself taking selfies near a concession stand doling out fruit juices, finger sandwiches, and desserts.

When the launch happens, everyone runs out to a balcony to watch as a giant rocket streaks across the sky and to listen as its thunderous rumble cuts through the humid air. The event has the feel of game day in a small Texas town that runs on football.

For Europe, Kourou is the ideal place to launch rockets. All the inherent danger has been offloaded to a faraway land, and the aerospace operations dominate the economy, providing Arianespace and other space agency bodies with unequaled influence. This can embitter locals who've been left out. Unemployment rates of 20 percent or higher are common in French Guiana, schools are underfunded, and rates of poverty and murder are high. Protesters in 2017 blocked access to the spaceport and disrupted a launch as they voiced their concerns about the poor economic conditions.

Wyler has spent the past 20 years trying to improve the lot of the less fortunate and bring more economic balance to overlooked areas. He made millions as a tech entrepreneur and investor, then went to Rwanda after the genocide there to lay fiber-optic cables and modernize the country's infrastructure. Later, he started a company called O3b (as in "other three billion") to create a satellite network that could deliver high-speed internet access to islands and nations near the equator. OneWeb is both an admission that these past projects didn't work out as well as planned and an attempt to correct their technological shortcomings. "There is a lot of hope in this rocket," Wyler says on launch day.

As with the site itself, the optics of Wyler and Branson's own lifestyles can appear at odds with deeper societal issues. Both men flew into French Guiana on their private jets and flew off after the launch to their island getaway homes. It's not crazy for skeptics to wonder whether OneWeb's wealthy backers will make sure the service lives up to its original vision. Wyler could end up with merely a zippy internet system for the traveling elite.

"We want to bring the internet to the poorest people in the world and have built the world's most expensive system to do it"

Without question, though, it's only through force of will that Wyler and Branson have brought this project and the promise it carries as far as they have. Huge satellite networks have been notoriously bad investments. Wyler had to coax investors from around the world to make OneWeb look and feel like a global effort, and he's had to fight against Musk's outsize persona in a complex public-relations war. "There have been a lot of people betting we fail," he says. He expects a limited version of the OneWeb service to come online by the end of 2019, more than a year behind its original schedule, and to roll it out to more customers throughout 2020. "I've been at this since 2012 and seen it all clearly in my head since then," he says. "I've communicated the vision, and now people are starting to believe." —*Ashlee Vance*

THE BOTTOM LINE Wyler's ambitious space internet plans, even scaled back, may be difficult to fund to fruition unless he can sign up deep-pocketed industries.

Seeds of a Better Business

● Farmers Business Network offers cheaper alternatives to Bayer and DowDuPont

Farmers don't have a reputation for skewing to the political left, but just get them talking about seeds. At an expo center on the outskirts of Memphis one gray February day, several dozen of them make for a receptive audience as Charles Baron expounds over plates of scrambled eggs and home fries on the inequities of Big Ag. "On either side of your family business are these massive oligopolies," the 35-year-old says, gesturing toward a PowerPoint slide bearing the logos of agrichemical companies and commodities traders. "You, as growers, should have the power in the industry. There's no reason you should have the lowest incomes when

● U.S. farmers' spending on seeds last year totaled

$22b

you do all the work and take all the risk." Around the room, baseball caps wag in agreement.

Baron is co-founder of Farmers Business Network Inc. (FBN), a five-year-old startup that says it can do for corn and soybean seed what Warby Parker has done for eyewear. For most farmers of such grains, genetically modified seeds with patent-protected advantages (weed resistance, insect immunity) have become the largest variable expense–and one over which they have little control given consolidation in the market. U.S. farmers spent $22 billion on seeds last year, 35 percent more than they did in 2010, and that increase can't be explained by additional acreage. The product is sold through local dealers or retailers–almost never online–and prices typically aren't posted.

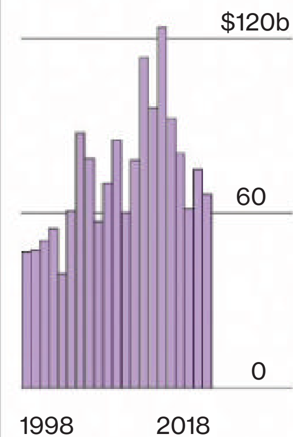
Since the mid-1990s, farmers have had to buy patented seeds from the likes of Monsanto (now owned by Bayer AG) and DowDuPont Inc. to stay competitive with their neighbors. Today, those two companies account for 72 percent of corn and soybean seed sales in the U.S., according to FBN data, and even most independent seed companies have to license the same patented GMO traits for their competing products. "The trait originators get to set the rules," Baron says. His solution is non-GMO seed that his company believes can compete with the brand names, thanks to advances in breeding, chemical solutions, and farming techniques.

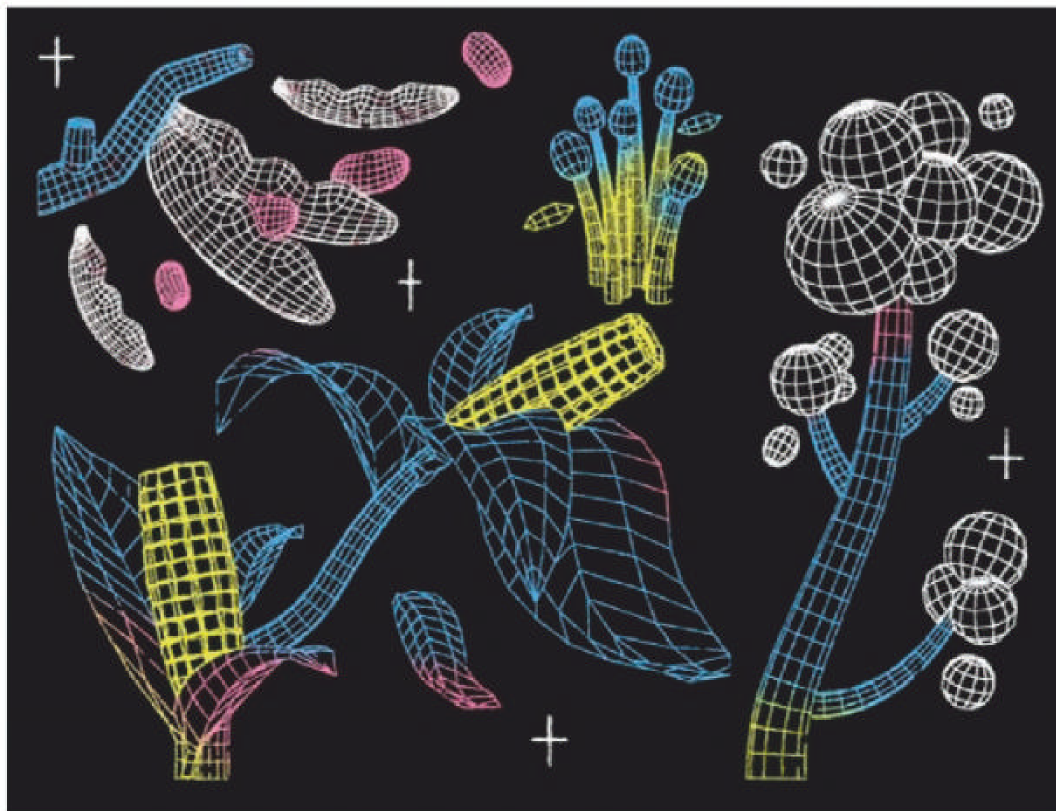
To keep prices down, Baron's company is developing seed directly with plant breeders, cutting out a string of middlemen. Today, FBN's non-GMO corn seed, sold under the brand name F2F Genetics Network, ships directly to farmers for $115 a bag, compared with an average price of $270 a bag for GMO seeds. But FBN isn't opposed to GMO products. As Bayer's and DowDuPont's patents begin to expire over the next few years (a lucrative one just did), Baron says he'll incorporate those GMO traits into FBN products, too.

"We're glad to see new entrants investing in agriculture technology and creating more tools than ever for farmers," Bayer said in an email. DowDuPont didn't respond to a request for comment.

FBN, which has raised almost $200 million from investors including Temasek, Kleiner Perkins, and GV (formerly Google Ventures), started out as a sort of Glassdoor Inc. for farmers: Members upload their own farm data in return for access to aggregate information from the rest of the network, which numbers almost 8,000 farms across the country covering acreage the size of Pennsylvania. The wealth of data has added some rare transparency to the seed industry. Farmers can now see they're paying vastly different prices for the same product, with some laying out twice as much as others depending on scale, location, haggling skills, and other factors. They can also check how well a variety performs across hundreds of real farms. Baron, previously a program manager at Google, and his co-founder, Kleiner Perkins partner Amol Desphande, got the idea after talking to a group of farmers who were working on a data-sharing project.

Farmers need every advantage they can get. Despite rising productivity, U.S. farm income has slid 46 percent in the past five years as worldwide gluts in commodities such as corn and soy have driven prices down. FBN members say the site's pricing data have given them new negotiating power. As many as half of U.S. seed retailers expected FBN to hurt their business last year, according to Bank of America Corp.





Of course, Bayer's and DowDuPont's seed offerings can command high prices because they work. Many of the farmers gathered in Memphis say they'll seriously consider switching to an unknown seed offering only if it performs well in the region this year. Some aren't waiting. Trent Dabbs, whose family farms 3,000 acres in Arkansas, is planting the majority of this spring's corn acreage with F2F Genetics Network seed. That will cut his seed bill by more than half and allow him to sell his grain at a premium because it isn't genetically modified. "When you get the seed price right upfront and you see what you can save," Dabbs says, "that's a big deal to me." *—Elizabeth Dunn*

THE BOTTOM LINE FBN has raised almost $200 million to help decode the pricing mysteries of the seed business. It now seeks to sell cheaper, mostly non-GMO seeds to farmers.

ILLUSTRATION BY JOE MELHUISH. DATA: U.S. DEPARTMENT OF AGRICULTURE

ILLUSTRATION BY WOSHIBAI

Even the IPOs Are Old Now

As startups delay going public and mature companies diversify, is the market mellowing?

Certain adjectives come to mind in describing the U.S. stock market. Sprawling. Resilient. Diverse. Here's another you probably haven't thought of: old. Thanks to an absence of new entrants, the average age of companies listed on U.S. exchanges has been steadily rising for three decades. Now it's 20 years, almost twice the average in 1997 during the dot-com craze.

The market won't be getting much younger this year. Six unicorn tech giants, including ride-sharing network Uber Technologies Inc. and online home-rental service Airbnb Inc., are preparing to go public at an average age that's four years older than what was typical two decades ago.

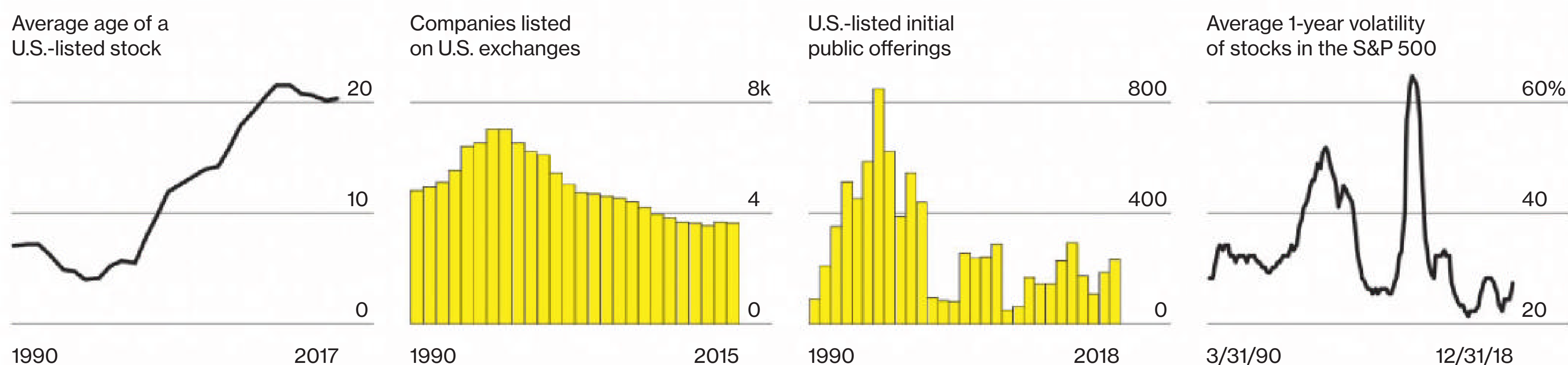
What happens when a population ages? Opinions abound in the stock market. Some say investors miss out. Fund managers find it harder to build portfolios that truly reflect what's happening in the economy as new companies stay private. Another theory compares stocks to people and says both slow down and eschew risk. And while that notion seemed crazy amid December's equity earthquake, a case can be made that a mature market is less volatile.

Aging implies durability. "That's the key here: Older firms, larger firms, have a better track record because you became large," says René Stulz, the Everett D. Reese Chair of Banking and Monetary Economics at Ohio State University. "You have more of a cushion against the impact of bad news. You might be diversified, you might be operating across different countries, different parts of the country. All of that merely tends toward having less volatility."

The trend toward fewer and older companies has been developing for years. Companies are staying private for longer, and initial public offerings—once a rite of passage for a successful startup—get done later. Once companies do list, they quickly become prey. In a market dominated by megacaps, behemoths swallow up competitors with ease. "What's happened in the last 20 years? It's been essentially a dearth of IPOs and a continued drumbeat of mergers and acquisitions," says Michael Mauboussin, director of research at BlueMountain Capital Management.

A continuing mystery for stock investors has been the almost unprecedented calm that's

Edited by Pat Regnier



prevailed in markets for about five years, which is usually ascribed to central banks' efforts to support steady growth after the financial crisis. The tie between old age and low volatility is unproven, but theorists such as Stulz say research exploring the connection is warranted. "When you think of volatility, there are two pieces to it," he says. There's certainly plenty of systemic, or marketwide, turbulence out there. That's a function of lots of different companies moving in unison—say, when there's news about trade tensions between the U.S. and China. But then there's what's known as idiosyncratic volatility, or the ups and downs that are particular to just one company. It's become rarer for the average volatility of individual stocks in any given year to exceed 30 percent, Bloomberg data show. From 1990 to 2003, that level generally defined the bottom of the range. "Firms that are older and larger have much less idiosyncratic volatility," Stulz says.

Conglomeration may be contributing to the decline in volatility, as companies behave more like indexes of multiple stocks. Amazon.com Inc. isn't just an online marketplace—it's also a grocery chain, a cloud-services company, and a media powerhouse. Walmart Inc. owns multiple brands, and Google parent Alphabet Inc. is way more than a search engine. "You have a bunch of individual companies, each have their expected return, each have their own volatility," says Joe Mallen, chief investment officer at Helios Quantitative Research. "What happens when you aggregate those into one company? The expected return becomes the average of all of the parts, but the volatility decreases. You're just building a portfolio."

If you were trying to design a buyer optimized for today's lumbering giants, you would come up with index-tracking products such as exchange-traded funds. According to some analysts, it's no surprise that as the number of companies shrank, the number of ETFs ballooned. What started in 1993 with SPY, the ETF that tracks the S&P 500, has grown into an almost $4 trillion industry. Many retail and institutional investors just aren't that interested in individual companies. Trading in ETFs makes up about a quarter of total U.S. trading volume each day, and some days that share can jump to 40 percent.

When people are focused on trading in and out of markets, not specific stocks, and when young companies are going through their growth mode outside of public markets, "it does change things from a volatility perspective," says Yousef Abbasi, director of U.S. institutional equities and global market strategist at INTL FCStone. It doesn't necessarily make investing overall less risky—index ETFs fall hard when people get worried about the market writ large—but it may be making individual stockpicking more of a snooze. —*Sarah Ponczek and Reade Pickert*

THE BOTTOM LINE It's easy now to buy a portfolio of established, sturdy public companies. But with many firms staying private, investors may be missing out on important parts of the economy.

It's Not a Bank, It's Apollo

● The private equity firm has a surprising model for the giant credit business it's putting together

Jim Zelter says he wants to build the GE Capital of tomorrow.

You read that right. General Electric Co.'s finance arm almost brought GE down. But Zelter's firm, Apollo Global Management LLC, is slowly picking off pieces of it. Apollo has bought billions of dollars of investments once managed by GE ▶

◀ Capital, and it's been sizing up its insurance and jet-leasing businesses, people familiar with the matter have said. That's while GE's new leader, Larry Culp, works to revive the conglomerate.

Apollo is the buyout giant led by Leon Black. Zelter is its co-president. The firm is trying to rekindle some of GE's old magic without repeating the company's mistakes, which led to a 2008 taxpayer bailout. Few think it will be easy. "Apollo can still build a great business, but it's quite hard to build one of the scale and breadth that GE built," says John Dionne, a senior lecturer at Harvard Business School and a senior adviser to one of Apollo's closest competitors, Blackstone Group LP.

The effort is part of the reordering of Wall Street following the longest recession in 70 years. No longer do the biggest banks have a monopoly on extending credit. Firms such as Apollo have swooped into businesses where regulators have imposed restrictions on deposit-taking institutions, like requiring more capital, especially against less liquid and riskier credit investments.

GE Capital, which once held more than $500 billion in assets, has shrunk to about one-fifth its peak size. Zelter is betting Apollo can run a lending business better than GE could. Apollo's credit business already manages $193 billion, the most of its private equity rivals. And it will benefit from a range of funding sources that GE Capital can only envy. They include investors in its funds, its own employees, and Athene Holding Ltd., an insurance company with more than $125 billion in assets. Athene invests its funds mostly with Apollo, which in turn also has a stake in the insurer. "I don't come into work every day thinking I want to have a bigger business than everyone else," Zelter says. "Size is a result, not an objective." Zelter and an Apollo spokesman declined to comment on any discussions regarding transactions with GE.

Apollo is no stranger to GE Capital. In 2013 the firm acquired MidCap Financial, a health-care lender with a $2 billion portfolio. Two years later, it boosted MidCap's growth with the purchase of $3.6 billion in loans managed by GE Capital and Abu Dhabi's Mubadala Development Co.

MidCap now has more than $19 billion of funds available to lend and is one of Apollo's largest permanent capital vehicles, meaning investors can't pull their money out on short notice. MidCap's investments returned 19 percent in 2018, according to a February investor presentation. It finances real estate, mid-market companies, and corporate takeovers led by other—usually smaller—private equity firms.

In 2012, Apollo created Merx Aviation Finance, a jet-leasing business. Merx bought 26 planes from GE Capital Aviation Services a year later and has acquired 168 aircraft since its founding, according to its website. In another transaction last year, Apollo bought $1 billion of GE Capital's private equity investments in the energy sector.

Apollo and Athene have expressed interest in buying all or part of GE Capital's insurance business, people familiar with the matter said. Problems at the unit, which includes long-term care insurance, have caused GE to take billions of dollars in writedowns and spurred a regulatory review. Apollo is one of only a few potential buyers that would be able to acquire such a portfolio, which it would then be able to manage, potentially collecting lucrative fees. GE's Culp said it "remains to be seen" whether the company will sell the insurance business or continue to manage it without selling new policies. Other private equity firms such as Blackstone and KKR & Co. have eyed GE Capital's assets.

Apollo and Athene have said they're looking to expand their ability to originate more loans themselves, giving the duo more control over the types of loans in which they invest. Athene partly owns AmeriHome Mortgage Co., which makes residential loans. Apollo also has a publicly traded business development corporation—a company that makes loans to businesses—and a real estate investment trust that invests in commercial mortgages. The BDC and REIT structures are additional sources of permanent capital. Apollo has "the ability to be more patient with investments," says Steve Biggar, an analyst at Argus Research Corp.

Apollo is perhaps best known for its private equity funds, which buy companies and may load them with debt to finance the acquisitions. But credit is its largest business by assets under management. The firm's three co-founders—Black, Josh Harris, and Marc Rowan—know their way around debt markets, having started their careers at Drexel Burnham Lambert, the former junk-bond pioneer run by Michael Milken.

The market for debt is getting riskier, according to industry leaders such as Howard Marks, co-founder of $120 billion Oaktree Capital Group. Investors have been crowding in, raising costs and making it harder to find good deals. "There's no doubt we're at later stages of the cycle," Zelter says. "I wouldn't want to be investing today unless I had a large, diverse platform." Like Apollo's. —*Sonali Basak, Davide Scigliuzzo, and Sabrina Willmer*

THE BOTTOM LINE General Electric once built a giant financial business. As the conglomerate falters, Apollo is picking up what it thinks are the choicest pieces.

● Assets under management in Apollo's credit business

$193b

Nigeria vs. the Hedge Fund

● A money manager bets on a company that's won an arbitration award worth billions of dollars

Nigeria potentially faces the largest financial liability in its history, and a hedge fund is coming to collect. The legal and political drama involves a deal between the country and a tiny natural gas company that was scuttled after the sudden death of Nigeria's president in 2010. The company, Process & Industrial Developments (P&ID), sued and won a staggering judgment, now worth $9 billion. But it's spent years trying to get the country to pay that award, equivalent to almost 2.5 percent of its annual gross domestic product.

Now a hedge fund managed by VR Capital Group has taken a large stake in P&ID. And the gas company is trying to pull levers of power in the U.S. and the U.K. to make Nigeria settle or, failing that, enable the company to start seizing assets.

Two years ago, P&ID won a decision against the government of Nigeria, which reneged on an agreement allowing the natural gas company to harvest hydrocarbons. Although lawyers for Nigeria say the company never put a shovel in the ground, a London arbitration tribunal in 2017 awarded it $6.6 billion—with more than $1 million in interest accruing daily.

To collect, P&ID, owned by the hedge fund and a firm called Lismore Capital Ltd., late last year hired lobbyists, lawyers, and a public-relations firm. The attorneys are also trying to confirm the award in courtrooms in Washington and London, which would allow P&ID to start seizing Nigerian assets in the U.S. and the U.K.

Representatives from VR Capital, which is managed by Richard Deitz, didn't respond to multiple requests for comment. Dayo Apata, Nigeria's solicitor general, said in a statement that the country "will ensure that its interests and that of the people of Nigeria are vigorously defended." He wrote that the arbitration panel assumed too much confidence in the success of P&ID's project in calculating the damages, leading to an excessive award.

In a statement, Brendan Cahill, one of P&ID's founders, said "it is disappointing that Nigeria chose to repudiate the terms of a deal that would have benefited the country by bringing electricity to millions of its citizens." He said the company, "backed by its investors," would pursue enforcement of the award.

