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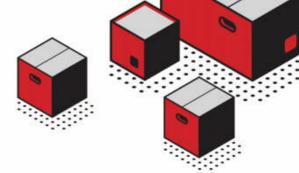
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Driving Business Forward: Three Trends Impacting Supply Chains During Covid-19



Virtually no business has escaped the supply chain disruptions wrough

the supply chain disruptions wrought by the coronavirus pandemic.

In March, 95% of companies said that their supply chains had been or would be disrupted by Covid-19. But in the eight months since the pandemic's emergence, forward-thinking businesses have been able to strengthen their supply chains and seize the opportunity to prove their dependability to their customers.

Covid taught companies that they need to be flexible and quickly adapt to changing conditions across both their supply chains and transportation networks. Those that have managed to do so are poised to thrive, not only for the duration of the pandemic, but also in the "new normal" that lies on the other side of it.

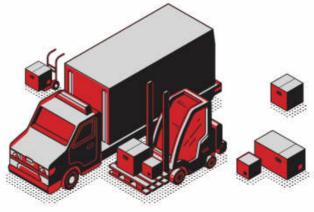
Here's a look at three trends shaping supply chains now:



Diverse, regional supplier networks have never been more important.

At the height of disruption last spring, companies that fared the best were those not dependent on a single supplier, and those in geographic proximity to their suppliers.

"Step one to a resilient supply chain is not having all of your eggs in one basket, and step two is being in the region with your suppliers, as much as you can be," says Steve Sensing, President, Global Supply Chain Solutions, Ryder System. "When the pandemic came, those companies that were positioned locally were in a much better position.



2 An outsourced transportation network can be a competitive advantage.

As business needs to shift instantaneously during these uncertain times, companies must be able to rely on their fleets to meet quickly changing demands. Ryder proved its reliability last spring when shipments to its consumer packaged goods (CPG) customers skyrocketed 150% as they stocked up on everything from toilet paper to thermometers.

At the same time, as many of Ryder's automotive clients shuttered temporarily due to shelter-in-place orders, Ryder was able to redirect its thousands of trucks, tractors, trailers and drivers from automotive routes to CPG runs.

"That flexibility allowed us to support those food-and-beverage customers and keep those trucks running to their warehouses and to their retail storefronts," Sensing says.

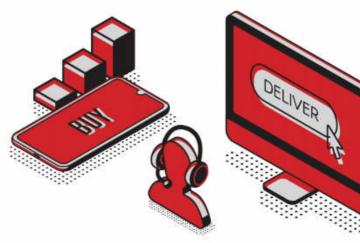
The shift to e-commerce has accelerated, along with customer expectations.

Customers nervous about visiting stores during the pandemic have shifted more of their shopping to e-commerce, with sales expected to reach nearly \$800 billion this year—a 32% increase over last year and a figure analysts didn't expect to see until 2022.

More than a thousand new retail customers have turned to Ryder since the pandemic hit to help them meet increased demand, particularly because consumers still expect total transparency in the status of deliveries. This is provided by Ryder's RyderShare™ platform, which allows retailers to give their consumers real-time insight into the location and expected timing of each delivery.

"Having that real-time visibility—to know exactly where the product is and when it will arrive—is critical to our customers and our operations team," says Sensing.

Ryder Last Mile delivery service also benefits retailers shifting into e-commerce, providing delivery of bulk items at whichever level a retail customer prefers—from simply dropping them inside the consumer's front door to a full-service setup.



Reactive data and technology evolve to become more predictive.

In addition to providing transparency around delivery, the RyderShare $^{\text{\tiny{M}}}$ platform also generates valuable data, which Ryder uses to automate its warehouses and find other cost savings for customers.

"It's helping us drive more waste out of the system and be more effective in moving out customers' product on the right transportation mode and carrier," Sensing says.

While challenges remain as businesses rebound from the effects of the pandemic, ample opportunities exist for agile enterprises. Companies with operational flexibility, reliable partners and a focus on efficiency will adjust—and flourish—as the new normal takes shape.

Learn more at www.ryder.com

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9 years to overnight success

Video conferencing service Zoom had been preparing for a moment like the pandemic since it was founded in 2011. Designed to be easy to use, it became a cultural phenomenon when governments asked citizens to stay at home.

Do you Zoom?

Like Xerox and Google before it, Zoom became a verb. Everyone from grandmothers to CEOs were Zooming from their kitchen tables and home offices.



Business surges

As companies transitioned to working from home, Zoom's number of daily meeting participants exploded from 10 million to 300 million almost overnight.