VR Capital's bet appears to be the latest example of a tactic used by investors in distressed assets. Companies including Paulson & Co., Elliott Management, and Pershing Square Capital Management in the past several years have taken stakes in investments that few would touch, and then hired lawyers and lobbyists to change the political winds to make them succeed. The strategy worked for Elliott and its co-investors when they won a massive settlement on defaulted Argentine debt. The outcome is less certain for some Puerto Rico bondholders and shareholders in U.S. mortgage finance companies Fannie Mae and Freddie Mac.

The Nigerian saga began almost a decade ago and is revealed through court and arbitration filings and other public documents. Despite the country's ample natural resources, Nigeria's state-owned electric and petroleum companies have struggled to power the country. To help fix the problem, in 2010 then-President Umaru Musa Yar'Adua authorized partnerships with private companies to develop the nation's energy infrastructure. The Ministry of Petroleum Resources struck one such agreement in January 2010 with P&ID, which was founded in 2006 by two Irishmen, Michael Quinn and Cahill.

◀ Nigerian President Buhari, recently reelected

KOLA SULAIMONA/AFP/GETTY IMAGES

Under the agreement, Nigeria planned to pipe natural gas from two offshore oil rigs to a refinery that would be built by P&ID. There, P&ID would remove hydrocarbons from the gas and send the fuel to Nigerian power plants. P&ID wouldn't get paid for the endeavor, but it could keep and sell the

◀ hydrocarbon byproducts, which themselves had value, with the government getting a cut.

The company hoped it would make billions of dollars from the arrangement while helping to provide Nigeria with much-needed power. Quinn, in a statement before an arbitration panel, said he thought the deal would have been "the high point of my own career in Nigerian business." He said P&ID spent tens of millions of dollars on preparatory work before winning the agreement.

But the project never got off the ground. In May 2010, Yar'Adua, who'd been suffering from pericarditis, died. The oil rigs couldn't provide the volume of natural gas promised in the agreement, and, in any case, the government didn't construct the pipeline. After about two years of trying to resolve its dispute with the government, P&ID filed for arbitration in London, where the agreement specified disputes would be handled. The arbiters sided with P&ID.

The Nigerian government appealed the decision in London, arguing that the petroleum ministry didn't have the authority to enter into the agreement and the arbitration panel used the wrong legal standard. The government lost there, though it also turned to Nigeria's court system, where it won.

Then the London arbiters came back with an award amount. P&ID never broke ground on the natural gas refinery, but said it spent about $40 million in the planning stages. It calculated its damages by estimating the profits it believed it would have earned over 20 years had the project gone forward: about $6 billion. Two of the three arbiters granted the enormous award. The third also said there should be damages, but set the level much lower.

At some point, the Cayman-based fund, VR Advisory Services Ltd., bought 25 percent of P&ID, according to public records. A P&ID spokeswoman declined to comment on when VR bought its stake or to identify the owner of Lismore Capital.

Last fall two firms registered with the U.S. Senate to lobby Congress and the Trump administration on behalf of the energy company. One of them, Kobre & Kim, which also represents P&ID in the District of Columbia courtroom, has a history of attempting to enforce judgments against foreign governments. The other, DCI Group, has made a specialty of public-relations work for Wall Street companies that attempt to use public pressure to make bets pay off. DCI in January said it had made $80,000 in fees in the fourth quarter from P&ID and lobbied the U.S. Department of State. Black Diamond Strategies LLC, which is stocked with conservative lobbyists, has also disclosed that DCI hired it for lobbying work on P&ID's behalf.

The battle made headlines in Nigeria, where President Muhammadu Buhari was campaigning for a second term. (He won in February.) In November, when Nigerian officials visited the U.K. to pitch an offering of bonds, columnists there said Nigeria had to pay P&ID if it hoped to raise money from British investors. This prompted some in the Nigerian press to accuse commentators of being hired to attack Buhari. Cheta Nwanze, an analyst at Lagos-based risk advisory firm SBM Intelligence, says the government should have resolved the dispute and moved on. He says the president's decision not to do so "has now caused a liability far exceeding any the country has ever incurred." *—Joe Light, with Elisha Bala-Gbogbo*

THE BOTTOM LINE An arbitration judgment against Nigeria for pulling out of an energy deal could be worth almost 2.5 percent of the nation's annual GDP.

Where the Branches Aren't

● The biggest U.S. banks are closing more locations in low-income areas

Aberdeen, Wash., is a far Northwestern outpost of JPMorgan Chase & Co. with one lonely Chase Bank branch. Now the bank is planning to depart the rainy timber town that gave the world Kurt Cobain. The next closest Chase branch is 40 miles away. At the same time, parent company JPMorgan plans to open 70 branches in the vicinity of the other Washington—the nation's wealthy capital. Among the new locations is one in suburban McLean, Va., the 25th-richest town in the U.S.

These two different communities are part of the same story. For years the nation's largest banks have been shrinking their large branch networks. They've been cutting back faster in relatively poor neighborhoods than in more affluent ones. JPMorgan and its rivals say storefronts remain a critical part of their growth. They say they're committed to serving all their customers regardless of income, a requirement of the Community Reinvestment Act.

"Bank branches are a crucial part of financial access"

Consumer advocates warn that branch closings risk leaving scores of low-income areas with weaker competition for services such as checking and small-business lending. And a 2014 study by economist Hoai-Luu Q. Nguyen, then at MIT, found that, even with other banks nearby, branch closures in low-income and minority neighborhoods made it harder for local businesses to get loans. "Bank branches are a crucial part of financial access," says Scott Astrada, director of federal advocacy at the Center for Responsible Lending.

JPMorgan, the biggest U.S. bank, announced plans a year ago to open 400 branches. In the 13 months through January, it's applied to open 185 new branches, with 71 percent of them in more affluent areas. The bank in that time has given notice to regulators of its intention to shut 187 branches. About half of those are in neighborhoods where household income is below the national median of $60,336, according to regulatory and U.S. Census Bureau data.

Anne Pace, a JPMorgan spokeswoman, says a national view of the data is skewed because it doesn't adjust for regional income differences. "In our footprint, Chase has significantly more branches and more deposits in low- to moderate-income neighborhoods than any other competitor," she wrote in an emailed statement. "Even when we've consolidated branches, we continue to grow market share in those neighborhoods. In the vast majority of cases, the next closest branch is less than two miles away."

JPMorgan prefers a measure that excludes states where it doesn't have a presence. Using that, it had 26 percent of its branches in low- and moderate-income areas, while Wells Fargo & Co. and Bank of America Corp. each had 29 percent, according to data from JPMorgan. In response to questions from Bloomberg News, JPMorgan said 30 percent of new branches will be in such communities, up from an earlier pledge of at least 20 percent.

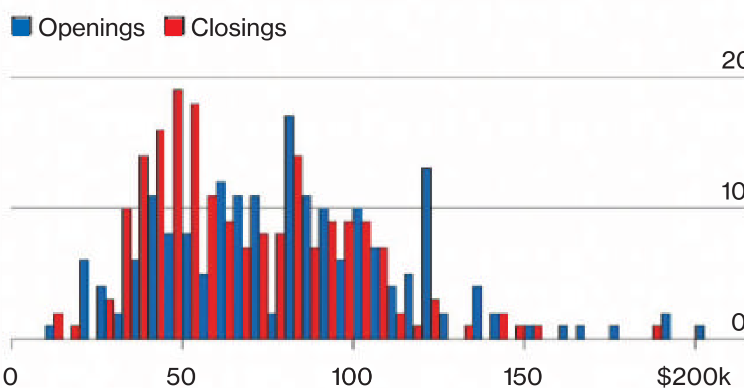
Nationally, banks shut 1,915 more branches in lower-income neighborhoods in the four years through 2018 than they opened, according to S&P Global Inc. The three largest consumer banks—JPMorgan, Wells Fargo, and Bank of America—led the way, S&P said. A spokeswoman for Wells Fargo says it serves "significantly more markets than any other national bank peers, including in underserved communities." A spokeswoman for Bank of America says about one-third of its network is in low- and moderate-income neighborhoods, "and that has been consistent over a number of years."

At a Feb. 26 investor conference, Jamie Dimon, JPMorgan's chief executive officer, said the bank's "biggest opportunity" is wealthy customers. JPMorgan has captured just 1 percent of the market catering to customers with at least $250,000 in investments and accounts, Dimon said. "It's not that hard to say, 'Why not 10 percent?'" he said.

JPMorgan isn't planning to close branches only in low-income areas. Some in Westchester County, N.Y., and well-to-do suburbs of Chicago, Houston, and Los Angeles are slated to go. Meanwhile, a portion of its proposed branches in the Washington, D.C., area are in low-to-moderate-income communities. The rest will dot richer places, such as the two branches bookending a mile stretch of Wilson Boulevard in Arlington, Va., which already has a dozen banks.
—*Michelle F. Davis*

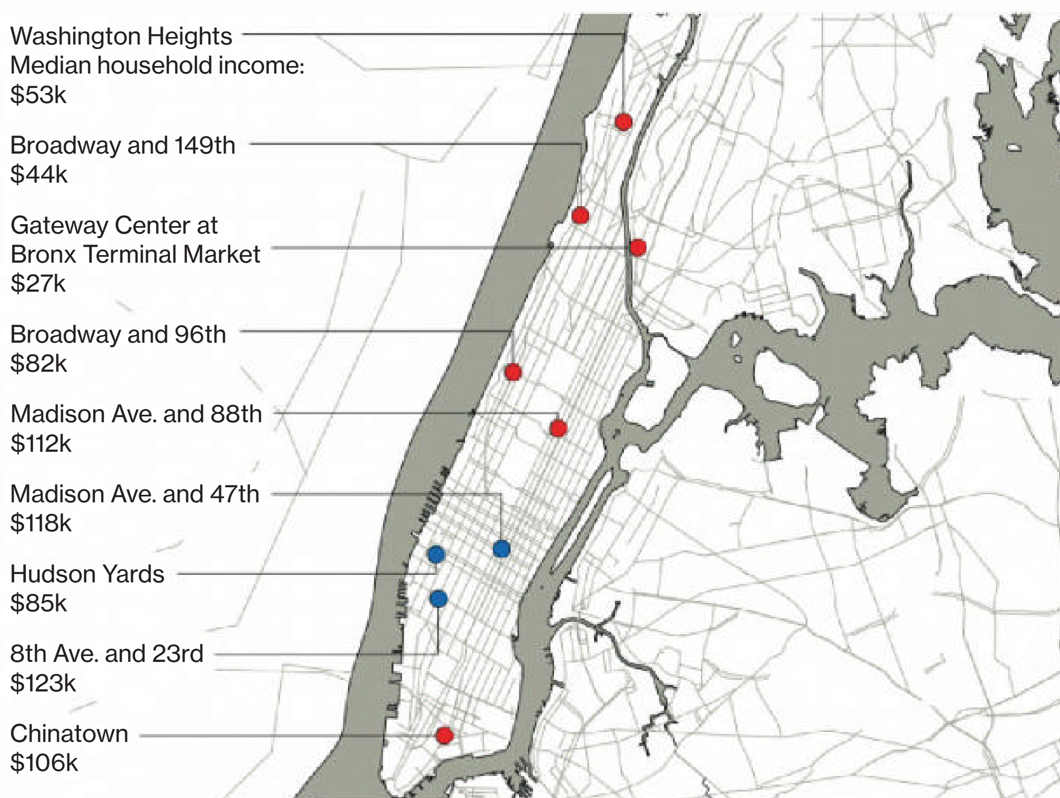
Where the Money Is

JPMorgan Chase branch openings and closings since Jan. 1, 2018* by median household income of branch zip code



Median household income of all zip codes with branch openings
$81.3k
...and branch closings
$61.5k

Branch openings and closings in Manhattan and the Bronx



*THROUGH JAN. 31, 2019; DATA: OFFICE OF THE COMPTROLLER OF THE CURRENCY; U.S. CENSUS BUREAU

THE BOTTOM LINE Although it says it isn't giving short shrift to low-income communities, JPMorgan sees its future serving more of the country's wealthiest banking customers.

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I'VE TRIED EVERYTHING TO STOP MY CHILD FROM USING DRUGS

I'M AT MY WIT'S END

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▲ A military band conductor before the National People's Congress

NG HAN GUAN/AP PHOTO

China Slows The Tempo

● Beijing reduces economic growth targets while ruling out "a deluge of stimulus"

China needs to brace for a "tough economic battle ahead," in the words of Premier Li Keqiang. It's a struggle on two main fronts. President Trump is demanding that Beijing reduce support for state-owned companies or face continued tariffs. At home, the government must find a way to help struggling private companies without adding to China's already enormous debt pile.

The plan to navigate those challenges was laid out in the presentation of the *Report on the Work of Government*, a ritual that marks the start of China's 10-day-long legislative session. In his March 5 speech before the National People's Congress, Li, China's top economic official, gave himself and his boss, President Xi Jinping, some wiggle room by setting the official economic growth target for 2019 at a range of 6 percent to 6.5 percent, down from last year's objective of about 6.5 percent.

Chinese policymakers' acceptance of the economy's inexorable slowdown—the lower bound of the target range would be the smallest expansion in almost three decades—was largely cheered by economists who warn anything faster would require excessive stimulus and jeopardize the country's long-term financial stability. In days gone by, China's leadership would've responded to economic headwinds with an all-out spending binge on roads, rail, and whatever else could keep growth humming above 10 percent. China will "refrain from using a deluge of stimulus policies," Li said in his speech.

Li's blueprint made it clear tax policy will become a more important driver of growth in the year ahead. His report outlined tax cuts worth almost 2 trillion yuan ($298 billion) and pledged future reductions. ▶

Edited by Cristina Lindblad

◀ The budget deficit target for 2019 was raised to 2.8 percent of gross domestic product, from last year's goal of 2.6 percent. "It's a big fiscal push," says Michael Spencer, global head of economics at Deutsche Bank AG. "There's a reluctance to just turn on the infrastructure tap if they don't need to."

Li warned that China faces a more complicated economic environment this year. Despite reports that the U.S. and China are on the verge of announcing an armistice in their trade war, U.S. tariffs on $250 billion in Chinese imports may not be lifted all at once. Some of the pressures Chinese businesses face are homegrown. Many complain they've been unable to borrow since the government began a crackdown on so-called shadow banking in 2017. Policymakers have taken steps to boost the amount of credit available by lowering the amount of money banks must set aside as reserves and by prodding institutions to make more loans. However, with China's total debt approaching 300 percent of GDP, they're loath to completely open the spigot.

How smoothly the world's No. 2 economy negotiates its challenges has big implications for the rest of the world. With Europe's growth sputtering and the longevity of the U.S. expansion under question, a more severe Chinese downturn would be bad news for the global economy and spell trouble for the Asian nations integrated into its supply chain.

For now, policymakers are focused on managing the nation's long deceleration from the double-digit growth rates of the early 2000s. Economists surveyed by Bloomberg see output growth slowing to 6.2 percent this year, from 6.6 percent in 2018, before easing further in 2020 and 2021.

Li's report promised a "noticeable decrease" in the tax burdens of major industries. In a move that benefits the manufacturing sector, the top bracket of the value-added tax, now set at 16 percent, will be lowered by 3 percentage points, while the 10 percent bracket will be cut by one point. Combined, the VAT reductions add up to as much as 800 billion yuan and will boost corporate earnings, according to Morgan Stanley.

Li's blueprint set a goal of keeping China's leverage ratio "basically stable" in 2019—something many believe is impossible. Pauline Loong, managing director at research firm Asia-Analytica in Hong Kong, says the message she took away from Li's presentation is that deleveraging is "definitely out."

Recent data show that, from bank lending to margin-trading accounts at stock brokerages, leverage in China is rising almost everywhere. Bank loans jumped by a record amount in January, and off-balance-sheet financing rose for the first time in 11 months.

Unlike in previous years, Li's report set no targets for retail sales growth or fixed-asset investment. Officials reiterated that monetary policy will remain "prudent" while presaging further cuts to the required reserve ratio for smaller banks.

● Li

Negotiators from the U.S. and China are said to be close to completing a trade deal that could lift most or all U.S. tariffs as long as Beijing follows through on pledges to bolster protections for intellectual property rights and increase its purchases of American products. That would remove one cloud hanging over the economy, leaving Xi with a lesser need to use stimulus to support growth.

"The government's quest to create more sustainable growth by reducing financial risks has not been abandoned, but it will be a slow journey," says Katrina Ell, an economist with Moody's Analytics in Sydney. "It remains to be seen whether confidence will remain in Beijing's ability to do this given the less aggressive path it is taking." —*Bloomberg News*

THE BOTTOM LINE Despite tax cuts and measures to unlock credit, Chinese officials see economic growth slowing this year, possibly to as low as 6 percent.

Can Business Learn to Trust AMLO?

● Three months into the Mexican leader's presidency, investors still regard him warily

Mexican President Andrés Manuel López Obrador, or AMLO as he's known, is doing spectacularly well with voters 100 days into his term. The latest survey pegs his approval rating at 78 percent, a record for the first trimester of a presidential term since polling began in the 1980s.

But just as his popularity is soaring, market sentiment is souring, widening a divide between investors and the president's base. The clearest sign of this is a substantial markdown in growth forecasts by Wall Street analysts. In a poll of institutional investors commissioned by Credit Suisse Group AG in February, three-quarters said the

current economic situation was worse or much worse than a year ago.

In contrast, the majority of Mexicans see a president who's delivering on his campaign pledges to fight crime, raise living standards, and reduce inequality. Since taking office on Dec. 1, his administration has launched welfare programs for the elderly and disadvantaged youth, abolished cushy retirement pensions for former presidents, and cracked down on gangs of gasoline thieves whose appetite for destruction rivals those of Mexico's infamous drug cartels. The social-media-adept president touts his government's achievements in daily press conferences watched by hundreds of thousands on YouTube.

"Andrés Manuel's popularity with the electorate is the result of a honeymoon period and an incredibly savvy political communications strategy," says Duncan Wood, director of the Mexico Institute at the Woodrow Wilson International Center for Scholars in Washington. "Mexicans have responded very well to his message on corruption, equality, and development. But markets are looking for a specific plan that will show how economic growth could be generated in Mexico, and thus far they haven't seen one."

In a statement released on March 1, S&P Global Ratings said Mexico faces a 1 in 3 chance of being downgraded in the coming year. Of particular concern are AMLO's plans to curb the private sector's role in the energy industry while pouring money into the highly indebted national oil company, Petróleos Mexicanos, known as Pemex. Economists are worried that such policies will have an adverse effect on public finances and damp corporate investment.

Goldman Sachs Group Inc.'s Alberto Ramos adjusted his 2019 growth estimate for the economy to 1.5 percent, from 1.7 percent, after performance came in weaker than expected at the end of the year. He cited "market apprehension" about AMLO's policies as a factor in the revision. Bank of America Corp. is even more downbeat, predicting an expansion of only 1 percent.

The president's supporters measure the administration's progress with a different set of yardsticks. Over the past three months his government has doubled the minimum wage in cities and towns near the U.S. border and raised it nationwide in an attempt to counteract a decades-long erosion in worker salaries. The measures have buoyed consumer confidence, which reached its highest level on record in February, according to the national statistics agency.

At the same time, AMLO has unleashed a raft of austerity measures targeting privileges enjoyed by high-level bureaucrats. Among his first acts in office were to put the presidential jet, a Boeing 787 Dreamliner, up for sale and disband Mexico's equivalent of the U.S. Secret Service. AMLO also has enlisted the army to help thwart fuel thieves, a move that's already saved the country 7.8 billion pesos ($405 million), according to the government.

▲ AMLO at Mexico City's international airport

What will likely be remembered as one of the defining moments of his presidency happened even before AMLO took office. Four months after his landslide victory, he announced a halt to the construction of an airport on the outskirts of Mexico City, calling the $13 billion project a wasteful extravagance. The move shocked investors at home and abroad and sent the peso and Mexican bonds tumbling. But it energized his supporters, bolstering his image as a maverick willing to take on the corporate establishment—what he calls the "power mafia" that ran the country into the ground with the help of neoliberal governments.

"In one stroke, he sent a strong message to the crony capitalism players of Mexico," says Rogelio Ramírez de la O, an economist who advised AMLO when he ran for president in 2006. The message, Ramírez de la O says, goes something like this: "I respect the value of your contracts, but if we change the model, we're going to have a much healthier economy in the long term."

In another sign that the status quo is fracturing, the incidence of labor strikes has increased, particularly along the northern border, an area with a high concentration of foreign-owned factories.

Some in the business community are also unnerved by how much power the president wields. His Morena Party and its coalition ▶

● Approval rating of Mexican presidents three months into their term

President	Approval
Ernesto Zedillo 1994-2000	69%
Vicente Fox 2000-06	61
Felipe Calderón 2006-12	58
Enrique Peña Nieto 2012-18	50
AMLO 2018-	78

L: PANG XINGLEI/XINHUA/ZUMA PRESS. AMLO: ALFREDO ESTRELLA/AFP/GETTY IMAGES. DATA: REFORMA, EL FINANCIERO, CONSULTA MITOFSKY

◀ partners have a majority in Congress and most state legislatures. In recent months, AMLO has launched attacks on autonomous government agencies, accusing them of being biased in favor of business, and called the Supreme Court dishonest. "In Mexico, presidents have a very strong influence," says Javier Oliva, a political scientist at Mexico's National Autonomous University. "But for our democracy to work, we need more checks and balances, and the president is neutralizing them."

AMLO has been meeting with Mexican business leaders in an attempt to mend fences. Ramírez de la O, who runs Ecanal, an economic advisory firm, says he's seen some Mexican companies come around to AMLO's idea of creating public-private partnerships to build an oil refinery and an interstate passenger train.

But Wood of the Wilson Center says businesses' suspicions have hardly been laid to rest. Addressing a group of 150 investors at a recent conference in Miami, he asked how many felt comfortable putting money into Mexico now. "Two people raised their hands," Woods says. "If you asked that question two years ago, everyone in the room would've raised their hands." *—Nacha Cattan*

THE BOTTOM LINE The popularity of Mexico's president has only increased during his first 100 days in office. But economists have been downgrading the country's growth forecasts.

A Lot of Huff for A Little Puff

● The Trump tax cuts did boost corporate investment in 2018—but not by much

The Tax Cuts and Jobs Act of 2017 was as close as the real world gets to a laboratory experiment on whether supply-side theory works in practice. More than one year on, we have an answer. It's "meh."

The White House and congressional Republicans argued that easing the corporate tax burden would lift business investment out of the doldrums and reinvigorate the U.S. expansion. An analysis by Bloomberg Economics shows that while investment spending did pick up in 2018, the amount attributable to a lighter corporate tax burden is small. It's not that tax cuts don't matter. It's that they don't matter much. That view is informed by looking at a longer sweep of history, which makes clear that despite its size, the TCJA was always destined to fall short of the hype.