Gearing up



From the beginning

Wells Fargo has been Zoom's commercial bank since its inception, is one of its investment managers and handled part of its 2019 IPO. "Their support has enabled us to change how communication happens," says CFO Kelly Steckelberg.

Sudden success wasn't without its challenges. The company had to add thousands of servers daily to handle the increased load. And it hired 1,000 employees – over a third of its workforce – since the pandemic began.

General Fargo help take a founder's idea from inception to IPO and beyond.

Henry Li

Director, Technology Banking Wells Fargo Commercial Banking





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Australia's comic relief

◆ Gen Z's preferred brokers

◆ The Mideast peacemaker + Activists against racial injustice + Cinema's class warrior + Amazon.com's defector + The GOP's controversial twentysomething + The Trump needler-in-chief + The pandemic number crunchers + Pop's edgiest star + Nigerian allies to #EndSARS + America's voice of science + The fundraiser of Flavortown + Quarantine's exercise king + The woman shattering hand at the IMF + Morgan Stanley's strategist + Sudan's pioneering reformer + A best friend to binge-watchers + The director who went one-on-one with Michael Jordan + The super-secretive macro trader → The founder seeking shelf space → New York's dogged AG + South Korea's incomparable contact tracer + The QB who became a civil rights trailblazer + Tap-to-pay's top supporter → The humans behind Animal Crossing → The president with a plan for Uruguay → Universal's visionary → The No.1 entrepreneur in Southeast Asia + Zimbabwe's messenger of hope + A WNBA do-gooder

◆ Soccer's advocate for hungry kids

◆ The A student in online ed → A Philippine free-press fighter → The chief drone officer → The high court's middleman → Rocket woman → Your dog's favorite exec → The hottest investment vehicle → The rap-battle buds + Taiwan's Covid crusher + The homemaker turned opposition leader + The vaccine chasers + China's livestreaming queen + The lockdown delivery guy + A banker for the forgotten → Elon Musk's friend in China → Crypto's influence miner

THE BLOOMBERG 50

From politics and finance to tech and entertainment, the people who defined this trying year

A few names you may know more intimately soon enough

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■ COVER TRAIL

How the cover gets made



"So, this week it's the fourth annual Bloomberg 50, our list of people who made significant and—this part is important!— quantifiable contributions in 2020."

"Did I finally make it?!"

"Alas, no employees."

"So you just pick 50 people, and that's that?"

"The Bloomberg 75 just wasn't as sexy."

"Well, last year we had all 50 people on the cover. Maybe we do one person this year?"



"But it's Bloomberg 50. We need all 50."

"Fifty is too big a crowd for a 2020 cover. It's making me panic! Let's just show 5 people."

"No, 25 people."

"How about 12?"

"OK, 12."



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Change the shape of the future



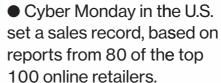
 Coronavirus cases have topped 63.4 million, and almost

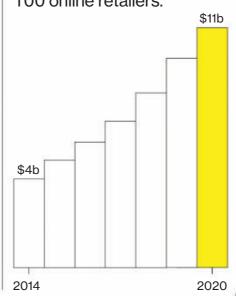
1.5m

people have died. The U.K. became the first Western country to approve a Covid-19 vaccine when it cleared Pfizer and BioNTech's shot.

Exxon Mobil will cut the value of its North and South American natural gas fields by up to \$20 billion.

The writedown, following this year's steep decline in energy prices, could be the industry's largest impairment in a decade.





U.K. retail emporium Arcadia filed for protection from creditors on Nov. 30.

 S&P Global agreed to buy IHS Markit for about

in stock. The deal, the second-biggest corporate acquisition so far this year, speeds a consolidation wave among the finance industry's data providers.

DoorDash is seeking an IPO before yearend. The proposed share price would value the U.S. food delivery company at as much as \$32 billion.



The holding company of billionaire 13,000 employees. Brands include

Philip Green operates 466 stores with Topshop, Dorothy Perkins, and Burton.

MARADONA: STEVE POWELL/GETTY IMAGES. HORTA-OSÓRIO: SIMON DAWSON/BLOOMBERG. DATA: ADOBE ANALYTICS

 Bitcoin topped \$19,857

on Nov. 30, reaching a new record and pushing this year's surge to more than 170%. The cryptocurrency remains highly volatile. After reaching its previous high, in December 2017, it lost 70% over the following year.

Credit Suisse picked

brain. He was 60.

António Horta-Osório as its next chairman. A native

Aires, where he was recovering from

surgery to remove a blood clot from his

of Portugal, Horta-Osório recently announced his departure as CEO of Lloyds Banking Group. He'll seek to repair the Swiss bank's reputation, which has been tarnished by a spying scandal.



Gabriel Sterling, a Republican election official in Georgia, denouncing President Trump and the state's two Republican U.S. senators for not condemning threats of violence being made against election workers.

LLUSTRATION BY JACKSON GIBBS

Biden Must Build U.S. Diplomacy Back Better

In January, Joe Biden will take charge of an executive branch in woeful disrepair. Practically every important federal institution has been scorched during four years of sustained assault by his predecessor—none more so than the State Department.

Donald Trump has harmed U.S. diplomacy in word and deed. His secretaries of state, first Rex Tillerson and then Mike Pompeo, have damaged the department deeply. Their open hostility toward career foreign affairs professionals has led to an exodus of talent, leaving important roles either unfilled or, worse, manned by unqualified political appointees.

As a result, morale in the department has plummeted, as has its prestige. The Colombian ambassador to Washington was caught on tape lamenting that "the U.S. State Department, which used to be important, is destroyed, it doesn't exist." He might have been speaking for U.S. allies and enemies alike.

Trump has also accelerated a trend, already conspicuous during the Obama administration, of conducting foreign policy from the White House. His tendency to base foreign relations on his personal ones has often left diplomats with the task of squaring the president's fondness for strongmen with the circle of U.S. interests.

All this is now Biden's to fix. To lead the repair effort, he plans to nominate former Deputy Secretary of State Antony Blinken as head of the department. A career diplomat, Blinken has an insider's knowledge of what needs fixing and the credibility with fellow professionals to do the job. It will help that Jake Sullivan and Linda Thomas-Greenfield, Biden's candidates for national security adviser and ambassador to the United Nations, have also held top positions at State.

Those are promising choices, but the president-elect must also conquer his own proclivity for personalizing foreign affairs. As a longtime member of Washington's foreign policy establishment, he has more than a passing familiarity with many world leaders and often cites old friendships when asked how he might deal with difficult diplomatic challenges.

The U.S. would be better served by returning foreign relations to the realm of institutions rather than individuals. Under Trump, only one of 28 assistant secretary positions is filled by an active-duty career officer confirmed by the Senate. Biden should rebalance the department's leadership, so the majority of Senate-confirmed positions are held by career diplomats. He should reduce ambassadorships awarded to loyalists and fundraisers. Shrinking the size of the National Security Council staff would also help restore the role of the State Department in carrying out foreign policy.

The experience of Biden's team also gives it credibility to carry out much-needed reforms of the diplomatic corps. Restoring U.S. credibility and leadership in international affairs will require its diplomats to be as fluent in hitherto neglected issues of global import—such as climate change, pandemic preparedness, and economic inequality—as in matters of traditional strategic importance.

Biden should work with Congress to devise policies to attract a more diverse and digitally savvy diplomatic corps, including making it easier for midcareer professionals from the private sector to serve overseas and encouraging diplomats to spend time working outside of government. To appeal to younger recruits, State's system of promotion and career advancement should be revamped to reward innovation and performance, not personal connections and length of service.

Biden's campaign promises to "build back better" were directed to the economy, but he has an opportunity to apply the credo to U.S. diplomacy. He shouldn't waste it. **B** *For more commentary, go to bloomberg.com/opinion*

AGENDA



▶ One Meeting for Many Crises

EU leaders will gather in Brussels on Dec. 10-11 to coordinate their efforts on Covid-19, climate change, security, and external relations. And there's always Brexit left to resolve, as an accord remains nebulous.

- ► The European Central Bank decides on interest rates on Dec. 10. Economists predict the ECB will expand and extend its pandemic bond-buying program by about €500 billion.
- ▶ On Dec. 8, the National Federation of Independent Business monthly report on U.S. small-business optimism is expected to show that companies are more upbeat about the future.
- ► The Milken Institute holds its virtual Future of Health Summit on Dec. 7-9. Participants will explore the converging crises of public health, economic insecurity, and social injustice.

- ▶ Goldman Sachs's U.S. Financial Services Conference on Dec. 8 features JPMorgan CEO Jamie Dimon, KKR co-President Scott Nuttal, and Citigroup CFO Mark Mason as speakers.
- New York's school system is set to resume in-person classes beginning on Dec. 7, with students in 3-K and pre-K programs among those being allowed to return.
- ▶ Online pet-food retailer Chewy reports earnings on Dec. 8. With dog and cat parents avoiding walk-in stores and animal adoptions soaring, its business has boomed.