Supply-siders argue that the tax code is a significant factor in corporations' capital-spending plans. The central premise is simple and intuitive: Allowing businesses to hold on to a bigger share of their profits motivates them to increase investment. Demand-side enthusiasts, on the other hand, argue that such decisions are driven more by the state of the economy and that businesses will invest when existing factories, storefronts, equipment, etc., are insufficient to meet demand for their products. In their conception, changes to tax law are of secondary importance.

Still, both sides would agree that the U.S.'s latest attempt at tax reform was a boon to corporate profits. The reduction in the top marginal tax rate for corporations, from 35 percent to 21 percent, helped boost profits almost 8 percent in the first three quarters of 2018 from the same period a year earlier. If the pace carried into the fourth quarter (we won't know until data are released later this month), that would be the fastest pace of profit growth since 2012.

The chart below suggests that higher profits do in fact lead to more investment. Capital spending rose 7 percent in 2018 after climbing a little more than 5 percent the previous year. But how much of that was in response to the tax cuts?

To adequately assess the impact of tax reform on investment, it's important to look beyond the much-touted drop in the top marginal tax rate and consider other important changes to the corporate tax code, such as allowing businesses to immediately write off certain capital expenditures in full and limiting the deduction for business interest expenses. The effective tax rate, or the amount of tax paid divided by corporate profits, gives a more complete picture of a corporation's tax liability. Note in the chart to the right that despite a sequence of tax changes in the 1980s, the effective rate was higher at the end of the decade. President Ronald Reagan's Tax Reform Act of 1986 did lower the top marginal rate but barely moved the effective rate.

While both of these rates have been trending lower for decades, the TCJA pushed them to their lowest levels since at least the 1950s. The latest round of tax reform lowered the effective rate from about 16 percent in 2017 to about 10.5 percent last year (again, the calculation is based on the first three quarters of 2018).

Bloomberg Economics estimates the 5.5 percentage point drop in the rate led to a 1 percent boost to nonresidential investment, which added a tenth of a percentage point to gross domestic product in 2018. So without the corporate side of the TCJA, growth last year would have been 3 percent instead of 3.1 percent. That's a much smaller boost than what White House officials had promised. In the months leading up to passage of the TCJA, Kevin Hassett, the chairman of the Council of Economic Advisers, estimated that the effect from a package of tax measures similar to those in the legislation would be "much more than 1 percent."

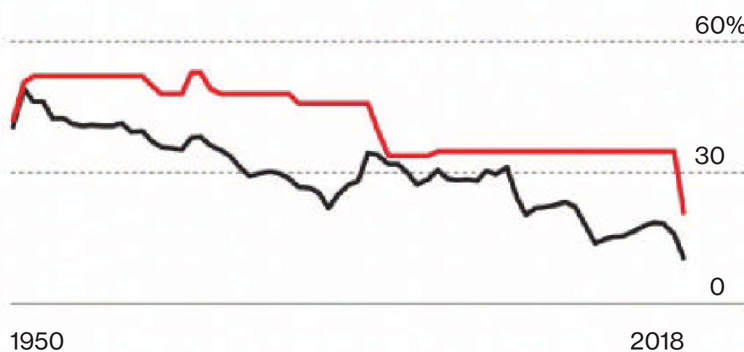
So if tax cuts don't have a large impact on investment decisions, what does? Our review of data going back to 1950 considered a host of variables related to investment, including the output gap, business confidence, capital depreciation, and interest rates. It showed that business confidence, or what John Maynard Keynes liked to call "animal spirits," along with the basic laws of supply and demand, are more important drivers of investment.

Improving confidence and diminishing economic slack—approximated by the output gap, a measure that tracks how economic activity is performing relative to its potential—aren't only better indicators of where investment is headed, but also have an effect magnitudes larger than that of tax cuts. The reason is simple. Businesses will expand production capabilities when they feel optimistic about their future prospects and when existing capacity can't meet demand for their products. Reducing their corporate tax burden strengthens incentives to invest if other factors are in place. On its own, though, it doesn't move the dial.

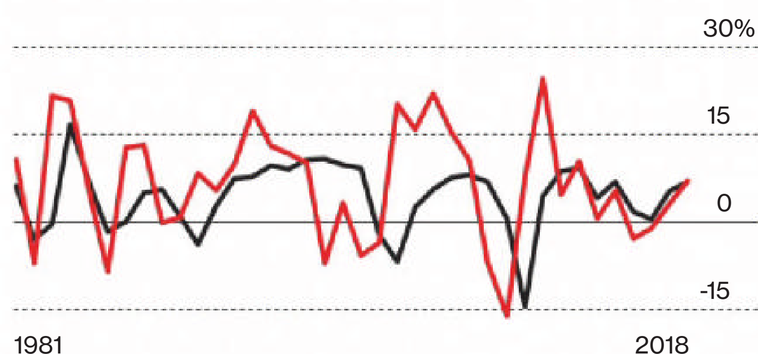
There's little question the country's corporate tax code was in need of reform. The U.S. was a comparatively more expensive place to do business, which motivated companies to locate operations offshore (though the TCJA may end up exacerbating that trend as income from subsidiaries abroad will have a tax rate roughly half that of domestic income).

While the TCJA hasn't quite lived up to the supply-side sales pitch from a growth perspective, its effects on government finances have been broadly in line with what its detractors anticipated. Federal tax receipts from corporations plummeted almost 31 percent in the calendar year—the sharpest decline on record (the data only go back to 1982), save for the second year of the Great Recession. —*Tim Mahedy*

The Devil Is in the Deductions



More Than a Casual Relationship



THE BOTTOM LINE An analysis by Bloomberg Economics shows that tax rates aren't as important a factor in corporate investment as supply-siders make out.

ILLUSTRATION BY CHARLOTTE POLLET. DATA: BUREAU OF ECONOMIC ANALYSIS; BLOOMBERG ANALYSIS OF BEA AND INTERNAL REVENUE SERVICE DATA

Amazon Flexes Its Washington Muscles

● The tech giant now spends more money on lobbying than all but one of its peers

After building out a powerful influence machine in Washington over the last few years, Amazon is going on the attack.

The Seattle-based company is pushing aside trade groups it doesn't like and creating ones it does. It's dispatching senior executives to woo antitrust enforcers. And it's poaching senior staff from government agencies and congressional offices.

Federal records show that Amazon.com Inc. lobbied more government entities than any other tech company in 2018 and sought to exert its influence over more issues than any of its tech peers except Alphabet Inc.'s Google. Last year, Amazon spent $14.2 million on lobbying, a record for the company, up from its previous high of $12.8 million in 2017. The $77 million that the nine tech companies included in the chart below spent in 2018 to lobby Washington looks minuscule next to the $280 million spent by pharmaceutical and health-care products companies. Tech has, however, pulled ahead of the $64 million that commercial banks spent—and Amazon in particular has a cachet that allows it to punch above its weight at times. Of the nine, only the $21 million Google spent on lobbying beat Amazon's total. Since 2012, Amazon has ramped up spending by more than 460 percent—much faster than its rivals.

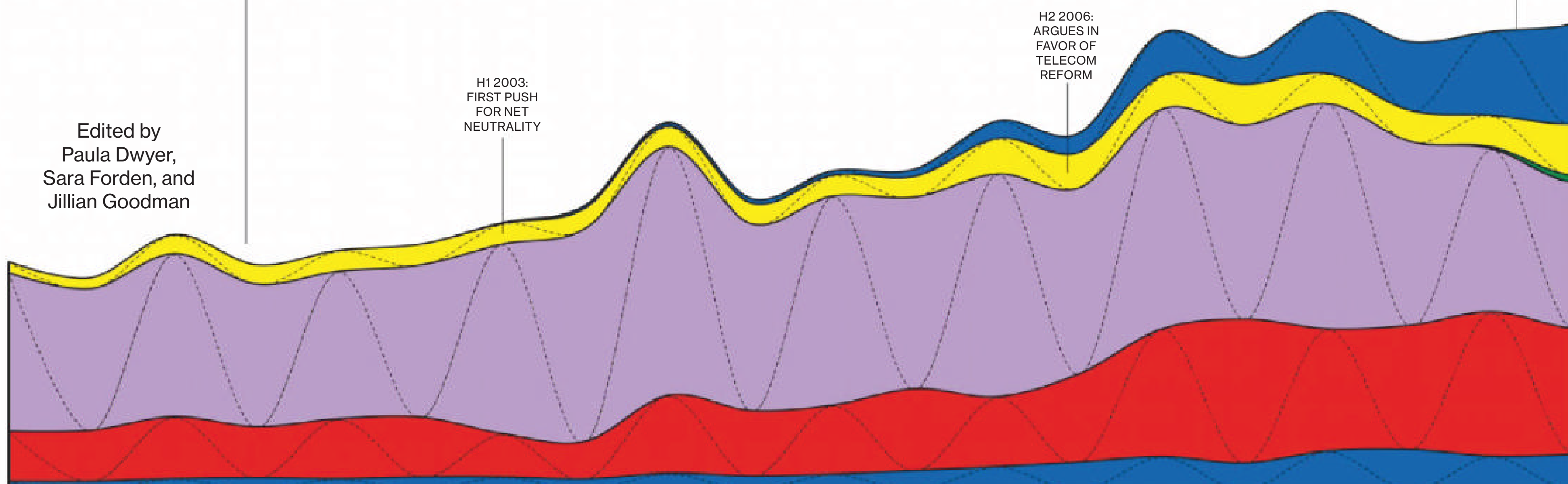
Amazon is also showing a new level of assertiveness in advancing its corporate interests, though largely out of the public eye. The company's recent high-profile imbroglios, which include the abrupt abandonment of a deal for a new headquarters in New York City and founder and Chief Executive Officer Jeff Bezos' blackmail allegations against the *National Enquirer*, belie the extent and sophistication of the company's behind-the-scenes efforts.

Jay Carney, President Barack Obama's press secretary and now Amazon's senior vice president for global corporate affairs, oversees the Washington policy office, whose roster of in-house lobbyists ballooned to 28 in 2018, from 11 in 2015. That doesn't include the 13 outside lobbying firms Amazon employs. "They realized they're just getting so big," says Frank Pasquale, a University of Maryland law professor, of Amazon's lobbying prowess. "They're crushing so many small players, they're recognizing that there's going to be some political backlash."

One of Amazon's priorities is to persuade federal agencies to rent Amazon's vast cloud computing services rather than maintain their own. (Amazon then bids for the work through the federal procurement process.) The company also wants to power a planned, governmentwide e-commerce portal for official purchases of everything from office furniture to paper clips—a $50 billion market.

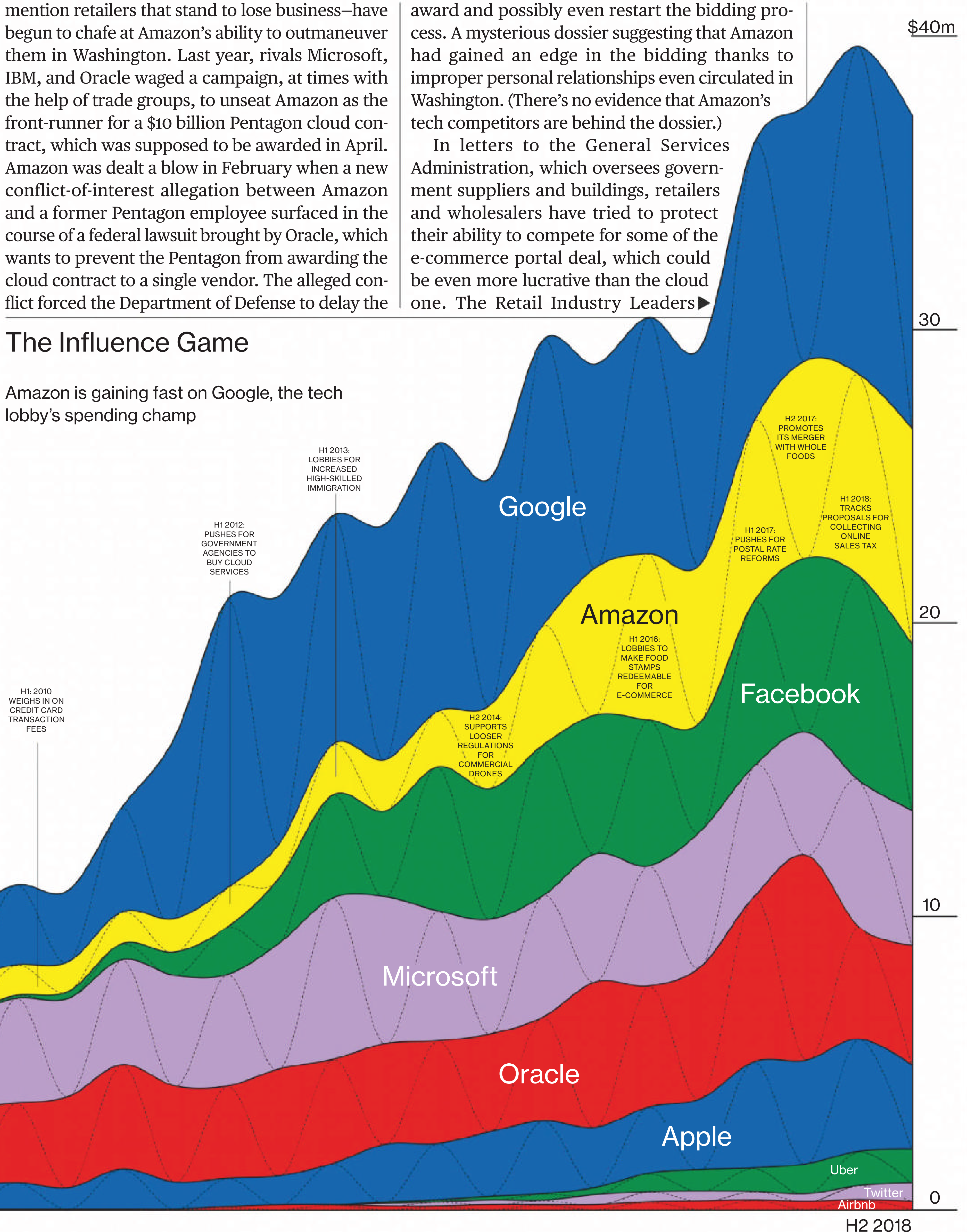
Old-line computer and software vendors—not to

Edited by Paula Dwyer, Sara Forden, and Jillian Goodman



mention retailers that stand to lose business—have begun to chafe at Amazon's ability to outmaneuver them in Washington. Last year, rivals Microsoft, IBM, and Oracle waged a campaign, at times with the help of trade groups, to unseat Amazon as the front-runner for a $10 billion Pentagon cloud contract, which was supposed to be awarded in April. Amazon was dealt a blow in February when a new conflict-of-interest allegation between Amazon and a former Pentagon employee surfaced in the course of a federal lawsuit brought by Oracle, which wants to prevent the Pentagon from awarding the cloud contract to a single vendor. The alleged conflict forced the Department of Defense to delay the award and possibly even restart the bidding process. A mysterious dossier suggesting that Amazon had gained an edge in the bidding thanks to improper personal relationships even circulated in Washington. (There's no evidence that Amazon's tech competitors are behind the dossier.)

In letters to the General Services Administration, which oversees government suppliers and buildings, retailers and wholesalers have tried to protect their ability to compete for some of the e-commerce portal deal, which could be even more lucrative than the cloud one. The Retail Industry Leaders ▶



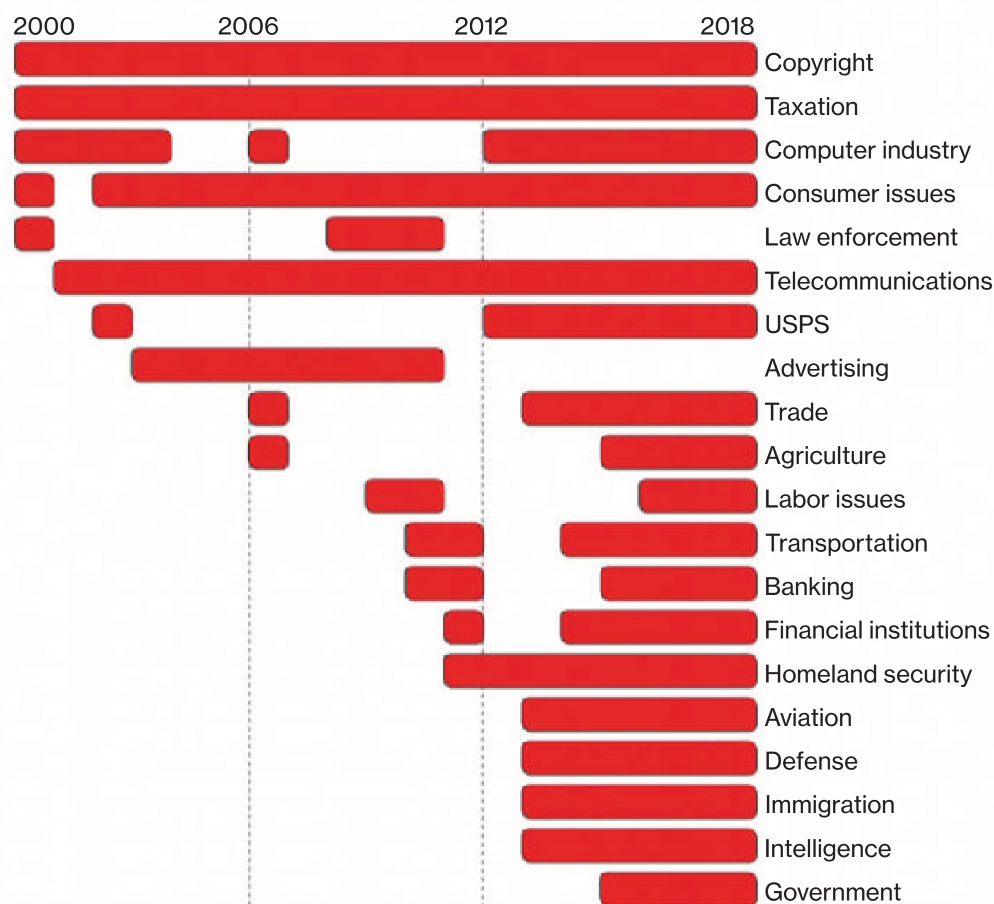
◀ Association, which claims to represent 42 million people who work in the retail industry, weighed in. So did Walmart Inc. and Staples Inc., arguing that the government should hire multiple companies, not just one, to create online portals from which federal agencies could order supplies.

When the Information Technology Alliance for Public Sector (Itaps), a collection of companies that sell hardware and software to the federal government, began publicly criticizing U.S. plans to proceed with the cloud deal and e-commerce portal, Amazon swung into action. In emails and phone calls to Itaps members and staff, Amazon executives tried to stop letters from being sent to members of Congress that portrayed an industry unified in its concerns, according to four people familiar with the matter. One person said the Amazon executives also complained to Dean Garfield, then head of the public sector alliance's parent organization, the Information Technology Industry Council (ITI). Amazon wasn't successful, but some tech companies in the Itaps group interpreted Amazon's actions as an attempt to protect its front-runner status in the federal cloud market, the people familiar said.

The tide turned in Amazon's favor in July, when Garfield disbanded the public sector group and scattered its portfolio of procurement issues among his staff, according to a copy of an email obtained by Bloomberg. Longtime ITI employees who handled the procurement portfolio eventually left amid the reorganization, prompting several companies to worry that Amazon had effectively silenced a trade group. Tensions reached a peak in November, during an ITI board meeting, when Garfield was asked to address members' suspicions about Amazon's role in the changes. Garfield, who wouldn't comment for this article, denied the allegations, according to one person present who wasn't authorized to discuss internal board matters and asked not to be named.

The ITI board nonetheless elevated Amazon's vice president for public policy, Brian Huseman, to vice-chair of the executive committee. According to another internal email obtained by Bloomberg, the ITI board also assigned Huseman, along with Adobe Inc.'s vice president for government affairs, to lead the search for an executive director to replace Garfield, who was leaving for a job overseeing global public policy for Netflix Inc. Jennie Courts, an ITI spokeswoman, says the group's "commitment to public-sector issues, including procurement and advancing the shared interests of our members, remains unchanged. Any inference otherwise is inaccurate."

Amazon went beyond trying to muzzle an uncooperative trade group and launched one of its own.



Early last year, Teresa Carlson, the top Amazon Web Services executive in Washington, co-hosted a dinner with two smaller companies to pitch corporate representatives on forming the Alliance for Digital Innovation (ADI), according to two people familiar with the matter. The group's goal would be to move federal data more quickly to the commercial cloud and encourage the government to adopt emerging technologies. Jack Wilmer, a senior policy adviser in the White House's Office of Science and Technology Policy, spoke at the dinner about the Trump administration's plans to modernize the federal government's technology, a spokeswoman confirmed. Carlson, through a spokesman, declined to comment.

Since that dinner, at least 19 cloud-based companies—many of them Amazon business partners—have joined ADI, the new trade group, led by former Amazon Web Services lobbyist Richard Beutel. Notably absent from its membership roster are Microsoft, Google, IBM, and Oracle—Amazon's biggest Washington competitors. John Wood, CEO of cybersecurity company Telos Corp. and another co-host of the dinner, is the group's chairman. The goal isn't to support Amazon in Washington, he says, but to gather like-minded companies that can help the government adopt new technologies. "This is much more than any one organization," he adds. "ADI is long overdue." Beutel declined to comment.

As Amazon looks to build a bigger book of

"They're often held out as an example of how U.S. antitrust policy has to be more aggressive"

DATA: SENATE OFFICE OF PUBLIC RECORD, BLOOMBERG RESEARCH

business in Washington, one major irritant has arisen: President Donald Trump. Judging from his tweets, he considers Bezos his biggest corporate nemesis. This could be in part because of Bezos' personal ownership of the *Washington Post*, whose news articles often depict a White House in disarray and whose opinion pages relentlessly criticize the president. In July, Trump tweeted that the newspaper was an "expensive lobbyist" for Amazon and that the online retailer had a "huge antitrust" problem. Owning the newspaper has indeed made Bezos' business affairs more complex, as he wrote in a highly personal Medium blog post published on Feb. 7. In the same post, he alleged that *National Enquirer* parent company American Media Inc. was threatening to publish embarrassing photos of him, including nude selfies, for political reasons.

While they've been personally embarrassing for Bezos, neither the scandal nor Trump's broadsides have done any real damage to Amazon. Yet a new generation of regulators and lawmakers in Washington could. Some openly ponder whether the e-commerce giant is too big and too powerful. "Amazon figures quite prominently in modern debates about U.S. antitrust law," says William Kovacic, a professor at George Washington University Law School. "In academic articles, they're often held out as an example of how U.S. antitrust policy has to be more aggressive."