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BLEND

Nima Ghamsari, Founder and CEO



REMARKS

A Global Reckoning for Big Tech

- China, the EU, and the U.S. aim to rein in the power of Alibaba, Amazon, Google, and other giants
- By Shelly Banjo

The U.S. and China don't agree on much these days. Germany and France share a border and a currency but are frequently at odds. The U.K. and India like to march to their own drum. But there's one issue on which all these countries see eye to eye: Technology companies are too big, too powerful, and too profitable. And that power is only likely to intensify, leaving governments with no choice but to confront it head-on by taking the companies to court, passing new competition laws, and perhaps even breaking up the tech giants.

China is the latest to implement an antitrust crackdown, unveiling anti-monopoly rules last month that wiped \$290 billion off the stock market valuation of China's biggest companies in two days. The draft rules followed the surprise suspension of a \$37 billion stock offering by billionaire Jack Ma's fintech powerhouse Ant Group Co., making clear that no company can evade the government's crosshairs. The moves in China coincide with accelerating efforts in the U.S. and Europe to rein in Amazon.com, Apple, Facebook, and Google.

"The bigger get bigger and bigger but without being better," says Andreas Schwab, a German member of the European Parliament who championed a 2014 resolution to break up Alphabet Inc.'s Google. "Growing economic power, the growing influence on local markets all over the world, and a growing concern of competitors and consumers altogether has made it happen now."

It's no coincidence that the antitrust crusades have accelerated during the pandemic. A locked-down world has come to rely on tech companies more than ever, with many racking up gains at the expense of smaller competitors. Chinese food delivery giant Meituan was forced to apologize after a restaurant association accused it of abusing its dominance during the outbreak by requiring merchants to sign exclusive agreements and charging restaurants commissions as high as 26%. The French government postponed Black Friday to Dec. 4 to placate shopkeepers who accused

Amazon.com Inc. of stealing their sales during the latest coronavirus lockdown.

The pandemic has "put a big magnifying glass on the competition issues that you all know already existed," U.S. Senator Amy Klobuchar (D-Minn.) told a gathering of antitrust lawyers in November. "We could emerge from this pandemic with markets that are much more concentrated and less competitive."

In this new antitrust era, the old focus on usurious pricing no longer applies, because several of the biggest tech companies have established trillion-dollar monopolies by charging consumers next to nothing. Tech giants are increasingly assuming powerful positions in banking, finance, advertising, retail, and other markets that force smaller businesses to rely on their platforms to reach customers. Merchants both depend on and compete with Amazon. Spotify and other apps appear in Apple Inc.'s app store but also compete with its music service. Google isn't simply dominant in search and advertising; it preserves its status as gatekeeper to the internet by using exclusionary practices that crush competitors, the U.S. Department of Justice alleged in a lawsuit in October. And in China, Ant funds only 2% of the microloans it originates on its platform, according to the company's prospectus. The remaining 98% is underwritten by banking partners that want to leverage Ant's massive reach.

"At some point these companies get so big that even if you're the Communist Party you start to think, 'Who's holding the reins here?'" says Sam Weinstein, an antitrust professor at Benjamin N. Cardozo School of Law. The recent government moves are, he says, "a reminder to these companies, 'We're holding the reins. You may be very big and very powerful, but we're going to remind you who's boss.'"

For years, Europe alone confronted the power of footloose digital giants that chose to squat where local rules and taxes suited them. Governments were alarmed that European companies were failing to match Silicon Valley's innovations or to stop Google and Facebook Inc. from vacuuming up personal data and, with that, advertising revenue. Led by Margrethe Vestager, the European Union's competition chief, countries have sought to police the market and encourage fair play. Vestager sniffed out sweetheart tax deals she said unfairly benefited companies like Amazon and Apple and now speaks of leveling the playing field so European companies can compete with Silicon Valley and Beijing in the emerging areas of artificial intelligence, cloud computing, and 5G wireless technology.

In China the crackdown has been driven at least partly by fear that the homegrown tech industry is becoming too powerful. The country has long championed Alibaba Group Holding Ltd. and Tencent Holdings Ltd., but their hoards of data on the Chinese citizenry are a growing concern for a government long accustomed to a monopoly on surveillance. In late October, Ma, Ant's chairman, dared to call state attempts to control financial risk hope-

lessly archaic. "We cannot manage the airport the same way as the railway station, and we cannot manage the future with the way of yesterday," he told the Bund Summit in Shanghai. During the speech he also compared Chinese banks, mostly majority state-owned, to pawnshops. Two weeks later regulators shelved his blockbuster initial public offering, and the

made much of a dent. "There's an increasing consensus that what the EU has accomplished is likely not enough," Bradford says. "The high fines imposed on Google have not significantly changed the market dynamics or facilitated new entry." EU officials are looking for new tools. The EU hit Amazon

with an antitrust complaint alleging that it uses independent seller data to benefit its own retail arm. New "gatekeeper" regulation expected by yearend could head off bad behavior before it happens by threatening fines, or breakups in severe cases, for companies that don't share customer data with business rivals as well as for operators of marketplaces and search engines that favor their own services.