While the U.S hasn't challenged Amazon's business practices, "I have to think some people are thinking about it," says Amy Webb, founder of the Future Today Institute, which studies technology and the workforce. Amazon has been knocking on the doors of Washington's antitrust watchdogs. Several company executives—including Huseman and David Zapolsky, Amazon's general counsel—made visits to the Federal Trade Commission in May, just after the Senate confirmed Trump's commissioner nominees, according to records obtained through the Freedom of Information Act.

Such contacts could prove crucial to protecting Amazon's business as the FTC ramps up its scrutiny of tech companies. Chairman Joe Simons held a series of public hearings last year to examine antitrust policy, including whether technology companies are undermining competition. On Feb. 26 he created a task force to investigate industry mergers that could be unwound if they harm consumers. Facebook Inc.'s 2012 purchase of Instagram is perhaps the most high-profile example of an acquisition that critics argue should never have been approved, but Amazon has done plenty of its own deals, too.

Amazon has begun hiring well-connected government lawyers and congressional aides, including Bryson Bachman, a former senior counsel to the Department of Justice's antitrust chief, Makan Delrahim. With numerous House committees now chaired by black Democrats, including those on financial services, education, homeland security, government oversight, and technology, Amazon has also hired a stable of minority lobbyists. These include LaDavia Drane, a former staff chief for Representative Yvette Clarke of New York, a Congressional Black Caucus member, and Troy Clair, who was the chief of staff for Representative G.K. Butterfield of North Carolina, a former CBC chairman. After pressure from the CBC to increase its board's diversity, Amazon on Feb. 4 added Rosalind Brewer, the chief operating officer of Starbucks Corp. and a former Walmart Inc. executive.

Soon Amazon will vastly expand its physical presence in the capital with a new headquarters across the Potomac River. If the company follows through with plans to hire more than 25,000 people, it would become the region's largest private-sector employer, adding to the 7,500 people who work at an Amazon cloud computing unit near Dulles International Airport. Bezos himself plunked down $23 million for two adjacent properties in the district's fashionable Kalorama neighborhood in 2016, which he's now combining into a single mansion to serve as an East Coast base.

● Amazon wants to power a government purchasing portal, a potential market of

$50b

Lately, Bezos has been busy courting Washington's elite. In September he roused an audience at the Economic Club of Washington with jokes and commentary about Trump and the role of the *Post* in a democracy. In late January he attended an 8 a.m. breakfast at the invitation of Don Graham, the former *Washington Post* owner, to hear Warren Buffett and Alan Greenspan talk about markets and the economy.

The day before, he'd entertained guests at the exclusive Alfalfa Club dinner, an invitation-only, black-tie soiree for politicians, diplomats, and corporate executives. Buffett and Greenspan were both there. Bezos closed out the evening with a skit in which he rolled a cart onstage carrying Amazon packages, one of which, he announced, contained the "superheroes of the Bible" pajamas that Vice President Mike Pence had ordered. Another was a DVD of "How to Survive the Coming Global Depression" for Federal Reserve Chairman Jerome Powell. Then he said, "Oh, wait. This one's for me. It's a bill of sale saying apparently I now own the *National Enquirer*." *—Naomi Nix, with Bill Allison, David McLaughlin, and Mehr Nadeem*

THE BOTTOM LINE With multiple multibillion-dollar government contracts on the line, Amazon is vastly outspending most of its rivals in Washington but facing stiff opposition nonetheless.

The Man Who Could Beat Netanyahu

◀ Gantz (center) with Blue and White party leaders in the Golan Heights on March 4

● Former general Benny Gantz is the biggest electoral threat to the prime minister in 20 years

Decades before he became the man with a chance to topple Israel's longtime premier, Benny Gantz was a 12th-grader with a graduation party on his mind. He knew some of his classmates couldn't afford a celebration, so he lobbied the school where he studied in the Kfar Hayarok farming community near Tel Aviv to give them a piece of land. Gantz's idea, recalls his teacher, Sara Ran Haiykae, was to grow a crop the students could sell to pay for the party themselves. "I saw a leadership ability that was amazing," she says.

Gantz went on to serve for 38 years in the Israeli military before entering politics just two months ago. Now, with Prime Minister Benjamin Netanyahu fighting for his political life, Gantz may be on the verge of his greatest leadership test yet.

Attorney General Avichai Mandelblit's announcement on March 1 that he'd drafted an indictment against Netanyahu on bribery and fraud charges has upended the campaign for the April 9 elections. Polls now show Gantz's party, Blue and White, is likely to pull ahead of Netanyahu's Likud, representing the most formidable electoral threat the four-term prime minister has faced since another former military commander, Ehud Barak, unseated him in 1999.

Gantz began his military career as a paratrooper, eventually commanding forces in the West Bank and the front with Lebanon and Syria and becoming the head of Israel's military from 2011 to 2015. Yet his campaign pitch is based on ethics, not military skill. Gantz, 59, portrays himself as the antidote to a prime minister he describes as imperious and an administration he says is riddled with graft.

Gantz also faces serious questions. The International Criminal Court has been conducting a preliminary probe for four years of possible war crimes committed by both Israelis and Palestinians during the 2014 Gaza Strip war, when Gantz was Israel's military chief. It hasn't decided yet whether to open a full-fledged investigation. Two people have also come forward to claim he exposed himself to them in high school. Gantz has denied the allegations, which his party says are politically motivated, and is suing one of his accusers.

Netanyahu, 69, denounces the general as a weak leftist prepared to make territorial concessions to the Palestinians. But at a time when the incumbent is showing vulnerability, Gantz's military profile helps him appear like a credible alternative, says Mitchell Barak, an independent pollster who once worked with Netanyahu. In Israeli elections, "it's personality politics," he says. At the same time, Barak adds, "Netanyahu is best when he's got someone to fight."

Netanyahu's political skills, reputation as a tenacious defender of Israel's security, and diplomatic achievements—such as the transfer of the U.S. Embassy to Jerusalem—have helped keep him aloft. As Gantz's poll numbers rise, so do the attacks on him: Some senior military and political officials who worked closely with Gantz criticize him as a dithering, nonconfrontational commander. "Throughout his career, Gantz always wanted to cut and run," says Education Minister Naftali Bennett.

This is not a universal opinion. Dan Emergui, a signal operator under Gantz's command 30 years ago, describes an accessible commander who knew how to keep his wits about him in the toughest circumstances. "He is impressive, charismatic, and very pleasant," Emergui says. "He spoke to soldiers as equals. He is the kind of commander you follow with your eyes closed."

"He spoke to soldiers as equals. He is the kind of commander you follow with your eyes closed"

Gantz's party, a new political bloc, hasn't finalized its platform, though Gantz has said he plans to promote affordable housing and invest in the troubled public health system. On all-important territorial matters, Gantz's stances broadly mesh with those of Netanyahu: a united Jerusalem under Israeli sovereignty, retention of West Bank settlement blocs, and a continued Israeli presence in the Golan Heights and Jordan Rift Valley. He doesn't see full peace with the Palestinians in the near future. The Palestinians, despairing of another Netanyahu term, say they're hoping for a chance to work with Gantz.

His relatively blank slate of policies may not necessarily be a hindrance, according to Barak, the pollster. "I call him the Charlie Chaplin candidate because he doesn't really say anything," he says, "and that leaves space for Israelis to fantasize about what they'd like him to be." *—Gwen Ackerman and Amy Teibel, with Udi Segal*

THE BOTTOM LINE With the threat of an indictment looming over Netanyahu, Gantz represents a comparatively sturdy, upstanding choice for voters tiring of the prime minister's scandals.

JALAA MAREY/AFP/GETTY IMAGES

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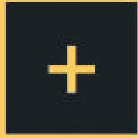

Business Schools

Recruiters' Wish Lists

The 2018 Bloomberg Businessweek Best B-Schools global ranking of full-time MBA programs relies on surveys from employers. To understand what matters most to recruiters, we looked closely at the following six survey categories for the top 30 schools in the ranking. Recruiters scored each school; those that are tied are listed alphabetically.

Best B-Schools 2018 Global Ranking Top 10

1. Stanford
2. Pennsylvania (Wharton)
3. Harvard
4. MIT (Sloan)
5. Chicago (Booth)
6. UC at Berkeley (Haas)
7. Columbia
8. Northwestern (Kellogg)
9. Virginia (Darden)
10. IMD

The schools producing the most creative graduates

Beyond the MBA basics, recruiters consider the schools that are best at teaching innovation and original thinking.

1. Stanford
2. Yale
3. Georgetown (McDonough)
4. UC at Berkeley (Haas)
5. Carnegie Mellon (Tepper)

The schools that provide the most diverse pool of job candidates

Notably, three of the top five in this category are international programs—INSEAD in Fontainebleau, France; IESE in Barcelona; and IMD in Lausanne, Switzerland.

1 Yale
2 Carnegie Mellon (Tepper)
2 INSEAD (tie)
4 IESE Business School
5 IMD

The schools producing the best-trained graduates

Recruiters compare the training of MBAs at one school vs. other schools they hire from.

1 Brigham Young (Marriott)
1 Georgetown (McDonough) (tie)
3 Carnegie Mellon (Tepper)
4 North Carolina (Kenan-Flagler)
4 Yale (tie)

March 11, 2019

Edited by
Dimitra Kessenides

The full-time MBA programs with the highest brand value

Reputation matters, especially when it comes to hiring. Stanford leads this and three other categories—no surprise, since the school topped the 2018 global B-schools ranking.

1. Stanford
2. Harvard
3. Pennsylvania (Wharton)
4. Georgetown (McDonough)
5. MIT (Sloan)

The best reputation for entrepreneurship

In response to growing numbers of students who want to start their own businesses, most top-ranked MBA programs now emphasize entrepreneurship.

1. Stanford
2. Washington (Foster)
3. UC at Berkeley (Haas)
4. Georgetown (McDonough)
5. Rice (Jones)

Graduates who demonstrate exceptional entrepreneurial skills

Recruiters grade schools based on the quality of entrepreneurial training and the skills they see in prospective hires.

1. Stanford
2. UC at Berkeley (Haas)
3. Carnegie Mellon (Tepper)
3. Georgetown (McDonough) (tie)
5. Washington (Foster)

Full results can be viewed at: www.bloomberg.com/bschoolrecruiters

More Funding for International Students

Prodigy Finance extends credit to postgraduates across borders

When Marcelo Mazzafera was accepted into the MBA program at Duke University's Fuqua School of Business, he couldn't afford the tuition and living expenses. He also couldn't find financing in his home country, Brazil. Mazzafera ended up taking loans recommended by Duke for students who don't have a U.S. co-signer or collateral.

The interest rate was steep—about 7.25 percent plus the three-month London interbank offered rate, compared with the 2 percent to 3 percent plus three-month Libor paid by fellow students with co-signers. When Mazzafera graduated in May 2018, he owed about $180,000 plus interest. Then he heard about a new refinancing product that could reduce his interest rate to 5 percent plus three-month Libor. "It's not ideal, but it's better," says Mazzafera, who earns $150,000 annually at his investment banking job in New York. ▶

ILLUSTRATIONS BY JUSTYNA STASIK

◀ Student debt refinancing is the newest product from Prodigy Finance, a business with offices in Cape Town, London, and New York that's betting on foreign students with high earnings potential. As more students consider enrolling in postgraduate professional programs outside their home countries, the company is growing quickly, planning to raise staff headcount to 250 from 166 by yearend, says co-founder and Chief Executive Officer Cameron Stevens. Since its founding in London in 2007, Prodigy has helped about 14,000 grad students borrow close to $700 million and has expanded from business programs to engineering, law, and other disciplines. Of the slightly more than 1 million international students who studied in the U.S. in the 2017-18 academic year, nearly 429,000 studied business, management, or engineering, according to the Institute of International Education's most recent Open Doors report.

Stevens conceived Prodigy when he couldn't get a loan to pursue an MBA

From fall 2017 through fall 2018, Prodigy raised $1 billion, primarily in institutional debt facilities from banks including Deutsche Bank, Goldman Sachs, and Sumitomo Mitsui Banking. In November it unveiled refinancing plans for foreign borrowers such as Mazzafera living in the U.S. and the U.K. who'd taken student loans from other lenders. "There are international grads making an amazing salary, but they have $200,000 in student loans with co-signers or their family's home in India is being used as collateral," says Ricardo Fernandez, Prodigy's head of new businesses and strategic partnerships. He sees refinancing as a way to reach more of the 260 million people living outside their native countries.

Prodigy's thesis: Individuals of modest means who get into top graduate programs outside their home countries are good credit risks. But in many cases, particularly if they're from a developing country, they can't secure bank financing. Alternatives such as government loans and school scholarships exist, but access varies widely. "There's a spectrum," says Imran Kanga, director for recruitment and admissions at the Rotman School of Management at the University of Toronto. Countries such as India and China, which have hundreds of thousands of students abroad, have multiple options, while a nation such as Mongolia has nothing. "All of the other countries fall in between," he says. Kanga believes more banks should fund foreign students: "It's a profitable investment," he says. "It's a win for the bank, their economy, and for business schools like Rotman to attract talent from all over the world."

Prodigy's underwriting model pays more attention to earnings potential, while conventional lenders emphasize borrowers' current income and assets. Clients borrow an average of $40,000 and pay 5 percent to 8 percent fixed interest, plus Libor, which is variable. Nearly 80 percent of Prodigy's borrowers are from emerging markets, the company says; engineering is a key growth sector, especially among students from Brazil, China, India, and Russia.

Models like Prodigy's make sense, says Stevens, especially considering the $1.5 trillion student debt crisis in the U.S. "If you are borrowing against your own earnings potential over your life for certain degrees at certain universities, there's no issue," he says. "Lending someone $150,000 to do a cooking course in Idaho makes no sense whatsoever."

Stevens, a South African entrepreneur who couldn't get a bank loan after he was accepted into INSEAD's MBA program in 2004 in Fontainebleau, France, was convinced that a more accessible option—no co-signers or collateral required—would appeal to applicants. If you happen to have been born in San Francisco and are accepted into Stanford University, there are many sources of financing, he says. "But if you happen to come from Ghana or South Africa or Indonesia, your access to funds is completely different. This is purely because of structural issues; it has nothing do with you as a person. That's fundamentally unfair and a really big problem."

Businesses such as Prodigy are helping foreign students "who can't really fathom the kind of debt we're talking about in the U.S.," says Tim Mescon, chief officer of Europe, Middle East, and Africa at AACSB International, an accrediting body and alliance of business schools. "They're returning lending to where it began, which is really based on the integrity and quality of the individual. The traditional banking sector can't do that and doesn't do that. Circumventing banks is a massive opportunity."

Entrepreneur Mike Davis is co-founder and chief investment officer of Mpower Financing, a public benefit corporation in Washington, D.C., that was started in 2014 with a mission similar to Prodigy's. Davis also had trouble paying for his education. His parents had sold their home in Iowa and most of their possessions to put him and his sister through college after immigrating from Iran.

Davis's 41-employee venture earlier this year surpassed $1 billion in loan applications and has lent to thousands of students from about 100 countries. In November it finalized a $100 million credit line from Community Investment Management, an impact investor in San Francisco. Unlike Prodigy, it lends to both undergraduate and graduate students, offering fixed-rate loans of up to $50,000 at about 8.9 percent to 15 percent APR. Foreign students he lends to default far less frequently than their domestic counterparts, he says. "It's ridiculous—internationals getting loans get treated like second-class citizens." —*Nick Leiber*

THE BOTTOM LINE Fintech companies such as Prodigy and Mpower offer students outside their home countries more accessible loans that don't require co-signers or collateral.

The Fast Track to Being a CEO-Engineer

Berkeley's dual undergraduate program in engineering and business gets competitive

Shubham Banerjee is a typical teenager—playing football, losing himself in video games, doing homework—except when it comes to his career ambitions. The high school senior says he's known for several years that he wants to found and lead a company, to be a "legendary CEO." The founding part should come easy: At age 13, Banerjee started a company that makes Braille printers.

Last spring, as he started to consider colleges, he learned of a program at the University of California-Berkeley that would allow him to earn both a bachelor of science in engineering and a bachelor of business in four years. He recently was notified that he's among the fewer than 3 percent of about 2,500 applicants accepted into the incoming freshman class in Berkeley's Management, Entrepreneurship, & Technology (MET) program.

Interest in such combined programs is increasing among students and prospective employers, according to Phil Kaminsky, the executive associate dean at UC-Berkeley's college of engineering, and Michael Grimes, the head of technology banking at Morgan Stanley. "There is a shortage of coders who lead and leaders who code," Grimes says. "It's like looking for a needle in the haystack to find someone who is both."

Grimes pitched Berkeley, his undergraduate alma mater, on the concept of MET in 2016 and offered to donate a significant portion of the $10 million endowment needed to get it off the ground. He was inspired, he says, by the Jerome Fisher Program in Management & Technology at the University of Pennsylvania's Wharton School, started in 1977. His son graduated from that program.

Grimes also knows several of that program's graduates, including Herald Chen, who leads the technology, media, and telecommunications team in the Americas for the private equity firm KKR & Co. "Having people that are already more multifaceted, as opposed to going to engineering undergrad and then business school, it's a lot more efficient and a lot more grounding," Chen says. "The engineering background gives you more credibility to sit with the engineers in the room."

In its first year and a half—the inaugural class started in the fall of 2017—MET has drawn students from the U.S., Canada, and the U.K. Freshman Diego González chose Berkeley-MET over MIT and Carnegie Mellon's school of computer science. Born and raised in Puerto Rico, González was founder of his high school's entrepreneurship club and the U.S. Presidential Scholar winner from the island in April 2018. Berkeley's location, close to Silicon Valley, was appealing—he wanted to be in the thick of the tech industry. This summer, González will intern at Eventbrite, the ticketing company based in San Francisco.

Berkeley quickly got on board with the idea after the pitch. Grimes and his reputation in the tech industry—he's overseen some of the biggest tech deals of the past decade, including Facebook Inc.'s and Google's initial public offerings—lend a lot of credibility to the program, according to several Berkeley faculty and administrators involved in creating MET. Still, rolling out MET presented challenges. "Berkeley is a large institution," says former Haas School Dean Rich Lyons. "When you start talking about adding

new programs and dual degree programs," there are many questions to address: "How does the revenue flow? Who pays for what? What are the curriculum requirements?"

Grimes doesn't have a formal role at MET—he devotes a lot of time to connecting students and graduates with potential employers, carrying students' résumés in a folder or on a USB drive as he goes about his day job, meeting with the world's top technology execs. And he's the program's biggest champion—the vanity plate on his Tesla reads BKLYMET. "We are finding those needles," he says, "and putting them in a group of needles just as unique as they are." ——*Alex Barinka and Olivia Zaleski*

THE BOTTOM LINE Students and prospective employers, especially in the tech sector, increasingly are interested in dual programs such as Berkeley's MET, giving them an edge in their postgraduate job search.

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How Theresa May pushed past defeat and carried on

By Tim Ross, Kitty Donaldson, and Alex Morales

Deep inside the oak-and-stone interior of Parliament, surrounded by dusty, leather-bound volumes of parliamentary records, Theresa May waited quietly for her fate. At 7:30 p.m. on Jan. 15, after almost two years of negotiations, the prime minister had finally put her Brexit deal to a vote in the House of Commons for members to accept or reject.

Some 201 of May's allies came out in favor of the deal. But she was forced to watch as more than 430 others—including people she'd regarded as loyal—voted against it. The 230-vote defeat shocked even pessimists on her team. It was the worst loss for a British government in more than 100 years.

Even before the result was announced, some of May's friends were in tears at the scale of the unfolding disaster. They knew her career was on the line—and the country's economic stability in grave peril—as the prospect of leaving the European Union without an agreement loomed. Although clearly shaken, the prime minister was the calmest person in the room, consoling her distraught colleagues.

The meticulous May takes nothing for granted—even the certainty of losing an unwinnable vote. She had a victory speech prepared if, somehow, she defied the odds. It's a measure of the 62-year-old Conservative Party leader's addiction to methodical preparation that she was as ready for an unlikely triumph as she was for the inevitable failure.

It's been two months since that historic loss. May's premiership and her Brexit deal are still just clinging to life. She's now preparing for a second attempt to persuade Parliament to back her deal, in a vote she's promised to hold by March 12, and could even try a third time. Some of May's officials believe she has a chance—albeit a slim one—of winning. If she succeeds, May will have pulled off a political miracle no recent prime minister can match. It would, however, be a victory won through missteps, inconsistencies, reversals, and luck as infighting pushed her to change course again and again.

Nothing is certain. The U.K. is due to leave the EU on March 29, with or without a deal. But Parliament could yet decide to delay the divorce or even back out of it altogether. Based on conversations with current and former ministers and officials on May's team, many of whom asked not to be named, this is the inside story of how she's maintained her fragile grip on power, and—through management both fortuitous and maladroit—brought her country within reach of the Brexit it voted for almost three years ago.

May is intensely private. She once confided that she hadn't made a new friend since entering Parliament in 1997. The daughter of a vicar, she's said she wanted to be in politics since age 12. May lost both parents when she was in her 20s and has spoken of her sadness that they never saw her elected to Parliament. The one constant in her life since then has been her husband, Philip, whom she met when they were undergraduates at Oxford. He's her most important adviser and the only person she truly trusts. In their Downing Street apartment, the couple discuss every political question, from May's cabinet appointments to her ill-fated decision to call a snap election in 2017.

Although she also takes advice from a tight circle of aides,

If she succeeds, May will have
If she succeeds, May will have
If she succeeds, May will have

May makes her decisions alone, often late at night. Even loyal senior ministers find it impossible to predict what she'll do. Her two best qualities, all around her agree, are fortitude and perseverance. May, more than most leaders, has needed both.

The prime minister had faced political demise even before the humiliating January defeat. On Dec. 12, 2018, after months of threats from pro-Brexit Tories to oust her, claiming she was betraying their vision of a clean break with the EU, the moment finally came: a formal vote of no confidence in her leadership of the Conservative Party. If she lost the secret ballot of all 317 Tory members of Parliament, she would be out as prime minister. She struck a desperate bargain with her colleagues. If they voted to keep her for now, she'd step down before the next general election. "In my heart, I would like to fight the next general election," May told her party, but she conceded this wouldn't be possible.

She won that vote, wounded and weakened. More than 1 in 3 Conservatives voted to get rid of her, and her promise to resign before the 2022 general election has led to a disastrous breakdown in discipline at the very top of the government that continues to haunt her to this day. In her cabinet, rival ministers jostle for position as potential leaders. The details of supposedly confidential meetings routinely leak to the press, as factions compete to get their version of events out first. And, though officials say they're preparing the U.K. to crash out of the EU without a deal, insiders admit there's no way the country will be ready on March 29.

She faced another threat on Jan. 16, the day after her historic defeat. The confrontation would, however, end in victory. The opposition Labour Party leader, Jeremy Corbyn, called a formal vote of no confidence in the government. Had May lost, her administration would have collapsed, potentially triggering a general election. But she turned for help to a man she'd fired, questioning his loyalty, when she became leader in 2016. Back in the cabinet as environment secretary, Michael Gove, an eloquent 51-year-old Scot, was given the job of rebutting Corbyn's attacks. He delivered a barnstorming speech, savaging the Labour leader as a threat to national security who wanted to get rid of the U.K.'s nuclear weapons. Hundreds of Conservatives roared their approval on the benches. May was delighted and, in a rare sign of warmth—her nickname is the "Maybot"—patted her colleague vigorously on the back. The Tories who'd buried her Brexit pact 24 hours earlier backed her to carry on as prime minister. Corbyn had united them.

Still, she had to deal with Parliament rejecting her proposal and not saying what kind of divorce it preferred. In public, May said she wanted cross-party talks with Corbyn and others to find a compromise. Behind the scenes, she promised Conservatives she'd get her deal through with the votes of Tories and the Democratic Unionist Party (DUP), which props up her minority government.

PREVIOUS SPREAD: ROTA/I-IMAGES/POLARIS

pulled off a political miracle
pulled off a political miracle
pulled off a political miracle

She quietly encouraged senior Tories on both the pro- and anti-Brexit wings to start working on a plan to unite the warring factions. Kit Malthouse, a burly junior minister, gathered a group for secret meetings. Snacking on segments of citrus-flavored chocolate balls, a peculiarly English confection called Terry's Chocolate Orange, the rival Tories overcame their divisions. They agreed on a blueprint that would come up with a technological solution to replace the most contentious part of the Brexit accord, the Irish backstop—a continuation of the EU's customs-check-free passage at the U.K.'s land border with Ireland. Brexiters hate it because it would subject the U.K. to European rules indefinitely. Technology, Malthouse and others say, would circumvent that, keep commerce moving, and avoid the need for building border checkpoints and barriers.

May was unimpressed. When she met Malthouse the week of Jan. 21, she thanked him but concluded the plan wouldn't work and walked out of the room. An agitated Parliament soon drew up proposals to take Brexit policy out of her hands in a vote on Jan. 29. May had to do something. So, on Jan. 28, she shifted her position yet again. Some 300 Tories packed a room inside Parliament to listen as she abandoned her own exit deal, throwing her weight behind a proposal by Tory MP Graham Brady to rip out the hated backstop. That amendment, however, was only feasible if the government seriously entertained Malthouse's high-tech plan. She promised to look into the proposals she'd dismissed. The Brady amendment won, and May rejoiced. At last, the Tories were united behind a Brexit policy, and she had a clear message for Brussels: Parliament will accept this exit deal—just get rid of the backstop.

The EU howled. How could May have trashed a central part of the agreement she'd spent 18 months negotiating? The European Commission had warned May's team not to back the Brady plan, because there was no way they could agree to ditch the backstop. May decided to shake up her team. She ordered Geoffrey Cox, the attorney general, to go to Brussels and reopen talks on alternatives to the backstop. Cox, a wealthy Brexit-supporting lawyer with a booming baritone voice, was seen as credible among euroskeptics, because he'd spent his time at the top of government leading the revolt against May's deal from within her cabinet. Many Tories believe Cox's verdict will be crucial. If he were to back the plan, the DUP and pro-Brexit Conservatives could, too. The rifts, however, are such that Cox now won't tell the cabinet what he's doing. He knows his colleagues can't be trusted to keep information to themselves.

Then on Feb. 14—two weeks after May gained a new mandate to renegotiate her exit deal—Parliament voted to take it away again. Pro-Brexit Conservatives had flexed their muscle to prevent her from softening her position. They wanted to keep a hard Brexit as an option. May watched the result on television from inside her private parliamentary office, then left in a fury, storming out straight to her car. One member of Parliament said it was the angriest May had ever appeared. Inside Parliament, a fierce row broke out among the Tories. One minister was seen remonstrating with a Brexit-supporting Conservative rebel, who let fly a volley of abuse in response.

The Valentine's Day defeat was illuminating for the EU, proof that there was no stable majority in the Commons for anything. It also was a turning point for May's ministers who didn't want a no-deal Brexit. Three of May's most senior ministers decided to step in to force her their way. On Feb. 18 they marched into her Downing Street office. Led by Pensions Secretary Amber Rudd, they told May that if she didn't rule out a no-deal departure, they'd vote against her on Feb. 27, when Parliament was to consider Brexit options once more. May's aides feared the three ministers could all quit at once, with as many as 20 junior ministers threatening to follow.

On Feb. 25, May was in Sharm el-Sheikh, Egypt, for an EU-League of Arab States summit. Over a breakfast of croissants, cheese, and coffee, German Chancellor Angela Merkel asked May about reports suggesting the prime minister could postpone Brexit. May replied that she didn't want to extend the deadline, but the question wouldn't go away. Back in London the next morning, May and her ministers sat around the cabinet table inside 10 Downing Street for what was the stormiest meeting of the year. Normally loyal ministers were enraged at the option of a delay, and even more furious with Rudd for pushing May into the move. May herself was said to be angry. But her team knew that offering Parliament a chance to delay Brexit would be the only way she could keep control of the process. And that was the compromise her team came up with—and Parliament backed—on Feb. 27: May would once again negotiate with Brussels for a revised deal, a quixotic quest, and if the Commons turned that down, then it could vote to delay the divorce and take a hard Brexit off the table.

Things are still uncertain. The threat of the U.K. leaving the EU with no deal on March 29 seems to have diminished, with an extended deadline a far likelier outcome. But May's deal isn't dead yet, because some of her fiercest euroskeptic critics could vote for it rather than let Brexit be delayed. In a March 4 note, Eurasia Group Ltd. Managing Director Mujtaba Rahman wrote, "Many of the 118 Conservative MPs who voted against it in January are ready to support the agreement in a crucial vote over the next two weeks."

If May succeeds in passing a deal, it will be due in large measure to her stubborn refusal to give up. "There is a sense of exasperation and respect from colleagues in equal measure," says Tory MP Keith Simpson. Her ex-director of communications, Katie Perrior, says, "People criticize her for being bland and vanilla in her approach, but maybe being all things to all people has been the only way to keep her deal still in play."

And despite the pressure of Brexit, May hasn't lost her sense of humor. After she survived the leadership challenge in December, her team prepared a celebration with wine and her favorite snack: potato chips. "I'll be back in a minute" May said on the way to meet the press. "Don't eat all the crisps." Ⓑ

LEADERSHIP
Merging is a beginning. Vanquishment is progress.
Undeath is success.

The Night Is Dark and Full of Netflix

Can AT&T's corporate mindset transform HBO, the network behind *Game of Thrones*, into the king of streaming?

By Felix Gillette

Richard Plepler, the gregarious and perpetually tanned head of Home Box Office Inc., had a saying: HBO is a media company, not a technology company. The statement grew more radical with each passing year as seemingly every other business—car manufacturers, cigarette makers, pizza chains—declared themselves technology companies.

Under Plepler, who became co-president in 2007 and chief executive officer in 2013, HBO didn't pretend to be a bootstrapping startup; it was a house of art, not science. The network cultivated the top creative minds in TV, racked up Emmys, threw killer cocktail parties, and generated billions of dollars in profit for its corporate parent, Time Warner.

Then, on Feb. 28, what felt like one of the last cultural joyrides in the media business ended, as one might expect, in pools of corporate-acquisition bloodshed. Plepler, 60, announced in a memo to his staff that he was resigning. AT&T Inc., which had acquired Time Warner Inc. for $85.4 billion, had just beaten back one final antitrust challenge from the U.S. Department of Justice and was preparing to reorganize the assets of what's now known as WarnerMedia LLC.

Later this year, AT&T executives will introduce a streaming video service featuring WarnerMedia content, which includes brands such as TBS, TNT, and the Warner Bros. studio. HBO will play a crucial, if still uncertain, role as one of AT&T's keys for unlocking digital fortunes.

But interviews with more than a dozen former Time Warner and HBO employees, many of whom declined to be named discussing a former employer, suggest that maximizing HBO on the internet has long enchanted and frustrated the scores of executives who've tried. "HBO has been the ultimate Gordian knot," says Jamyn Edis, a former vice president of HBO's consumer technology group who's now an adjunct professor at New York University's Stern School of Business. "It's been a seemingly intractable set of problems: long-term contracts written before the dawn of digital, 30-year-career executives with no incentive to hurt the Time Warner cash cow, an institutional distaste for technology—'we're in the content business'—and the internecine tribal warfare typical of any organization."

According to the legend of the Gordian knot, Alexander the Great solved the conundrum not by disentangling each snag, but by slicing through them with a sword. AT&T is swinging its blade at a time when Netflix, with 58 million paying U.S. customers, has far outpaced HBO, which has an estimated 8 million standalone streaming subscribers.

On April 14 the eighth and final season of HBO's *Game of Thrones* will return with its dragons and undead warriors. Until then, the only realms likely to see more upheaval will be AT&T's newly conquered kingdoms, which will undergo a corporate rejiggering. Rather than witness the carnage likely under House Telco, Plepler abdicated his throne. (Through an HBO spokesperson, he declined to comment.) He's left his supporters to grapple with an unsettling thought: What if the algorithmic data miners were right all along?

Twenty years ago, as fear of the Y2K bug gripped the land, HBO hired a new chief information officer. Michael Gabriel, who'd worked at EMI, the giant music conglomerate, watched as Napster and other downloading services unleashed havoc on the industry. He asked Jeff Bewkes, then HBO's CEO, how he wanted to deal with the upheaval when it eventually hit TV.

Bewkes wanted HBO to be all in on the internet when the time was right, Gabriel says, but he didn't want to spend too much money or be premature. HBO's business model was reliant on relationships with cable- and satellite-distribution partners, who accounted for virtually all revenue. Gabriel assembled a team to experiment with the emerging technology of playing TV and movies on the internet. (Through a spokesperson, Bewkes declined to comment.)

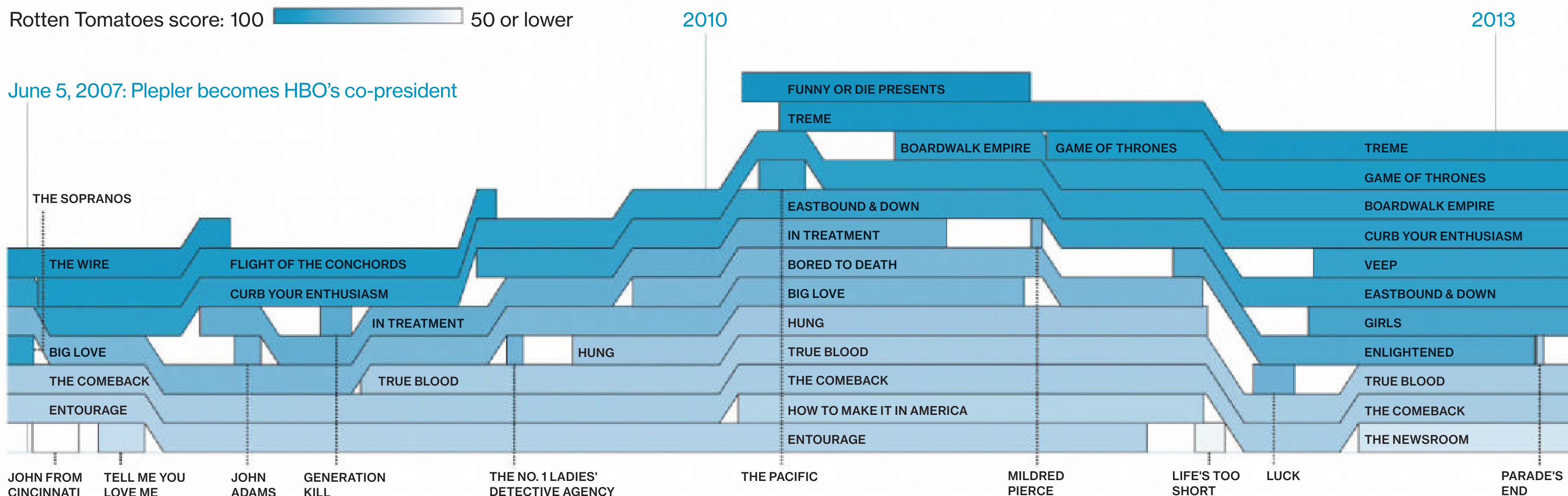
From the outside, people think of HBO for its innovative programming—*The Sopranos*, *Sex and the City*, *The Wire*, and, of course, *Game of Thrones*. But people who've worked there describe a hidebound institution. Decisions are made slowly and by consensus; longtime employees guard the network's lucrative, award-winning status quo. From the start, HBO's internet team was met with occasional outbursts of resistance. Gabriel recalls a manager meeting when a business-affairs executive unloaded. "He began vehemently shouting at me, 'You're going to destroy a $3 billion business,'" Gabriel says. (The traditional business would be fine, growing to $6.6 billion in annual revenue and more than 130 million global cable and satellite subscribers by 2018.)

In 2006, HBO began beta-testing HBO on Broadband, a service that let people watch its programming on their computer, with Time Warner Cable subscribers in Green Bay, Wis. Initial feedback was encouraging. At the time, Gabriel was keeping an eye on an emerging competitor. In February 2007, Netflix Inc., a data-minded company in ▶

PHOTO ILLUSTRATION BY CAROLINE DAVID; PHOTO: COURTESY HBO

Father of Dragons: Plepler's Progeny at HBO

Rotten Tomatoes score: 100 50 or lower



California best-known for lending DVDs by mail, launched a service streaming movies and TV over the internet.

An idea spread through HBO: What if Time Warner bought Netflix? It would be the perfect marriage of art and science and give Time Warner enormous leverage over the downstream markets for TV shows and movies. The concept made its way up the chain of command, where it was duly slain. HBO and Time Warner executives thought the roughly $1 billion to $1.5 billion it might cost would be better spent on programming. "There was a belief that Netflix was going to implode," Gabriel says, "either due to the escalating costs with their model or due to content no longer being licensed to them."

By 2018, Netflix was generating $1.2 billion of annual net profit on $15.8 billion of revenue. Its current market value is $154 billion.

HBO expanded its streaming service in 2010 to existing TV customers in the U.S. through a mobile and desktop service called HBO Go. Cable and satellite affiliates would handle headaches involving customer service, while the company would pay to program and maintain the apps.

As Netflix began its hundredfold ascent in market value, it attracted reams of favorable press and industry observers began to see it as an existential threat to HBO. In a December 2010 *New York Times* interview, Bewkes, who by then was overseeing all of Time Warner as CEO, weighed in on his competitor. "It's a little bit like, Is the Albanian army going to take over the world?" he said. "I don't think so."

Inside HBO, however, there was growing acknowledgment that streaming products would be a vital part of the future. This led to skirmishes to claim control and credit for HBO Go. Otto Berkes, a relative newcomer to the network who'd spent much of his career at Microsoft Corp., won out.

In December 2012, HBO named Berkes its next chief technology officer. Until that point, the implementation of the company's internet strategy had relied on outside vendors for such things as designing user interfaces. Berkes told colleagues HBO would be better off developing and owning its own streaming technology and interfaces, as Netflix did. He wanted to create a platform that could stream not only HBO's programming but also all of Time Warner's.

In addition to HBO, Time Warner owned Turner Broadcasting System Inc. (home to the Cartoon Network, CNN, TBS, TNT, and Turner Classic Movies) and Warner Bros. (*Harry Potter* and *Teen Titans Go!*, among many other franchises). Combining these entities into one streaming service was tantalizing. In theory, the brand managers should have worked together as part of the same conglomerate. But in practice, each property acted like an independent nation-state.

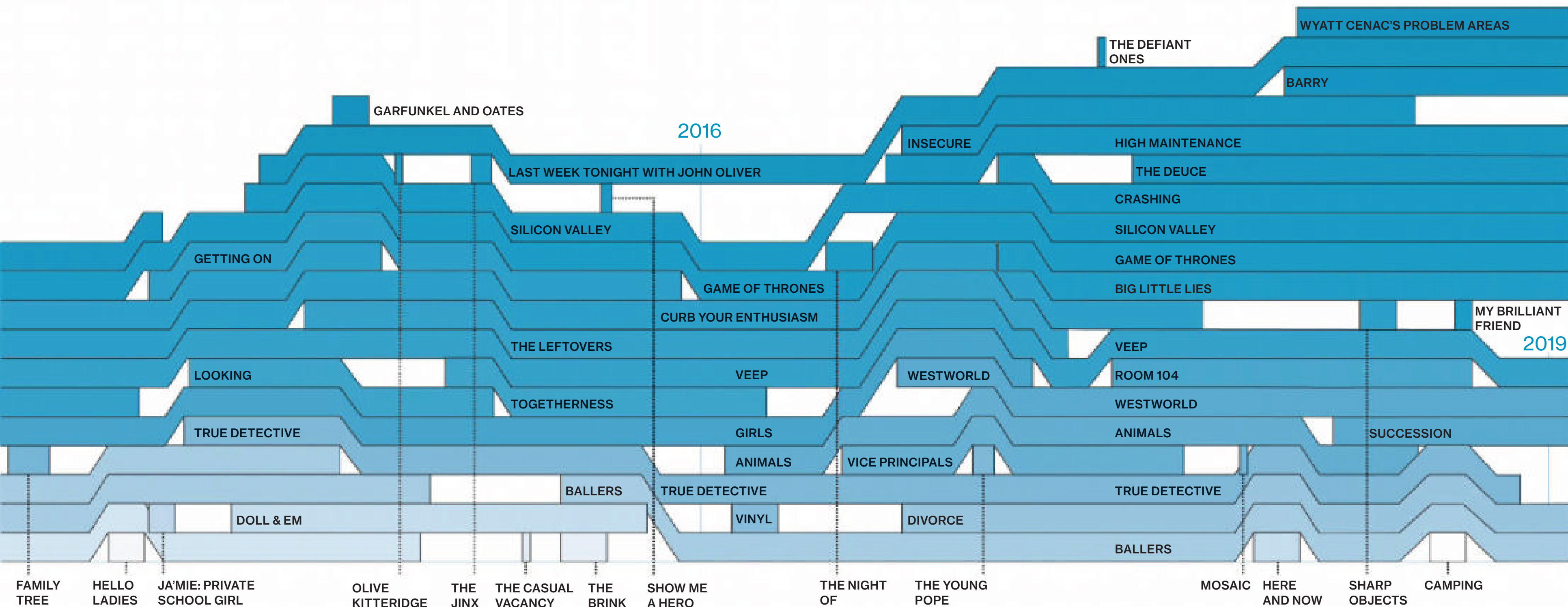
Building a streaming platform from scratch was expensive. It could have cost hundreds of millions of dollars before any significant revenue began flowing in. While Berkes attempted to loosen the corporate purse strings, he began assembling a team of engineers and product designers inside a new HBO office in Seattle. In New York, key members of the internet team departed. In February 2013, Netflix premiered *House of Cards*, one of its first big forays into HBO-esque programming. "The goal is to become HBO faster than HBO can become us," Ted Sarandos, Netflix's chief content officer, told *GQ*.

Sarandos didn't need to worry. In April 2014, when fans logged on to HBO Go to watch the fourth season premiere of *Game of Thrones*, the service crashed; it continued to do so on successive Sunday nights. Howling subscribers inundated social media.

While the tech team in Seattle worked to fix the problems, it wasn't always on the same page with the businesspeople in New York. That spring, HBO licensed the network's library to Amazon Prime Video, the giant retailer's streaming service. For HBO it was a high-margin arrangement that would pad profits. (Cantor Fitzgerald analyst Youssef Squali estimated the deal would be worth $200 million to $400 million a year to HBO over a four-year period.) But the move didn't sit well with some members of the tech team, who worked near Amazon.com Inc.'s Seattle headquarters and saw the company as a fierce competitor. Training people to go to Amazon Prime Video to watch classic HBO shows, they worried, could undermine the appeal of HBO's own internet offerings.

While questions remained about HBO's long-term vision, short-term emergencies intervened. In June 2014, Rupert Murdoch's 21st Century Fox Inc. made a surprise $80 billion bid for Time Warner. Bewkes rejected the offer, but it ratcheted up the pressure on him to wow Time Warner investors.

That October he made his own unexpected announcement: HBO would soon unveil an internet subscription



DATA: HBO, IMDB. CONTINUING SERIES ARE THOSE LISTED AS AIRING CURRENTLY, AIRING SOON, OR RENEWED ON HBO.COM

service for everyone—even consumers who didn't subscribe to cable or satellite TV. As Plepler put it, "There are 80 million homes that do not have HBO, and we will use all means at our disposal to go after them."

The development of a direct-to-consumer product, which would eventually be named HBO Now (HBO Go would continue to serve paying cable and satellite customers), was under way in Seattle. But Bewkes's announcement accelerated the timeline. Again, creating a technology platform would be expensive, mostly because doing so required disciplined, talented, and well-managed people working with unity of purpose—which fairly described the opposite of Time Warner culture. Former colleagues say Plepler and Berkes spoke different languages. Plepler was fluent in the vernacular of Hollywood; Berkes was more of a quant. Multiple sources say the relationship frayed. (Berkes declined to comment.)

HBO executives started considering outside help. Shelley Brindle, an executive vice president on HBO's domestic distribution and marketing team, had recently attended Google Zeitgeist, a conference in Scottsdale, Ariz. There she'd met Kenny Gersh, an executive with MLB Advanced Media, a Major League Baseball limited partnership that had become expert in streaming high-profile TV events. As it turned out, the same Sunday night in April when HBO Go melted down during the *Game of Thrones* premiere, MLB Advanced Media had successfully streamed World Wrestling Entertainment Inc.'s biggest event of the year, *WrestleMania*. In November, Plepler made the switch.

A month later, news broke that HBO was yanking the plug on its internal direct-to-consumer streaming product and outsourcing the work to MLB Advanced Media. Berkes resigned.

In March 2015, Plepler introduced HBO Now at an Apple Inc. press conference in San Francisco. For three months, the app would be available exclusively on Apple devices. The *Game of Thrones* season premiere went off without a hitch in April. By February 2016, about 800,000 subscribers were paying $14.99 a month for HBO Now. Finally, a reign of stability took root.

It lasted about a year. With the market growing quickly, MLB Advanced Media spun off its streaming division to form a separate company called BamTech. Over the summer, Walt Disney Co. acquired a 33 percent stake for $1 billion. Suddenly, the digital future of Time Warner's prized network depended on a service controlled by a chief rival.