In the U.S. a new breed of antitrust experts is looking beyond the hoary concept that higher prices are the primary gauge of competitive harm. They say consideration should be given to privacy, control over data, workers' rights, and the overall impact on smaller companies, more than a fifth of which have closed in the U.S. since the start of the pandemic. And Americans, in general, have grown increasingly skeptical of social media companies: More than 60% say the sector has a negative effect on the country, and almost half want more regulation for social media, according to a 2020

Pew Research Center study.

Top priorities of the incoming Biden administration will include continuing the Justice Department's monopoly abuse suit already under way against Google. It's a reversal from a general embrace of tech giants, which rose from the ashes of the dot-com crash and a major antitrust case against Microsoft Corp. 20 years ago.

Representative David Cicilline (D-R.I.) is preparing legislation based on a landmark report he authored alleging wide-ranging antitrust violations by Big Tech. His proposal would invest U.S. competition cops with new powers to safeguard not just consumers but also "workers, entrepreneurs, independent businesses, open markets, a fair economy, and democratic ideals," according to the report.

China will also keep ramping up its assault on tech companies as President Xi Jinping continues to consolidate power. Not that it will be easy. The country will have to spur competition while managing it, says Andrew Polk, co-founder of Trivium China, a consultant in Beijing. "These tech companies, just like every other company in China, are expected to, at some level, support state policy. And that's not a conversation anywhere else in the world."

The Chinese draft rules are subject to change. But they'll have a material impact on the tech sector, says Scott Yu, an antitrust lawyer at Beijing-based Zhong Lun Law Firm. The new guidance signals that industry leaders seeking further consolidation through acquisitions now face restrictions, as the government could force the companies to first divest assets. "Chinese internet giants will no longer have that luxury to bypass the antitrust rules," he says. **B** — With Coco Liu, Natalia Drozdiak, Aoife White, Colum Murphy, Gerrit de Vynck, David McLaughlin, and Zheping Huang

government released the draft antitrust tech rules. China and Europe have been cooperating on competition law for 20 years. China modeled Anti-Monopoly Law from

2007 on EU statutes, says Anu Bradford, a professor at Columbia Law School who wrote The Brussels Effect, about the EU's global influence. After visiting China in 2016, Vestager said meetings with Chinese officials provided her with a "firsthand sense of the ... urgency of China's reform." The government's move against Ant shows it has more power to curb the dominance of tech companies than do Western democracies.

original

Indeed, few would argue that Europe's antitrust efforts have



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The Tesla boss has won over many Germans, but labor senses a growing threat

As Tesla Inc. builds its first European car factory, in a patch of forest outside Berlin, Elon Musk has been on a relentless charm offensive. He's pledged to create thousands of jobs; he tweets in surprisingly good German; and at a September event he donned a heavy cord vest and wide-brimmed black felt hat like those traditionally worn by local craftspeople.

The message has been warmly received, with politicians fast-tracking approvals for the factory and locals clamoring for jobs in a region that struggles

to attract investment. On Nov. 30, the Tesla chief executive officer swooped into the German capital for the third time in as many months to accept an award for his entrepreneurial achievements from the publisher of the influential *Bild* tabloid.

But there's one corner of the German economy where the lovefest feels more like a standoff: the 2.3 million-member IG Metall labor union. The group is on a collision course with the billionaire that threatens to either undermine Musk's ambitions or diminish the power of an organization that's long had an outsize role in the country's auto industry with its demands for better wages and shifts in strategy, backed up by the very real threat of strikes.

The conflict centers on Tesla's refusal to sign the kind of collective wage agreements that are

Edited by James E. Ellis and David Rocks ◀ standard in Germany. After the company ignored a letter from IG Metall seeking a dialogue, things started getting testy. At a protest in Berlin, hundreds of workers decried Tesla's poaching of a key manager from Daimler AG. And a local union leader released a statement admonishing Musk not to view wage accords as "the work of the devil," but rather as an essential component of peaceful labor relations. "It's not good for an automobile manufacturer to be in permanent conflict with IG Metall," says Christian Bäumler, deputy leader of a laboraffiliated faction of Chancellor Angela Merkel's party. "The union has organizational power, it has money, it has experience. It can endure a long fight."