Enter House Telco. In October 2016, AT&T bid $85.4 billion for Time Warner. The telecom wanted to diversify its business to outmaneuver rivals Verizon Communications Inc. and Sprint Corp. And AT&T execs believed Time Warner's entertainment assets, led by HBO, could help it take on Netflix. But first the company would have to move HBO off Disney's property.

For many months, HBO waited while the offer navigated regulatory shoals. The whole time, the role of CTO remained vacant. In summer 2018 the network closed out its deal with BamTech and repatriated its streaming service. These days, Netflix's technology can make HBO's apps look like portals to the Dark Ages. In "Bandersnatch," a recent special episode of *Black Mirror*, Netflix watchers could tap on their screen to alter the narrative.

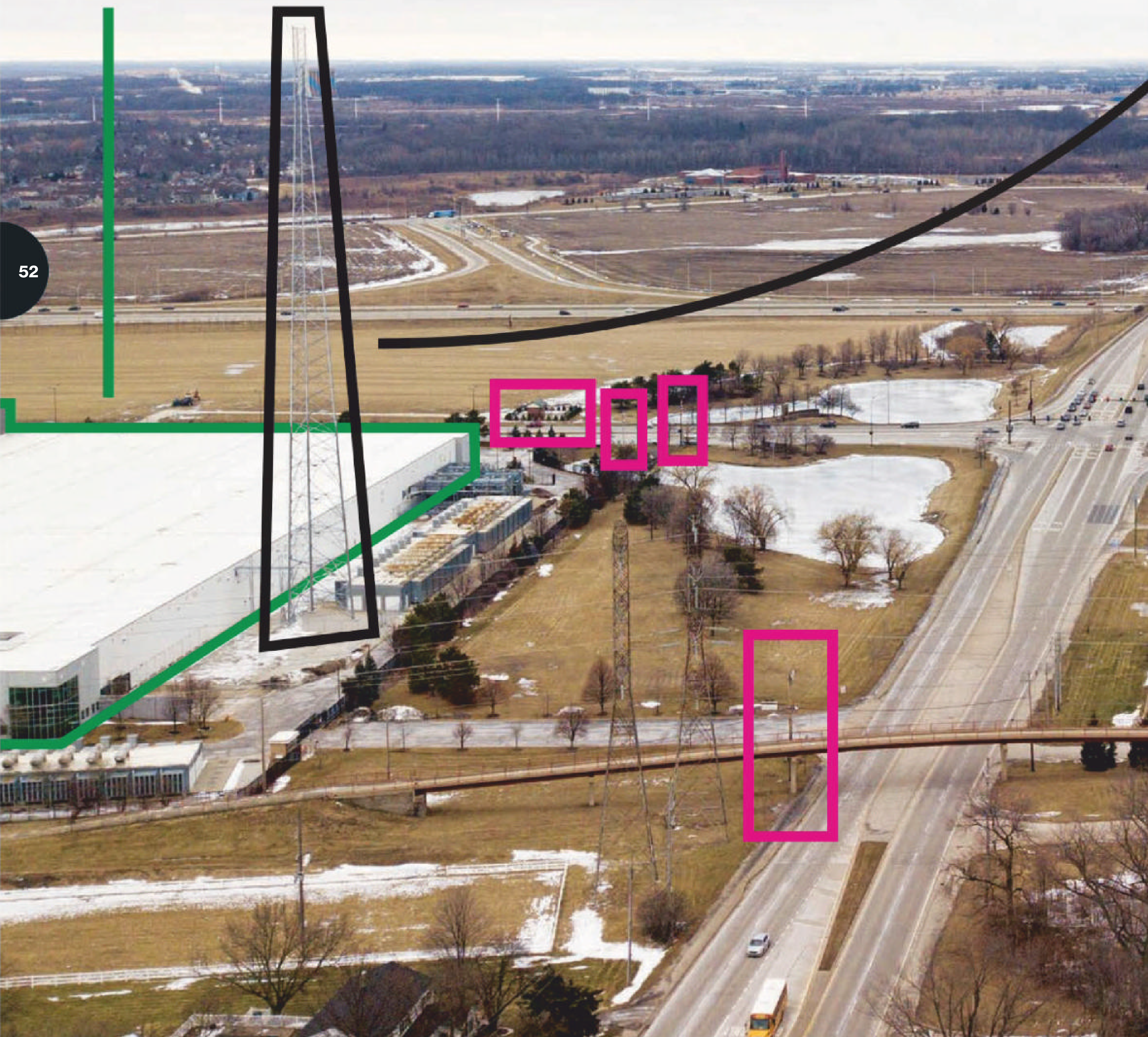
Netflix makes HBO's apps look like portals to the Dark Ages

After years of experimentation, HBO still doesn't have much control over a key aspect of the direct-to-consumer streaming experience—the consumer. "We believe HBO Now has over 8 million subscribers today, however, the overwhelming majority are... via Amazon Prime, Hulu, etc., with a small fraction of subscribers truly direct-to-consumer," writes Rich Greenfield, an analyst with BTIG LLC.

On March 4, AT&T named Robert Greenblatt, former head of entertainment at Showtime and NBC, the chairman of WarnerMedia Entertainment. In that role, Greenblatt will oversee the company's direct-to-consumer streaming service. Whenever that product is ready, it will enter a brutally competitive market. Two other major conglomerates, Disney and Comcast Corp., plan to release similar services to take on Netflix, Amazon, and Hulu. In an interview with Bloomberg News, Greenblatt said many details about how HBO and the other Turner and Warner Bros. assets would be combined into the mix had yet to be settled—the same challenge the network was working on in 2013. "It won't be easy to coordinate it all," he says. Ⓑ —*With Gerry Smith and Lucas Shaw*

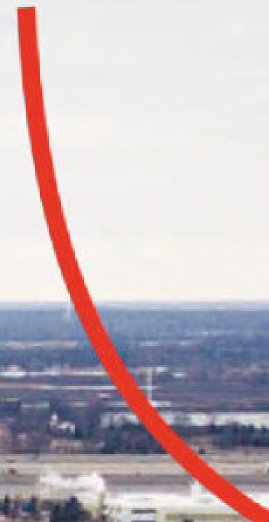
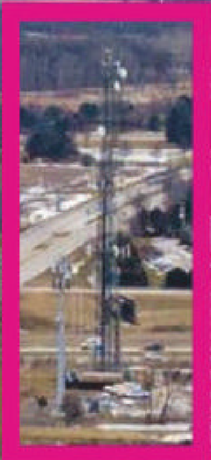
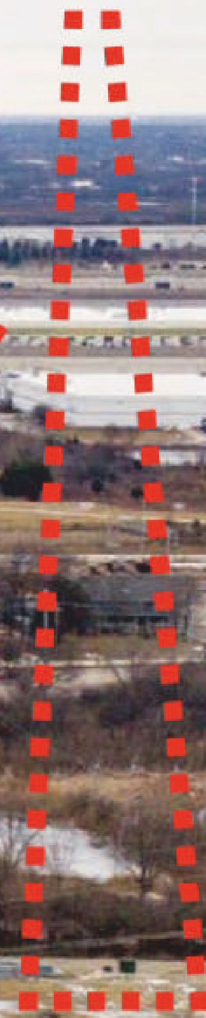
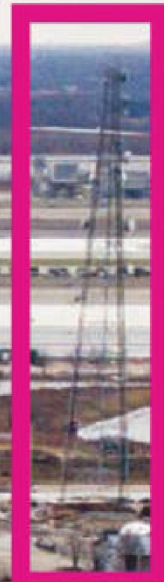
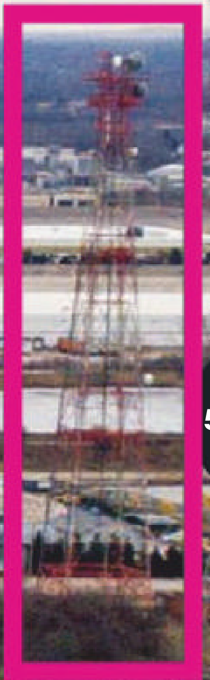
❶ The CME data center in Aurora, Ill., is at the heart of modern financial markets

❷ Traders have been inching their antennas ever closer—all to save millionths of a second



❸ The building's owner erected a tower to end that gamesmanship by providing a perch where any trader could cozy up

❹ But now a proposed tower has brought things to a standstill

A Tale of Two Towers

By Nick Baker and Bryan Gruley
Photographs by Jason Reblando

n a weedy field 35 miles west of Chicago squats a tidy red-brick building with a peaked roof, about the size of a one-car garage. Against the eastern wall, reaching just above the roofline, are poles equipped with small dish antennas that send microwave signals to and gather them from financial markets on the East Coast. At the same time, the site communicates via subterranean cable with an enormous steel-and-glass building across the street. That fortress is home to CME Group Inc., a $63 billion exchange where some of the world's most vital financial products trade, including derivatives on oil, gold, U.S. Treasuries, and the S&P 500. If you want to be a serious player in global markets, you have little choice but to stash your trading machines here.

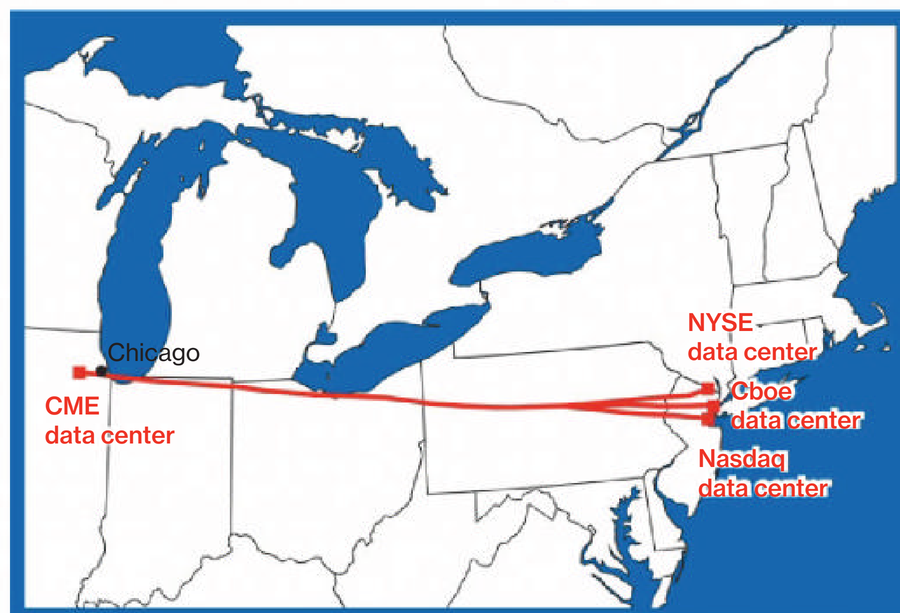
The little brick hut in Aurora, Ill., is part of New Line Networks LLC, a joint venture of Chicago's Jump Trading LLC and Virtu Financial Inc. of New York City, two of the nation's most successful high-frequency trading firms. In 2016, Jump Trading paid $14 million for the 31-acre plot where the building sits to be close to the CME center.

Not far away, high-frequency trading company DRW Holdings LLC of Chicago, angling to be even a few yards nearer, slapped an antenna on a light pole. Next to that stands yet another pole rigged with antennas, this one owned by McKay Brothers, an Oakland-based company that builds telecommunications networks and leases access to traders.

Up and down adjacent roads, trading companies have erected or rented space on more towers and poles, all of them arrayed with white circular dishes. These companies, too, are seeking to cozy up to the CME data center, trying to shave millionths of a second off trades. They save that time by keeping their data in the air, where it travels at maximum speed, for as long as possible. The closer their dishes to the data center, the shorter their underground connections, the speedier their transmissions.

In a bid to end the gamesmanship, CyrusOne Inc., the Dallas company that owns the CME center, last year erected a 350-foot-tall wireless tower next to the building, closer than any trading firm could otherwise get. The tower was supposed to put everyone on equal footing and make those roadside antennas obsolete by letting all traders have the same very short link to CME. Not coincidentally, the traders

The Fast Lane



DATA: MCKAY BROTHERS

would pay rent to CyrusOne—the tower has room for about 35 dishes.

But the CyrusOne tower stands unused, partly because a smaller company, Scientel Solutions LLC, said it planned to build its own tower about 1,000 feet east, which CyrusOne says would obstruct communication to and from the data center. CyrusOne sued to block Scientel's tower. At the moment, Scientel's development on its 2.7 acres consists of a construction trailer, a portable toilet, and a pile of metal poles.

The unlikely catalyst for this gazillion-dollar standoff is a collection of elected officials in Aurora, a quaint river town best known as the fictional setting for the *Wayne's World* movies. The Aurora City Council approved the CyrusOne tower, then turned Scientel away at CyrusOne's behest, then flip-flopped and approved the Scientel tower, which sent CyrusOne's lawyers running to the federal courthouse in Chicago, where the case has ground on for more than a year. CyrusOne, Scientel, and CME declined to comment for this story.

It isn't clear that the Aurora council fully comprehended the legal and technological issues involved in allowing the Scientel tower. Alderman Bill Donnell, a retired parks director who changed his Scientel vote from no to yes, says he didn't understand at first "how important we are" in the high-frequency trading arena. "I came from being a guy who didn't know where the cloud was to realizing speed matters," he says. "I didn't realize being a millisecond faster was all that important."

Traders' quest for the slimmest sliver of advantage is as old as markets. In the 19th century, Reuters used carrier pigeons to speed the delivery of stock prices. More recently, Chicago pit traders donned platform shoes so they could see and be seen better on crowded trading floors. Today, getting an edge is all about the speed of light: 186,282 miles per second.

In his 2014 book *Flash Boys*, Michael Lewis describes how a startup called Spread Networks dug through mountains and tore up parking lots to lay what became the straightest fiber-optic line between trading centers in New Jersey and

Chicago, because the more direct the line, the faster data zipped through it. When Spread's service made its debut in 2010, it could shoot trades from Chicago to the Nasdaq data center in Carteret, N.J., in less than 7 milliseconds (a millisecond is one-thousandth of a second). In other words, the data line moved information at about two-thirds the speed of light.

By the time Lewis's book came out, Spread's technology was essentially obsolete for trading, overtaken by microwave radio transmissions, which can carry data through the air at about 99 percent the speed of light. Microwaves are faster because the glass or plastic in fiber-optic lines slightly impedes signals; air poses less obstruction. Also, microwave networks generally require less work and cost to build than fiber line does, partly because the U.S. is dotted with cell towers that can accommodate microwave antennas. The usefulness of Spread's service dwindled to the point that the company, which according to Lewis spent about $300 million to launch its network, was sold for $131 million a year ago to Zayo Group Holdings Inc.

Microwave networks rely on line-of-sight transmissions—a microwave dish has to be able to see the dish it's communicating with. The Earth's curvature forces traders to relay their signals from towers that are typically spaced every few dozen miles. Tall spots that see farther can stretch those distances; some firms are licensed to use antennas atop the Willis Tower (née Sears), Chicago's tallest building.

The CME data center owned by CyrusOne sits on the southwestern corner of an intersection just south of an Interstate 88 exit. Most of the wireless dishes belonging to traders are on three tall towers kitty-corner from the center. New Line, McKay, and DRW, by getting just a few hundred feet closer, have a measurable advantage. McKay says its system can zing a trade from Aurora to Carteret, or Carteret to Aurora, in 4 milliseconds, roughly a hundredth of the time it takes a major-league fastball to reach home plate.

In March 2016, CME sold the building for $131 million to CyrusOne, a real estate investment trust that owns more than 40 such centers and now leases the Aurora site to CME. CyrusOne announced an expansion, then laid plans for its tower, which the Aurora City Council approved in March 2017. The city required CyrusOne to lease traders space on the tower at fair market rates; the intent was to "equalize wireless access to the CME," the company says in court filings. The matter seemed settled. Then, two months later, Mayor Richard Irvin took office.

Irvin, a former prosecutor and criminal defense attorney who was born and raised in Aurora, won the mayoral seat partly on his vow to expand the local economy. He'd ▶

Scientel's tower-in-waiting

◀ barely taken the oath of office when Scientel came calling. Irvin was keen to listen.

The company told the mayor it wanted to move its headquarters from another Illinois town to a patch of vacant Aurora land near the CME data center. There was a catch: Scientel would bring its 50 jobs and their $100,000-a-year average salaries only if Aurora let it build a 195-foot-tall communications tower on the site.

Aurora isn't a small town—with a population of 200,000, it's Illinois's second-largest city after Chicago—but it has that feel, with century-old buildings and an overhead train trestle winding through downtown. Condos and restaurants have sprouted around the grandiloquent 87-year-old Paramount Theatre and an 8,500-seat concert venue along the Fox River. Irvin thought Aurora could do even better, and in particular it could be getting more value from the fiber-optic ring the city built over the past decade on land around the I-88 interchange near the data center. The land was undeveloped, and only about 5 percent of the ring's capacity was in use.

Scientel, based 15 miles away in Lombard, Ill., designs, installs, and maintains wireless networks that help municipalities link police departments, medical centers, and other vital facilities. From a new $4.5 million headquarters at the I-88 exit, Scientel proposed to use its tower with Aurora's fiber-optic ring. The company made little if any public mention of doing any business with traders.

"This area is very attractive to us," Scientel President Nelson Santos told the Aurora Planning Commission in September 2017. "Our customers need to get to the cloud, and this is the way to do it." The Planning Commission recommended that the City Council endorse Scientel's tower plan.

This wasn't going over well at CyrusOne, which with $800 million in annual revenue dwarfs Scientel, at about $20 million. Within days of Scientel's formal tower request, CyrusOne was scheming to torpedo it. "If you can get the [Scientel] tower coordinates so we can see where exactly they want to place their tower, then we can do a [frequency] study and come up with some reasons for objecting," an outside engineer for CyrusOne emailed another engineer in June 2017, according to federal court filings. Other CyrusOne emails showed that the company "assembled a team of lawyers and technical people" to work against Scientel's tower, a federal judge found in a recent ruling.

CyrusOne has asserted in court that its main concern was that Scientel's proposed tower would interfere with transmissions from CyrusOne's tower. The Scientel structure would "block 50 percent of the transmission from our tower," a CyrusOne attorney later told a federal judge. "So our tower will essentially be useless for the purpose that it's being built for."

CyrusOne representatives pressed the point to Aurora aldermen. At a meeting in November 2017, the City Council voted 7 to 3 to deny Scientel its tower. The mayor—who didn't have a vote—wasn't pleased. "What the aldermen pretty much said was they don't want 50 jobs," he told the local *Beacon-News*. He had staffers lobby council members, emphasizing Scientel's contention that only the Federal Communications Commission—not Aurora—could legally decide whether one tower might interfere with the other.

The council reconsidered in January 2018. A top Scientel executive told the council the company couldn't afford space on CyrusOne's as-yet-unbuilt tower for at least $6,000 a month. Also, because Scientel would be working with safety agencies, it would need around-the-clock access that would be hindered by the data center's strict security procedures. Now the council swung in Scientel's favor, 9 to 3.

When Irvin made his State of the City Address in April at the Paramount, Scientel chipped in $10,000, the biggest political contribution the company had ever made. By then, CyrusOne had sued Irvin, the City Council, and Scientel.

Two unsettled questions dominate the thousands of pages filed in federal court: Would the Scientel tower in fact interfere with CyrusOne's? And what motivated Scientel to place its tower on that particular spot?

Microwave transmissions can become garbled or be blocked altogether when two entities send data over the same electromagnetic frequencies or when something—a mountain, say, or a skyscraper—blocks a network path. Part of the problem in determining whether Scientel's tower would interfere is that it doesn't yet exist, and CyrusOne's tower,

The case raises the obvious question of why Scientel would plant its tower right where critical streams of data are flowing if it didn't want to interfere—unless, of course, the company has designs on getting into the trading business

Mayor Irvin

though it's standing, doesn't yet have any antennas on it.

In court, arguments about interference have revolved around dueling scientific analyses that seek to anticipate where data flowing to or from one tower might encroach on data from the other. CyrusOne maintains that the Scientel structure would pose an obvious line-of-sight obstruction, particularly on the lower portion of the CyrusOne tower. If potential clients balk at placing dishes there, it could cost CyrusOne as much as $1.7 million in annual revenue, the company said in a court filing.

Scientel counters that CyrusOne has resisted providing specifics about the frequency bands that CyrusOne's trading clients could use, thus preventing Scientel from engineering its tower to avoid conflicts. All sorts of other nearby utility towers could, in theory, block CyrusOne, Scientel says, but CyrusOne isn't complaining about those. Scientel has also tried to broaden the issue. "What if Scientel sought to build a hotel due east of CyrusOne?" the company said in a court filing. "Could CyrusOne stop that?"

Scientel says it chose its site because it was affordable and offered easy access to Aurora's fiber-optic ring and I-88. "In reality, this case has nothing to do with the potential interference of radio waves," it said in court documents. The suit was about CyrusOne's "quest to be a monopolist tower landlord."

Still, the case raises the obvious question of why Scientel would plant its tower right where critical streams of data are flowing if it didn't want to interfere—unless, of course, the company has designs on getting into the trading business. In court filings, Santos avers that Scientel "is not a trading firm." But the company does have a foothold in the industry.

Like trading companies, Scientel has FCC licenses to transmit between Aurora and New Jersey. Two years ago, it sued a former employee for allegedly stealing proprietary documents. The title of one allegedly pilfered file contains the phrase "ICE - NY4," an apparent reference to Intercontinental Exchange Inc.—a significant futures market and the owner of the New York Stock Exchange—and to a key data center in Secaucus, N.J. "This file contains a line-by-line cost estimate for an upcoming project for one of Scientel's largest clients in the financial industry," says a document in the lawsuit. Another file, partly titled "Aurora to NY4 Link Data," referenced Scientel's plan for a wireless network from Aurora "to a financial exchange in New York City," designed for a potential, unidentified client.

Scientel has said it will equip its Aurora tower with 28 antennas—24 for public safety and municipal use and four for "private" purposes. In court filings, the company has resisted being more specific, saying the names of its customers are proprietary. In the trading community, "everyone is trying to figure out who they are," says McKay Brothers co-founder Stéphane Tyč. These sorts of riddles are common. When traders started launching microwave networks, they operated in secrecy, seeking to avoid tipping off rivals. Today, they still work through shell companies: Webline Holdings LLC is DRW, World Class Wireless LLC is Jump, and so forth.