Musk, too, has plenty of power, experience, and especially money—in November he surpassed Bill Gates as the world's second-richest person—and he rarely backs away from a fight. With his factory rapidly rising from the sandy plot adjacent to Berlin's beltway Autobahn, he's managed to neutralize the bureaucratic resistance that can slow big projects in Germany, courting top officials such as Economy Minister Peter Altmaier, who promised whatever is needed to get the plant operating by mid-2021. Musk's pressure to go electric has started a "successful revolution" in the car industry, Altmaier said at a conference on Nov. 24. "Without him, we would have never ever achieved this."

The Tesla factory, Germany's first new auto plant in two decades, promises to create as many as 40,000 jobs in eastern Germany, a region that lost most of its heavy industry during World War II and atrophied during the country's decades of separation. It's being built as domestic manufacturers and suppliers lay off tens of thousands of employees in anticipation of the shift to battery-powered vehicles, which require fewer parts assembled by fewer workers. The site is central to Tesla's European growth plans and sends a signal to BMW, Daimler, and Volkswagen that the U.S. upstart they long belittled or ignored has arrived on their doorstep.

Musk is no friend of organized labor. When an employee at Tesla's plant in California in 2017 sought assistance from the United Auto Workers to unionize the site, Musk fired off an email suggesting the man was seeking to undermine the company and later hinted that organizing the factory would mean no more stock options. A judge last year reprimanded Tesla for repeatedly violating the National Labor Relations Act, a ruling the company has appealed, saying it was the result of a "smear campaign" by the union and unsupported by the facts.

For IG Metall, the concern is that Tesla will follow in the footsteps of Amazon.com Inc., which has expanded in Germany without wage deals for its warehouse workers. Musk wants to run his plant like a Silicon Valley startup—luring workers with unregulated salaries, stock options, and perks such as a "mega rave cave" party space. If he succeeds, he might well threaten IG Metall's ability to get what it wants from other automakers, who could point to lower costs at Tesla as they negotiate tough cutbacks to pay for investments in electric mobility.

Already, Musk has helped set a more confrontational tone for German executives who've long felt restrained by unions. VW CEO Herbert Diess, a big fan of the Tesla boss, has repeatedly clashed with IG Metall and bemoans what he calls the "old, encrusted" structure of the world's best-selling carmaker. Suppliers Continental AG and Schaeffler AG have vowed to cut thousands of jobs and close or sell factories despite heavy



criticism from unions. And Daimler CEO Ola Kallenius has drawn labor's ire by culling some unlimited employment contracts in favor of more flexible arrangements.

Despite the threat Musk's company poses to Germany's big automakers, his foray into the birth-place of the combustion engine may ultimately prove a blessing for an industry that can be slow to change, says Ferdinand Dudenhöffer, director of automotive research at the University of Duisburg-Essen. For unions, by contrast, there's little upside as Musk's arrival represents growing peril for a model that may have run its course. "Our corporate culture tends to keep things the way they've always been," Dudenhöffer says. "Musk is someone who can break that open." —Stefan Nicola and Christoph Rauwald

THE BOTTOM LINE A Tesla factory is being built even as German manufacturers cut thousands of jobs to adapt to making electric vehicles, which require fewer parts assembled by fewer workers.

▲ An IG Metall protest in Berlin over Tesla's poaching of a Daimler executive

Where 'Made in China' Is Beautiful

 After decades of lagging behind foreign rivals, domestic brands are increasingly competitive

In 2008 at least six babies died and 300,000 fell ill after drinking made-in-China infant formula tainted with toxic chemicals. In response, many Chinese parents embraced foreign brands, catapulting the likes of Danone SA's Aptamil and Nestlé SA's Illuma to the top of the market. Yet for the past two years, the leading formula brand in China has been made by China Feihe Ltd., a Beijing company that emphasizes its local roots rather than seeking to obscure them. "More suitable for Chinese babies," the company's advertising boasts.

In categories ranging from baby food and bottled water to sportswear and skin cream, Chinese brands are putting pressure on global rivals that depend on the country for much of their growth. While increasing nationalism has boosted the momentum of domestic products for the past couple of years, the Covid-19 pandemic is hastening the shift. With prices typically lower than foreign brands', domestic products have increasing appeal in times of constrained household budgets, and the growth of online sales has weakened the multinationals' advantages in distribution and marketing. "Chinese shoppers are showing stronger confidence in local brands," says Helen Wong of Qiming Venture Partners, which has backed local startups such as lingerie maker Neiwai and cafe chain Coffee Box. "The coronavirus is accelerating the trend as people stay home, watch livestreaming, and shop."