As for Scientel's potential trading partner, maybe the company plans to team up with an unknown up-and-comer looking to join the big leagues, or another large trader that currently uses a third party like McKay and now wants its own network. But the name that keeps coming up among industry sources is Citadel. That could be Citadel LLC, the Chicago-based hedge fund founded by billionaire Ken Griffin, but a more likely candidate is Citadel Securities, Griffin's giant trading company. Citadel Securities handles roughly a fifth of all the volume in the U.S. stock market, not to mention whatever it does at CME. If the firm currently employs one of these amped-up networks, it's not clear which it is. But for a company of its size and ambition, it's easy to see how Citadel Securities might want to avail itself of such a network under the cloak of a discreet partner or an anonymous shell firm. Then again, Griffin, who just spent $238 million on an apartment overlooking Central Park in New York, can probably afford to build his own wireless network. Citadel didn't respond to requests for comment for this story.

Meanwhile, local politicians such as Irvin have become unlikely kingmakers in the global trading system. Not that he wants to be. "If McDonald's decides they want to set up right next to Burger King," Irvin says, "all I care about is now we have two retail establishments—and this makes me happy." He wishes CyrusOne and Scientel would find a way to get along so Scientel can build that new headquarters already. Ⓑ

A factory on the outskirts of Jucuapa, one of about 30 in the city assembling what some locals call the "wooden pajamas"

CITY OF COFFINS

IN GANG-PLAGUED EL SALVADOR, A CLUSTER OF BUSINESSES IS TAKING ADVANTAGE OF THE ABUNDANT RESOURCES AT HAND: LUMBER, SKILLED CRAFTSMEN, AND MURDER VICTIMS

BY MATTHEW BREMNER
PHOTOGRAPHS BY FRED RAMOS

Juan Carlos Pacheco and his brother Carlos Stanley begin, as always, by asking the dead man for permission. In the living room of a modest house in eastern El Salvador, Juan Carlos pulls a surgical mask over his face and mouths the plea soundlessly from behind its pleats. *Please let me prepare you, so your family can see you one more time before you go*.

The room is murky and hot. The concrete walls are bare except for three portraits, each of a different girl in a brightly colored graduation gown. Worn blue curtains cover the windows, and the brothers' shoes squeak on the cement floor. Carlos Stanley is built like a bull, with dark hair, a bulging neck, and thighs that make his jeans look like sausage casings. Juan Carlos is of a similar height but less brawny, with a shaved head, thick black glasses, and a jagged scar that runs diagonally across his face, a childhood souvenir from a vicious dog.

As a thunderstorm cracks and rumbles outside, both men stand for a moment, looking at the body. The light of Carlos Stanley's smartphone, balanced on the open lid of the simple brown coffin, illuminates a bullet-riddled face and black hair. A bulb flickering on the ceiling shines into a gaping red hole in the corpse's chest. Neither Pacheco seems fazed by the smell, which hangs heavy in the air like the humid funk of a meat locker. The brothers listen to the sobbing of relatives waiting beyond the door and the rain beating against the windowpanes.

The Pachecos are undertakers working in El Salvador, a country with one of the world's highest murder rates. Together they've embalmed more than 500 bodies in less than two years. They've sewn together dismembered limbs, reconstructed caved-in heads with inflatable plastic balls, and embalmed cadavers so putrefied that their flesh appeared to be melting. But although the Pachecos are relatively new to the funeral business, they grew up around death. They're from Jucuapa, a small city of about 18,000 people and about 30 coffin factories. Manufacturing the "wooden pajamas," as some locals call them, has become such big business in Jucuapa that families have abandoned their bakeries, butcher shops, and sugar cane fields to enter the funeral industry.

The corpse lying in the living room has become almost normal for people like the Pachecos. Today's body used to be Guillermo Gómez Quintanilla, who was returning home from his girlfriend's house when gang members gunned him down in Jucuapa's Santa Fidelia neighborhood. Police officers, uncertain whether the 22-year-old was connected to a rival gang, are still investigating, according to local news reports.

The brothers prepare Gómez's remains for three hours, stitching up the bullet holes, pumping in formaldehyde, hiding the bruising with makeup, and dressing him in his favorite clothes. They charge a little more than $100 for the service. When they're done, Stanley invites the relatives into the room to begin the 24-hour wake. Gómez's mother is among the first to enter. As she sidles up to the coffin, she looks at her son's face, now eerily revitalized by the makeup, and collapses into Juan Carlos's arms.

Jucuapa is hemmed in on all sides by jungle and hills. The drive to a local coffin factory on the city's outskirts runs past neat detached houses with tidy gardens, crowded market squares, children playing soccer, and people idling on park benches. "You wouldn't have been able to go where we are about to go," Juan Carlos says. "There were gangs everywhere."

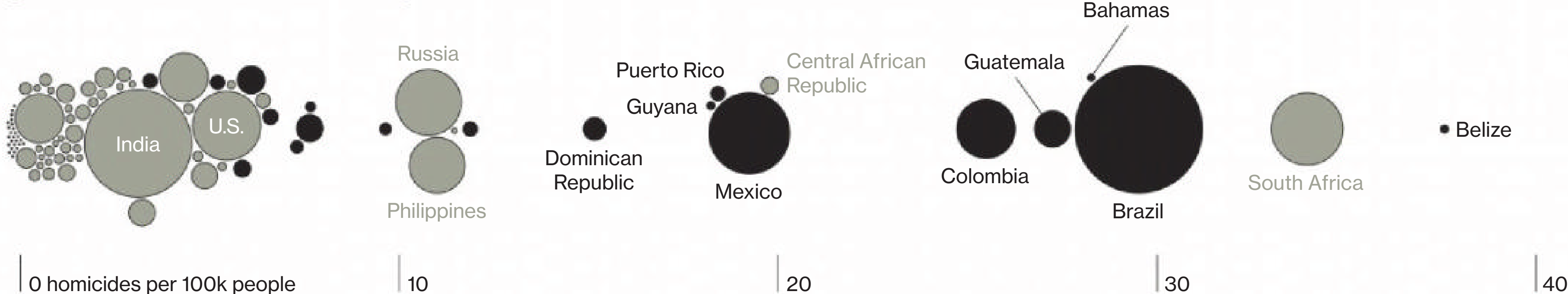
"Gangs everywhere" remains a fact of life throughout El Salvador, a country of 6 million people where 2.5 million live in poverty and the defense ministry estimates that about 500,000 are somehow connected to gang activity. The major rival groups, Barrio 18 and MS-13, have U.S. origins. Refugees founded them to survive in the tougher parts of Los Angeles around the peak of the Salvadoran civil war, when El Salvador's repressive government targeted citizens using paramilitary death squads funded partly with tens of millions of dollars from the Carter and Reagan administrations.

The gangs returned to El Salvador in the early 1990s, around the time the Pacheco brothers were born, after the Clinton administration implemented mass deportations. Within a decade they'd become one of their home country's biggest problems. "When you grow up in a poor area, sometimes you have no other option but to join a gang," says Dennis, a funeral worker and former MS-13 member who asked not to be identified by his last name for fear of reprisals. "It's up to the state to help us find better options."

The Roman Catholic Church, with quiet support from the Salvadoran government, negotiated a truce between the two gangs in 2012, reducing the violence drastically for more than a year, from about 14 murders a day nationwide to between five and six.

HOW NATIONAL HOMICIDE RATES COMPARE

● Latin American and Caribbean nations ● Other nations Circle size indicates number of homicides* in 2016



*FIGURES DERIVED FROM INTENTIONAL RATES AND POPULATION ESTIMATES; NATIONS WITH FEWER THAN 50 HOMICIDES HAVE BEEN EXCLUDED; DATA: UNITED NATIONS, WORLD BANK

Carlos Stanley Pacheco during the funeral service for his friend Christian Alexander Alvarado, conducted by the Funerales Pacheco

But as the peace began to break down and voters called for a more aggressive response, the then-new President Salvador Sánchez Cerén declared war on organized crime in 2015. Unsurprisingly, the level of violence spiked. The murder rate hit 18 a day shortly after the president's crackdown began and has settled at about 11 a day, still the world's highest per capita and enough for the World Health Organization to classify it as an epidemic.

Juan Carlos says things have calmed down in recent months following police raids on local MS-13 and Barrio 18 outposts. Murders in Jucuapa have become monthly instead of daily. But it's tough, he says, to know how long that will last.

At the coffin factory—a nest of corrugated iron and wood peeking out through a copse of oak trees a few miles up a rutted track—the work stations inside roughly track the construction process. Near the entrance, carpenters hammer nails and cut with wailing electric saws through planks hewn from the local olive trees. In another corner, men varnishing finished coffins with a thick black sealant resemble coal miners, their faces coated in the varnish and their eyes watery and red with irritation. In a separate hut across an open-air courtyard at the back of the workshop, the last set of workers uses a spray gun to paint the coffins, the way mechanics repaint a car. "We have to get them nice and shiny," one says. "That's what customers look for." Like their competitors, the factory's seven workers make money by the coffin, Juan Carlos says. He estimates that a good carpenter there makes $250 a week; a painter, about $150.

In a hammock at the back of the space, Jorge Cárdenas, the owner, appears immune to the workshop's heat, noise, and fumes. Unlike the Pachecos, Cárdenas, middle-aged and rotund, has worked in the funeral business all his life and started his own shop in 2012. His team produces 20 to 30 coffins a week, he says proudly, and sells them to funeral homes all over the country. The top seller is the $90 *económico*, a no-frills brown model usually meant for the victims of violent ▶

Jamaica

Honduras

Venezuela

Honduras had the highest rate as recently as 2014

El Salvador's homicide rate fell sharply in 2016 but still stood at about twice its 2013 level

El Salvador

50

60

70

80

◀ crime. "Those that get killed in gang shootouts are normally young men with little resources," Cárdenas says. "When it comes time for the funeral, it's normally the town hall that pays for the coffin, and the state always chooses the cheapest option." His most luxurious model, the *colombiana*, is larger, more elaborately decorated, and, he says, 20 times as profitable.

Cárdenas, like several other coffin factory owners around Jucuapa, acknowledges discomfort with profiting from his country's biggest problem, but says it's the only thing keeping him fed. "If all of a sudden the gangs were to stop killing, our business would be very affected," he says, and besides, 16 competitors ensure he's making a profit of only $10 to $20 per *económico*. "We're not rich here."

Few people are rich in El Salvador, where the median annual income hovers around $3,600. The country, Central America's smallest in terms of land mass, relies largely on coffee exports, tourism, and remittances sent home by workers who've gone abroad. It's easy for things to get desperate fast, as they did during the 2010 downturn in the Jucuapa economy, which led to the establishment of what's now called Funerales Pacheco. There the brothers handle the needs of the deceased and their relatives for $350 to $3,200. "The most basic service might include the wake, an affordable coffin, and the embalming," Juan Carlos says. "The top-of-the-range service, well, that includes everything—transport, food, water, video recording, photography, and, of course, a better-quality coffin." Monthly sales typically run from $2,000 to $4,000.

The day after the trip to Cárdenas's factory, coffins in all sizes and finishes surround Juan Carlos at a white desk cluttered with papers and bottles of water. On the other side of the desk, two people slump in resignation on plastic chairs. They just picked out a plain brown coffin for their son.

As Juan Carlos talks the parents through their options, a door away, Carlos Stanley rubs the deceased's gray arms with disinfectant. The 20-year-old died of alcohol poisoning but was linked to gangs, too, Carlos Stanley says.

No matter how many bodies he's embalmed, Carlos Stanley says, he often struggles to believe that the lump of skin and cartilage he works on had, in fact, lived; that he or she had made people laugh, had woken up in the morning and eaten breakfast, vomited, or had sex. Staring down at the bloated, ashen corpse, he sees life as so improbable sometimes. Then again, his own path seems that way, too. He pauses his work with the scalpel and nods toward a large, dusty oven. "That's what we used to do," he says.

Before the bodies, the Pachecos traded in bread. Their father, Carlos Sr., had run a bakery on the same site for decades. When the family struggled to make ends meet in 2010, as gangs extorted local businesses for protection money, it was the middle son, Carlos Humberto, who suggested starting a coffin factory. With the forests

Rosa Elena Sanchéz Bonilla, the Pacheco family matriarch, works on the interior details of a coffin at the family's Jucuapa funeral home

nearby there'd be no shortage of wood, and the closure of a massive factory called Funeraria Flores a few years earlier had left the town full of expert laborers who could use the work. And, of course, there was the steady supply of murder victims, including four of Carlos Sr.'s own bakery employees. The Pachecos closed the bakery and started knocking out coffins.

It wasn't long before everyone else in Jucuapa had the same idea. "We all saw an opportunity," says Julio Cesar, a Funeraria Flores veteran who started his own workshop shortly after the Pachecos did. "It was the only thing that those of us who had worked at the factory knew how to do."

The competition drove down prices and reduced the Pachecos' profit margins. There were better resources in the town, and by 2016 the Pacheco family was struggling to compete, its finances in trouble again. Juan Carlos, who by then had become an emergency room doctor in the capital of San Salvador, persuaded his brothers and father to turn the coffin factory into a full-on funeral parlor. "It was the obvious decision to make," Carlos Stanley says in the embalming room, making an incision in the 20-year-old's left thigh with a scalpel. "We could make greater profit margins on service than we ever could producing and selling coffins." And because the family had the best coffin suppliers in the country to pick from, the brothers say, it wasn't hard to find quality.

At the beginning of 2018, Juan Carlos, now at the head of the business, began pushing the newly formed parlor in directions that led to a schism in the family. He and Carlos Stanley intend to turn the funeral home into eastern El Salvador's primary embalming facility. A national law requires all such procedures to take place in a certified laboratory, and the two brothers—who, like their peers, don't yet abide by that law—are betting on stricter government enforcement in the future. They expect to spend $15,000 to $20,000 over the next few years to build a lab that's up to code. "When that time comes, people will then have to use our funeral parlor," Juan Carlos says. He's also planning an adjoining chapel where typically Catholic mourners will be able to livestream their vigils to relatives abroad.

Around the same time as this expansion effort began, Carlos Sr. and Carlos Humberto moved to Usulután, a city of about 70,000 and a 40-minute drive south, to set up another funeral parlor. This spared them the capital investment that Juan Carlos and Carlos Stanley have taken on, but it placed them in one of the region's most dangerous spots.

"DEATH HERE IS SO PREVALENT, YOU HAVE TO FIND SOME WAY TO TAKE ADVANTAGE OF IT"

The new shop, also called Funerales Pacheco, sits at the side of a dusty road at the edge of town. During a visit, Carlos Humberto says about two-thirds of his business results from violent crime and he and his father use police, hospital, and mortuary contacts to reach mourners before rivals can. The practice has come to be called *muertear* ("to death"), but the English expression would be "ambulance chasing." "Death here is so prevalent, you have to find some way to take advantage of it," says Carlos Humberto, who won't say whether he and his father pay their tipsters.

Carlos Humberto prides himself on being the first on the scene, even when his trips to pitch funeral services to victims' families bring him into contact with gang members. "They have stopped me, and they have threatened me many times," he says. "But it's part of the job, and I'm used to it by now."

His younger brother should get that last line inscribed on his tombstone. Until 2010, Carlos Stanley, like the rest of the family, knew little about the body's inner workings. But in the embalming room, a dank corridor behind the coffin showroom, he looks as if he's never done anything else. Once he finds the alcohol-poisoned boy's femoral artery, he attaches a needle connected to a thin transparent tube, creating a circuit to pump yellow formaldehyde into the body and drain the blood into a Coke bottle by his feet. Through the sting of the formaldehyde, I can smell what Carlos Stanley's mother, Rosa Elena Sanchéz Bonilla, is cooking in the kitchen. Somewhere outside, ominous classical music plays over a tinny speaker. A woman's voice follows the sinister requiem.

"They're announcing the boy's burial," Juan Carlos says, poking his head in. "You pay the shop $10, and they make an announcement for you."

On my last day with the Pachecos, Juan Carlos and I join about 200 mourners at a funeral in Jucuapa's crowded municipal cemetery, a mishmash of decaying headstones and tombs. The humid air smells of incense. During the service, people clog the paths, lean on the graves, and weep into their handkerchiefs. It's only the second time I see Juan Carlos completely silent. As the gravediggers lower a coffin into the ground, his eyes well up. The funeral, which his team has organized, is for his lifelong friend Cristian Perdomo, who died of kidney failure.

While Carlos Stanley directs the gravediggers a few yards away, Juan Carlos stares blankly at the gravestones in front of him. When he worked in the hospital, he says, he'd often sat for hours listening to his patients' problems. Even in an emergency ward in a country where murder is omnipresent, the undercurrent of almost every complaint is a paralyzing fear of mortality.

In Jucuapa the coffin trade has become a backbone of the local economy, offering steady employment to hundreds of people. At both branches of the Pacheco family business, sales are up. Juan Carlos, quick to acknowledge the irony, says he hopes things will change. "Maybe in the future, Jucuapa will be known for other things," he says. For now, though, he has no plans to become a baker again. Ⓑ

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EAT DRINK SLEEP REPEAT

By Kate Krader

PURSUITS

A steep service for tea
75

Michael Caines at Lympstone Manor in Exmouth in southern England

Photograph by Laura Pannack

A fashionable canteen that's lacking flavor
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When the master of the kitchen is the keeper of the inn
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March 11, 2019

Edited by Chris Rovzar

Businessweek.com

The Era of Chef-Run Hotels

With the margins on hotels so much higher than tables, it was only a matter of time

In 2009, Michael Stipe and his R.E.M. bandmates went to eat at Massimo Bottura's Osteria Francescana after a concert in Bologna. They liked the town of Modena so much, they wanted to stay. But Bottura couldn't find a place for his friends to sleep. "I said, 'How is there not a place here for people to stay? I need a hotel.'" A decade later, in May, Bottura will open Casa Maria Luigia, a centuries-old estate 10 minutes outside town. The 12-room inn will have a professional kitchen in the old carriage house and showcase part of its owner's museum-worthy modern art collection.

Bottura is part of an ever-growing gaggle of chefs for whom running a hotel restaurant isn't enough–they want to own the entire operation. After all, the profit margins on beds are higher than the slim ones earned at tables. This isn't a brand-new concept: In the 1990s, Alain Ducasse opened the Provence retreat La Bastide de Moustiers. But the current king of the chef-run hotel is Nobu Matsuhisa, who created his own brand beginning with his first location in Las Vegas in 2013; it's become a small empire on track to have 20 properties by 2020.

There's no one master model: In Mexico City, Enrique Olvera has built a tiny B&B. Acclaimed chef Bertrand Grébaut took over a country house in Normandy, France. And in São Paulo, Alex Atala is going whole hog, packing a $50 million skyscraper full of marquee restaurants and fancy rooms. Here are seven you should know about right now. —*With Nikki Ekstein*

LYMPSTONE MANOR

Devon, U.K.

The chef: Michael Caines, who earned two Michelin stars for the resort Gidleigh Park
The place: A restored mansion in Devon
Don't miss: Meaty turbot, poached with leeks and finished with grated black truffles

Caines has spent most of his professional life working in restaurants attached to luxury hotels. He cooked at Oxford's famed retreat Le Manoir aux Quat'Saisons with Raymond Blanc (as did Marco Pierre White and other notable chefs), then spent more than 20 years cooking at the imposing Gidleigh Park in southwestern England. But when Caines asked about becoming a partner in the property, he was turned down. "I said to Gidleigh Park, 'What's in it for me?' and they said, 'Nothing.' It was like a love affair when I asked her to get married and she said no." (Gidleigh Park declined to comment.)

The chef, who did have a partnership interest in the U.K.-based Abode Hotels, decided it was time for his own place. There was no question it would be a country inn and not just a restaurant. "You're making a good 30 percent profit margin on a bedroom, while food and beverage is anywhere between 10 and 15 percent," he explains. "When you have them working together, that's even better."

In 2015 he bought a rundown Georgian property in his home region of Devon. In the spring of 2017 he opened Lympstone Manor, which overlooks the River Exe, in Exmouth. It has 21 rooms and suites filled with glimmering golden sofas and silvery carpets. Caines's modern British menu includes lobster salad with cardamom and filet mignon from a local farm, with braised beef cheek and creamy shallot confit. After opening, Caines planted 17,500 vines on 11 acres; by 2024 he expects to produce his first vintage of Lympstone sparkling wine. *From £340 ($449); lympstonemanor.co.uk*

NOBU HOTELS

Eight locations worldwide

The chef: Sashimi purveyor to the stars Nobu Matsuhisa
The place: The company's newest project is a 23-story tower set to open in late summer near Barcelona's Sants train station, the Catalan capital's arterial transit hub
Don't miss: The panoramic views from the signature restaurant on the top floor

He may have made his name fusing Japanese and Peruvian flavors, but Matsuhisa lately has fallen hard for Spain: The sushi master is about to open his third hotel in the country after successful recent debuts in Ibiza and Marbella. The project is a top-to-bottom rethink of one of the city's staid four-star properties, the former Gran Hotel Torre Catalunya. After a transformation by his longtime designer David Rockwell, the hotel will have 255 rooms and a bevy of meeting and event spaces. It'll be one of the largest undertakings yet for Matsuhisa and his partners—who include the actor Robert De Niro.

"We entered the hospitality business with an upside-down business model," says Nobu Hospitality LLC Chief Executive Officer Trevor Horwell. "While most hotels focus on selling rooms first, Nobu Hotels has always been about creating memorable food experiences." Now that others are using the same calling card, Nobu is setting itself apart not just with its cuisine—the chef's famed black cod with miso is on every hotel's menu—but also with a matching Japanese fusion design philosophy. In Barcelona, for instance, there's the recurring motif of broken, *kintsugi*-style pottery, which evokes Gaudí's iconic mosaics.

At a hotel that will open in Los Cabos, Mexico, shoji screens on the closets will mimic the sliding glass doors that open up onto the Sea of Cortez. In Riyadh, the headboards in each room will feature cherry blossom embroidery on local fabrics, while a ground-floor teahouse merges Japanese and Arabian traditions. Up next for Nobu Hospitality? Branded residences. "Our first Nobu Hotel and Residences, in Toronto, sold out in just three months," Horwell says. More are on the way: Nobu condos are in the works for São Paulo and Los Cabos. *From €350 ($397) for Barcelona*; *nobuhotels.com*

D'UNE ILE

Normandy, France

The chef: Bertrand Grébaut, of hot Paris neo-bistros Septime and Clamato
The place: A rustic country house two hours from the City of Light
Don't miss: Al fresco breakfasts with warm-from-the-oven brioche, butter from the farm next door, and fresh honeycomb

Rather than go for more big-city buzz, the chef who blazed the trail for lightened-up,

PHOTOGRAPHS FROM TOP: STEVEN FREEMAN, CASA MARIA LUIGIA, LAURA PANNACK FOR BLOOMBERG BUSINESSWEEK

seasonal bistro cooking in Paris is devoting his time to a food-focused inn surrounded by generations-old farms.