Investors have piled into domestic companies that are overtaking multinational rivals, doubling the combined value of China's 500 top brands in the past four years to about \$3.8 trillion, according to marketing consultancy World Brand Lab. Clothing and shoe manufacturer Anta Sports Products, which in 2018 passed Nike to become China's No. 2 sports apparel brand behind Adidas, is up more than 50% this year even as the benchmark Hang Seng index has fallen 6%. Shares of China's biggest bottled water brand, Nongfu Spring, have more than doubled since its September Hong Kong trading debut. Yatsen Holding, owner of cosmetics house Perfect Diary, a growing threat to the likes of L'Oréal and Estée Lauder, has jumped 75% since its U.S. initial public offering in November.

Local names account for seven of the top 10 cosmetics brands, up from just three in 2017, according to market researcher Daxue Consulting. L'Oréal SA's Maybelline makeup line has seen its share in China plunge, to 9.1% last year from more than 20% in 2010, according to Euromonitor International. In the skin care and lotion category, the share of L'Oréal Paris dropped, to 4.5% last year from 5.6% in 2014, putting it neck and neck with local brand Pechoin. The growing strength of Chinese cosmetics makers can be traced to their smart online strategy, according to Derek Deng, a partner in Shanghai with Bain & Co. "Insurgent Chinese brands are more likely to be digital from Day One," he says, while multinationals tend to favor physical stores.

Perfect Diary, launched in 2017, now stands just behind several European-owned brands, with 4% of the crowded market for so-called color cosmetics such as lipstick and mascara, Euromonitor estimates. Its advertising stresses that its products come from the same manufacturers as Dior, Lancôme, and Armani but sell for less than one-third the price. It's teamed with Mondelez International's Oreos for a skin foundation cream (no, it doesn't contain ground-up cookies; the box looks like an Oreo). On Singles Day, the Nov. 11 shopping palooza organized by Alibaba Group Holding Ltd., Perfect Diary's online store included livestreams of influencers pitching products such as animal-themed eye shadow (co-branded with the Discovery Channel) featuring colors and packaging inspired by rabbits, deer, and fish. "We've proven we can stand out in a highly competitive market," says David Huang, chief executive officer of Yatsen.

Foreign brands aren't finished in China, of course. They dominate categories such as high-end handbags and luxury cars. Estée Lauder Cos. sold more than 2 billion yuan (\$300 million) of products on Singles Day with a livestreaming campaign, twofor-one discounts, and installment payment plans. And KFC-still the biggest fast-food chain in China-is supplementing its fried chicken with products such as fast-cooking stinky sour snail noodles to cater to diners stuck at home in the pandemic. "The

- ▼ Top-selling brands in China by percentagepoint change in market share, 2010 to 2019
- Domestic brand

Skin care

1.2 L'Oréal Paris 2 Pechoin 3 Lancôme

Baby formula

- Feihe
- 2 Aptamil
- 3 Illuma

Sports apparel

- Adidas
- 2 Anta
- Nike



8.3

■ attitude of big international brands is changing significantly," says Wu Wenmi, founder of Wenzihui MCN, an agency in Hangzhou that partners with Alibaba. "They are more humble now and willing to hear our opinions of how to play the game."

One way Chinese companies are playing the game is with marketing that resonates for locals. While foreigners' ads stress the nutritional value of their infant formula, Feihe nurtures relationships with consumers via loyalty programs, new-parent support groups, and collections of bedtime stories. And Chinese brands are increasingly tailoring their wares to domestic tastes. China Mengniu Dairy Co., for instance, is stepping up sales of innovations such as pineapple-flavored cheese and squid-infused snacks in addition to its lineup of basic milk and fruit yogurts. "Foreign brands were so innovative three decades ago when they first came to China," Mengniu CEO Lu Minfang said at a November media briefing. "But now they're developing slower than local brands." —Bruce Einhorn and Daniela Wei

THE BOTTOM LINE Chinese brands account for seven of the country's top 10 cosmetics lines, up from three in 2017, while the share of L'Oréal's Maybelline makeup has plunged by half since 2010.

Finding Flights to Deliver Vaccines

 The pandemic has vastly reduced airlines' capacity to haul freight

The coronavirus has left Deutsche Lufthansa AG's passenger fleet flying at just 25% capacity. But in a set of cooled warehouses on the fringes of Frankfurt's airport, a 20-member task force is hard at work figuring out how the carrier can manage the coming boom in a different part of its business: airlifting millions of doses of the vaccines meant to end the global pandemic.