After acquiring the 17th century D'Une Ile almost a year ago, Grébaut and his business partner, Théophile Pourriat, upgraded the property through the winter and reopened it this month, complete with a new living room space in a former barn, a sauna, and a swimming pool. These amenities join eight rooms with stone walls, exposed beams, and furnishings by Ilse Crawford and Tom Dixon. True to Grébaut's style, expect a "micro-seasonal" menu that pulls heavily from neighbors' bounties as well as his own—the 20-acre estate has an organic garden and a cellar full of natural wines. *From €113; duneile.com*

CASA MARIA LUIGIA

Modena, Italy

The chef: Italian modernist Massimo Bottura
The place: An 18th century villa gone glam near the city of slow food and fast cars
Don't miss: A local aperitivo snack of *gnocco fritto* (savory fried dough), served with salty *salumi*

Bottura and Lara Gilmore, his wife and partner, are on a winning streak. For one thing, Osteria Francescana—a reconstructionist temple to the food of Emilia-Romagna—has been recognized twice in recent years as the top dining destination by the World's 50 Best Restaurant awards. With that platform of influence have come posh partnerships with Italian fashion houses and a global expansion plan, as well as charitable soup kitchens in underserved neighborhoods around the world.

But closer to home is something more intimate: Casa Maria Luigia, the couple's soon-to-open 12-room inn. It started when the pair made a lowball bid for the property at auction and came away surprise owners; now it's a canvas where they can experiment with a different kind of hospitality. "There's this new idea that travel isn't just about eating at a restaurant like Francescana—it can be an opportunity to test your boundaries," Gilmore says. "Nowadays there is a desire to share and connect."

At Maria Luigia that means fostering interaction between guests, staff, and owners: The property has an open kitchen where guests can learn to make pasta, a *bocce* court, and a piazza overlooking

From top: Matsuhisa's classic miso-marinated black cod is served at all of his hotels; a bountiful kitchen table at Casa Maria Luigia; fillet of beef with horseradish and shallot confit, celeriac purée, mushrooms, and red wine sauce at Lympstone Manor

Coming Soon

D.O.M HOTEL
São Paulo

If you've tried the aligot at Alex Atala's D.O.M, you know the chef has a flair for the theatrical. The potato-and-fondue concoction is finished tableside, with a steward stretching the blend as tall as his arms can reach. But Atala's next project will aim even higher—35 stories, to be exact. Opening in 2021 in São Paulo, the $50 million D.O.M Hotel will include five restaurants, some run by Atala and some by his local chef friends.

CASA CACAO
Girona, Spain

Pastry chef Jordi Roca, one of three brothers behind Spain's legendary El Celler de Can Roca, never dreamed about becoming a hotelier. He wanted to run a bean-to-bar chocolate factory, á la Brooklyn's Mast Brothers. But when he found the ideal location in Girona's Plaça de Catalunya, it came with three extra floors above the street-level space for the chocolate shop. So Roca added 15 rooms to his new confectionery. The boutique hotel opens late this year.

150-year-old oak trees that's perfect for lambrusco at sunset. Gilmore's small farm—her pet project—will be open to visitors who want to pick radishes or tomatoes, and pieces from the couple's impressive art collection will be scattered throughout. (Look for Damien Hirst's *The Last Supper* in the dining room and Mimmo Paladino sculptures in the garden.)

Just don't expect Bottura to show up to man the pizza oven. "We want to encourage people to go to town, to visit the trattorias," says Gilmore, who thinks of the property more as a bed and breakfast with a casual all-day menu but no dinner service. "I tell everyone how much I love Emilia-Romagna, but now I want to share that with a broader audience—the landscape, the food, the people. That's what it's all about." *From €450; casamarialuigia.com*

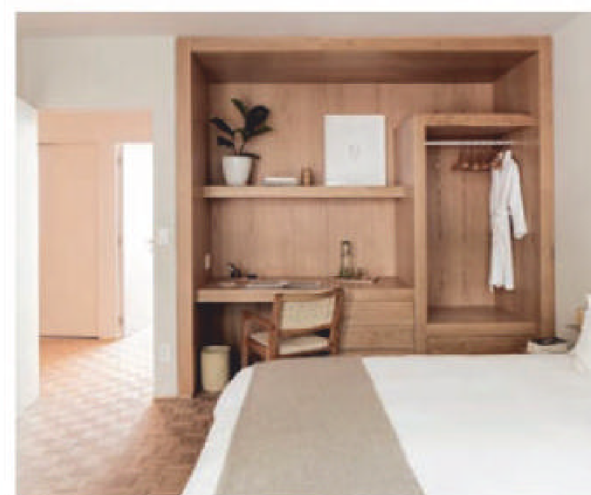
CASA TEO
Mexico City

The chef: Enrique Olvera, whose restaurant Pujol ranks high on the World's 50 Best Restaurant list
The place: A bright apartment rented out to guests and visiting chefs
Don't miss: Breakfast, which is provided by Olvera's cooks, includes satisfying fare such as artichoke omelets

Some chefs spend years searching for a space to accommodate overnight guests. Enrique Olvera simply shifted things around. When Mexico's most acclaimed cook decided to move his flagship Pujol to a new location, he turned the second floor of the original space into Casa Teo, an Airbnb-style residence. (Olvera has made the bottom floor into a *bonatera*, a lively bar that also serves food—unusual in Mexico.) Casa Teo isn't a hotel: There are just two bedrooms in the airy, plant-filled apartment. Not surprisingly, there's a stellar home kitchen, with serving pieces made in Oaxaca, as well as a dining room and a culinary library that includes books on the indigenous cuisines of Mexico.

"The kitchen is simple but made with things I love that aren't economically intelligent for a restaurant," says Olvera of such equipment as a La Marzocco GS3 espresso machine. He imagines Casa Teo as a kind of artists' residence, an intimate place where visitors can be immersed in a new location and inspired to experiment. He occasionally uses it as a base for visiting chef friends such as Frederic Morin and David McMillan from Montreal's Joe Beef. But it's open to the public as well; guests have the option of having a chef cook dinner.

Olvera is so pleased with the model that he's building another residence like it in Oaxaca, behind the garden of his restaurant Criollo. Scheduled to open in late April, it will be the same, with two bedrooms and an enviable kitchen. His dream is to bring a Casa Teo to every city where he has a restaurant. In September that will include Los Angeles, when he opens Damian restaurant. "I'm a frustrated architect," Olvera says, but "I don't want to be Nobu." While he does plan eventually to open a bigger property on land he can farm, he doesn't need a sprawling hotel empire. "It will be an inn in an avocado forest," says the chef. *From $350; teo.casa* Ⓑ



Olvera; a simple, light-filled room at Casa Teo in Mexico City

PHOTOGRAPHS: MAUREEN M. EVANS FOR CASA TEO

The Modern Hotel Chef Timeline

1987
Chef Patrick O'Connell pioneers this era of modern chef-owned hotel properties with the opening of the Inn at Little Washington in Virginia

1995
Michelin three-star chef Alain Ducasse creates Bastide de Moustiers in Provence; it's his first country inn

2008
Gordon Ramsey's York & Albany hotel in London makes its debut

2013
Twenty-five years after the first Nobu restaurant, Matsuhisa's Nobu Hotels collection begins in Las Vegas

2018
Olvera's Casa Teo, a B&B in Mexico City, welcomes its first guests

2019
Bottura opens Casa Maria Luigia, an inn outside Modena

2019
D'Une Ile, a country house hotel in Normandy, reopens with Grébaut at the helm

INSIDER INGREDIENT

No Bunch of Baloney

Soft, savory mortadella moves beyond the deli platter
Photograph by Danny Kim

MORTADELLA SANDOS

Manhattan's Katana Kitten does a brisk business in mortadella "sandos," or Japanese sandwiches, made with cured meat sourced from Fra' Mani Handcrafted Foods in Berkeley, Calif. This is a simplified version provided by managing partner Masahiro Urushido. Makes four.

Coat four ¾-inch-thick slices of good-quality mortadella on both sides with beaten egg, then cover them in panko bread crumbs. Heat a generous amount of vegetable oil in a skillet and fry on medium-high until golden on both sides and heated through. Let cool. Make sandos using thick slices of Japanese milk bread. (Brioche also works.) Brush the bread with Dijon mustard and tangy *tonkatsu* sauce, a Japanese barbecue staple available at international markets.

In the 1971 comedy *Lady Liberty*, Sophia Loren arrives in the U.S. carrying mortadella from the Italian factory where she worked. When a customs official stops her, she refuses to give up the sausage and gets quarantined at the airport. A special agent arrives, pulls out a pocketknife to sample it, and soon enough, it's all gone. The Italian name of the film? *La Mortadella*.

In the decades since, the cured meat has often been confused with mass-market bologna, which has a similar dull pink hue. If you've ever avoided a slice of olive-studded sandwich meat on a deli platter, it was probably also labeled mortadella.

This staple of the charcuterie board has been around for millennia. The first century philosopher Pliny the Elder referred to it in his writing. Its name derives from the Latin word for mortar (*mortarium*), the instrument used to grind the meat; its hometown is Bologna, where it's made from pork, nutmeg, and the juniperlike myrtle spice. The meat is punctuated with cubes of fat and often pearls of peppercorns and, less classically, crunchy pistachios.

Now mortadella has become one of the trendiest meats in U.S. restaurants: It's griddled at sandwich specialist Lardo in Portland, Ore., and proudly turned into a corn dog at Leroy's Kitchen + Lounge in Coronado, Calif. At New York's buzzy Frenchette, co-owners and co-chefs Riad Nasr and Lee Hanson slice it paper-thin and serve it with brioche and a sprinkling of Comté cheese. (The dish is called La Mortadella, a nod to the Loren film.) "On many levels, it's one of the highest forms of charcuterie," Nasr says. "I consider it a luxury product with those rich chunks of fat. It's like the ultra bologna."

But the biggest sign that mortadella is poised for a return to prominence comes from fatty-pork promoter David Chang, who's looking to do for the cured meat what his Momofuku empire has done for pork belly and his Ssam Bar did for Korean specialty *bo ssam*. At his Bang Bar at the Shops at Columbus Circle in New York, hungry diners wait in line for a taste of the Mini Bang sandwich, which features spit-roasted mortadella coated with lard and stuffed inside homemade flatbread. "It's time for it to make a comeback," Chang says. Ⓑ

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Yes, You Can!

As mass-produced packed tuna disappears from tables, fancy tinned fish gets the spotlight
Photograph by Ted + Chelsea Cavanaugh

Of all the things millennials have killed over the years, the slow death of seafood in a can may have provoked the least amount of hand-wringing. When a 2016 U.S. Department of Agriculture report noted that tinned-tuna sales had fallen 42 percent over the previous three decades, most people seemed to agree it was for the best.

But while these preserved foods might be having a tough time in the U.S., the category is gaining traction elsewhere. The global market for canned fish is expected to reach $36.7 billion by 2021, up from $29.75 billion in 2016, according to *Supermarket News*. Versions from Portugal and Spain, France, and other Mediterranean countries are prized as much for their locally caught fish—notably anchovies, sardines, and tuna—as for their colorful, collectible tins. Other European staples include firm chunks of mackerel from Latvia; roasted sprats from Ukraine; and cod liver from Norway, which often comes labeled "by special royal permission of King Oscar."

Asia's canned-seafood scene is even bigger. In China you can get fried croaker with fermented bean sauce, though you may find the color unnervingly black when you peel off the lid to reveal the chewy, funky pieces of sardinelike fish. More appealing is Korean tuna doused in a chile-spiked sauce. The Japanese are especially enthusiastic about canned fish, which are high in protein and heart-healthy omega-3 fatty acids—conducive to the low-carb diets that have taken hold in the past few years. (They're also handy to store in case of an emergency.)

There are discrete signs that imported canned seafood might take off in the U.S. Sales of tinned fish in the José Andrés Foods line have increased 18 percent from 2017 to 2018, says Marisol Plata, product brand director at ThinkFoodGroup LLC. At the chef's upcoming Mercado Little Spain in New York's Hudson Yards, canned fish will be sold at the retail market and served at the bar. "We'll have a nice portfolio of tinned seafoods at different price ranges," Plata says. A new line includes sardines, ranging from $7 to $20 a tin, as well as creations from Spanish chef Albert Adrià.

At Il Buco, also in Manhattan, owner Donna Lennard says customers increasingly appreciate canned seafood as a luxury item. "To many of our guests, tinned fish has become akin to a bottle of Burgundy or caviar," she says. Ⓑ

1. NORWAY King Oscar cod liver **2. ITALY** Agostino Recca anchovy fillets **3. CHINA** Yu Jia Xiang yellow croaker fish in black bean sauce **4. TAIWAN** Tong Yeng mackerel in chile-tomato sauce **5. LATVIA** Stella Maris mackerel in oil

6. PORTUGAL Bela lightly smoked sardines in tomato sauce **7. THAILAND** Nissui Iwashi sardines in soybean paste **8. SPAIN** Jose Serrats white albacore tuna in olive oil **9. POLAND** Bumble Bee sardines

10. ICELAND Threeline Imports kosher cod liver **11. JAPAN** ICC baked and seasoned saury **12. FRANCE** J Hénaff Fils sardines **13. KOREA** Dongwon hot pepper tuna **14. UKRAINE** Maxfood Plus Baltic sprats in tomato sauce

When Food Is in Fashion

Saks Fifth Avenue imported a restaurant from Paris to attract the stylish set. If only they could find it
By Kate Krader

It's not easy to get into L'Avenue.

The issue isn't only that reservations at the new restaurant at Saks Fifth Avenue in Manhattan are inconveniently blocked out from 5:30 to 10 p.m. Physically, it's hard to access the place. After 8:30, as the department store is closing down, a security guard will point you down 50th Street toward the sole entrance. A gum-chewing hostess with an iPad then sends you to the ninth floor. From there it's a meandering walk, past a bathroom where the toilets all seem to flush in unison (a water feature?), then down a corridor long enough for competitive sprints. Finally you'll arrive at the Philippe Starck-designed dining room, replete with caramel leather banquettes and vitrines displaying beaded McQueen dresses and Valentino jackets as if they were museum pieces (but, yes, for sale).

It would be much easier to wander in after a morning of shopping, but the restaurant has made the perplexing decision to open only for dinner and drinks at first. Lunch service, which was planned to begin on March 4, has been pushed back to April. Presumably that'll give Restaurant Associates, which manages it, time to get the place runway-ready. It isn't now.

L'Avenue made a promising debut. An outpost of the Costes brothers' fabulous fashion canteen on Avenue Montaigne in Paris, it opened during Fashion Week with Joseph Altuzarra, Dior's Kim Jordan, and Carolina Herrera's Wes Gordon popping by. Soon after, model Karolina Kurkova and Michael Cohen dined there (not together). But late one Tuesday in February, there were no recognizable faces in the half-full room—just a smattering of suits and a family dressed chicly in black. The 6-to-9 p.m. mob must have sprinted out that long hallway.

L'Avenue displays merchandise in glass cases

The French(ish) menu is a random amalgamation of 33 items, not including sides such as too-salty-to-eat spinach. Starters begin with carrot-ginger juice and ricochet to chicken spring rolls with a mushy gingery filling. There's also a dish of smoked salmon with blini, because fashion. Most purveyors of smoked fish like to slice it thin; L'Avenue serves it in inch-tall planks. If you sandwich it between blini, it becomes a slider, the closest you'll get to a burger here. Forget trying to find a salad—there isn't one on the menu.

Similarly counterintuitive is a main course beef tartare that's $25 but still a fabulous deal because it's the size of a football and, according to a server, mixed only with house-made mayo. If you ask for toast, you'll get warm slices, which is polite but unappetizing. Would you serve ceviche in a hot bowl?

What's genuinely delicious are the Pierre Hermé desserts. This is the star pastry chef's only venue in the U.S., and if you're smart you'll order the *coupe satine*—a glorious textural mix of cream cheese ice cream, passion fruit sorbet, and softly whipped cream—as well as a plate of his famed macarons.

The perfect little cookies are also available at a kiosk by the entrance, along with modernist poundcakes in startling hues. These are one of the few items on the ninth floor that your average shopper will want to buy. (The rest of the floor is devoted to $225 Gucci baby shoes and gowns for dowagers.) It seems a missed opportunity not to tantalize diners with a few handbags or even a Diptyque candle.

What L'Avenue has going for it is its neighborhood. Midtown is now flush with clubby dining rooms, and not just during the day when well-paid office workers duck out. The four-year-old Polo Bar, open only for dinner, is still impossible to get into; tables at the Grill, Lobster Club, and Pool fill up nightly.

L'Avenue may also profit from the booming restaurant-in-the-store model, as proven by the eatery atop Restoration Hardware in the Meatpacking District, where the stiletto set grabs a burger before clacking out for the night. At the robin's-egg Blue Box Café at Tiffany & Co., teatime is a magnet for anyone with an Instagram account. L'Avenue has a long way to go before it reaches the caliber of these places—or Freds at Barneys New York, their most direct competition.

The good news is that the place has nowhere to go but up. The room promises to be gorgeous during the day, with light streaming in through windows that overlook Rockefeller Center. Later this spring, the restaurant will open a terrace with outdoor bars, which will feature more of the clever concoctions from Experimental Cocktail Club's Nico de Soto.

In fact, L'Avenue has the potential to be an exclamation point on New York's expanding Midtown restaurant scene. With its Parisian pedigree and luxurious hangout vibe, it could wind up as another important nontourist destination in the pedestrian-packed neighborhood. New Yorkers will just have to get used to the long trek in and out—it's a great way to burn off the calories from a football of raw beef. Ⓑ

The Kambin is a teapot, not a teakettle—boil your water elsewhere and then put your favorite blend inside

THE COMPETITION

- Georg Jensen's stainless-steel Helena teapot ($200), by Spanish jewelry designer Helena Rohner, has sloping modern lines.
- Also stainless steel, the Cylinda ($318), has a midcentury silhouette by Arne Jacobsen, the Danish master.
- Ichendorf Milano's $47 Osaka teapot has a disklike shape and volume similar to the Kambin's. Made entirely of borosilicate glass, it trades the insulating properties and grit of cast iron for stunning presentation.

THE CASE

Kambin's flattened body, which can hold 3½ cups of your favorite brew, is visually striking but also lends balance as you pour and set it down. The weight of the cast iron means you don't have to hold the lid in place when moving the teapot. The wide, high handle keeps your knuckles a safe distance from a hot finial. And the added step of steeping tea in a separate kettle is a ritualistic gesture that makes even a simple cup of *sencha* feel like your own religious rite. *$79; arasian-dreams.de*

Steep Impact

A cast-iron pot by JA Unendlich is a dramatic tool for your tea

Photograph by Janelle Jones

Not to be confused with *tetsubin*—the Japanese kettles used to boil water—cast-iron teapots, or *tetsu kyusu*, have the same heat retention and durability as their stove-top cousins. A delicate enamel glaze inside, however, makes them strictly for brewing tea after the water has been heated, not sitting on an open flame. The $79 Kambin pot from German brand JA Unendlich combines a traditional sand-casting process with craftsmanship that's evident in its detailed, brightly colored exterior.

Chinese Biotech Investors Have Caught a Chill

By Nisha Gopalan

Four years ago, President Xi Jinping's government rolled out the Made in China 2025 strategy to dominate the global economy with its homegrown technology. Chinese government-backed venture capital firms that still wanted to buy U.S. assets identified health care as a sector they could invest in without running afoul of regulators at home.

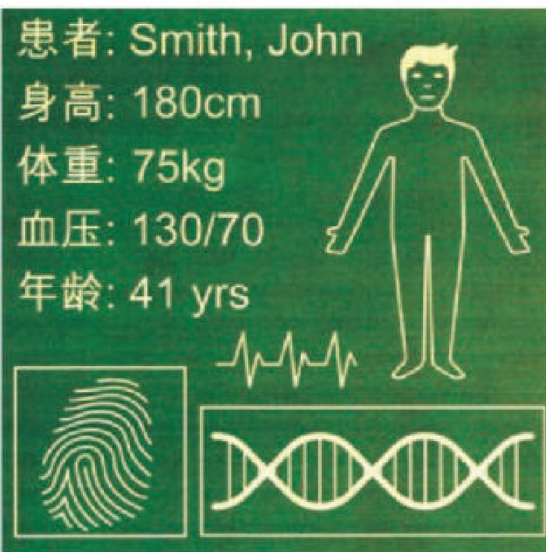

ILLUSTRATION BY GEORGE WYLESOL

Cut to 2018, when health and biotech supplanted real estate and entertainment as the top recipients of Chinese capital in the U.S., according to a report commissioned by the U.S.-China Economic and Security Review Commission. Now, however, investors face pressure from regulators in America. The Committee on Foreign Investment in the United States, known as CFIUS, which screens foreign takeovers of domestic assets for national security risks, has become a lot more stringent under the Trump administration. At the end of last year it began vetting even the purchase of minority stakes in critical technology—including biotechnology.

Even Chinese investors without government backing have felt a chill since the arrest of Huawei Technologies Co. executive Meng Wanzhou in December on U.S. bank fraud charges. Before that, the U.S. blocked Singapore-based Broadcom Inc.'s $117 billion bid to acquire Qualcomm Inc., the San Diego-based chipmaker, over fears that Broadcom's cost-cutting would dull the American company's edge. Chinese-backed venture capital firms were involved in five technology deals in the U.S. last year, valued at a total of $349 million, according to the *Asia Private Equity Review*. That's down from nine tech transactions worth $602.4 million in 2017.

Health-care deals involving Chinese investors in the U.S., on the other hand, shot up to 17 last year, worth $2.8 billion—well above the four valued at $702.9 million in 2017. Of the seven biggest venture capital and private equity funds investing in both the U.S. and China that raised money in 2018, according to *APER*, four have chosen health care as a target. Chinese biotech firms investing in U.S. companies are also acquiring clinical and genetic data on U.S. residents in the process, according to the review commission's report, something that may trigger alarm at CFIUS. Such information could be used to blackmail Americans, it said.

If CFIUS starts holding up Chinese biotech deals, that would leave a lot of Chinese money with few places to go, especially because Europe has grown more concerned with privacy protections and thus warier about foreign tech investments. "Many startups in the U.S. that need funding are getting bypassed by Chinese money," says Winston Ma, former North American head of China's sovereign wealth fund, because Chinese VCs are cautious about CFIUS holding up transactions. That's a problem for U.S. companies but perhaps a bigger one for China, whose biotech industry remains less than one-10th the size of that of the U.S. Ⓑ

—*Gopalan is a finance columnist for Bloomberg Opinion*

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