Lufthansa, one of the world's biggest cargo carriers, began planning in April in anticipation of the shots that AstraZeneca, Moderna, Pfizer, and others are developing in record time. Now that the drugmakers are starting to apply for authorization, Lufthansa's task force is rushing to devise ways to fit more of the crucial payload onto the airline's 15 Boeing 777 and MD-11 freighters, along with hold space in its passenger jets. "The question is how



we scale it up," says Thorsten Braun, who leads Lufthansa's part in the global effort.

Airlines will be the workhorses of the attempt to end the pandemic, hauling billions of vials to every corner of the globe. It's an unprecedented task, made more difficult by the carriers' diminished state after culling jobs, routes, and aircraft to survive a crisis that's reduced air traffic globally by an estimated 61% this year. "This will be the largest and most complex logistical exercise ever," says Alexandre de Juniac, chief executive officer of the International Air Transport Association, the industry's chief lobby. "The world is counting on us."

IATA estimates that the equivalent of 8,000 loads in a 110-ton-capacity Boeing 747 freighter will be needed for the airlift, which will take two years to supply some 14 billion doses, or almost two for every man, woman, and child on Earth. It's a tall order, given about one-third of the global passenger fleet is still in storage, based on data from travel analytics provider Cirium.

One of the biggest challenges will be finding enough planes. There are some 2,000 dedicated freighters in use, carrying about half of all goods moved by air. The remainder of the freight typically goes in the bellies of the world's 22,000 passenger jetliners. Air cargo volume has tumbled this year, not for lack of demand, but because so many passenger planes are sitting idle. Airlines have drafted about 2,500 passenger planes into cargo-only roles, but distributing the vaccine would be easier if fleets were flying their usual schedules.

At the start, space will be limited because of competing demand from merchants seeking to deliver goods bought online during the Christmas season. Then the sheer volume of vials from ▲ A refrigerated shipping container in Lufthansa's Cargo Cool Center at Frankfurt Airport

▼ Vaccine storage temperature*

AstraZeneca 2C to 8C

Moderna

Pfizer -70C drugmakers will further clog the system. Pfizer Inc. plans to ship 1.3 billion doses of its vaccine by the end of 2021. Moderna Inc. is ramping up to a production level of 500 million injections per year. AstraZeneca Plc has the capacity to make 2 billion doses. "What we have to do is very quickly help the world get up on its feet," says Dennis Lister, vice president for cargo at Emirates, the largest long-distance airline. "Part of that is making sure we get vaccines on planes to people that need it so we get people flying again."

The vaccine developed by Pfizer and BioNTech SE must be transported at –70C (–94F), colder than winter in Antarctica. The choreography will be delicate, because virtually no aircraft are capable of keeping items so cold on their own. Carriers will instead rely on Pfizer's special thermal shipping containers, which can be used as temporary storage units for as long as 15 days if refilled with dry ice. There's no room for error: Once thawed, the vials can't be refrozen.

United Airlines Holdings Inc. has already begun flights to position Pfizer's vaccine in areas where it will be needed if it receives regulatory approval, says a person familiar with the matter. Pfizer and the airline declined to comment on the flights.

Delta Air Lines Inc., American Airlines Group Inc., and other carriers say they're prepared to handle shipments of supercold vaccines. Delta normally considers dry ice to be a "dangerous good" that can't account for more than 50% of hold space, but it's increasing the amount it will allow to be used with vaccines carried on its planes.

"If all vaccine producers ship within a narrow time frame, the situation would require all cargo carriers to be involved," says Vittal Shetty, who helps oversee cargo operations at American.

United Parcel Service Inc. has built facilities in Louisville and in the Netherlands with a total of 600 deep freezers that can each hold 48,000 vials of vaccine at temperatures as low as -80C. FedEx Corp. has added freezers and refrigerated trucks to its already extensive cold-chain network, and Richard Smith, who's heading its vaccine effort, has pledged to free as much air and ground capacity as needed. "We're just waiting until they tell us they have a vaccine ready, and we will be ready to go out there and deliver it to every ZIP code in the U.S.," he says. "We'll be ready to deliver it around the world as well." —*Christopher Jasper and William Wilkes, with Layan Odeh, Mary Schlangenstein, and Thomas Black*

THE BOTTOM LINE It would take the equivalent of 8,000 loads in a Boeing 747 freighter to carry all the vaccines needed to inoculate the global population, making airlines key to ending Covid-19.

BW Talks George Goldsmith

Compass Pathways developed a synthetic form of psilocybin, the psychoactive ingredient found in "magic mushrooms," for use in treating depression. CEO Goldsmith says the key is using the hallucinogenic as part of a broader therapy. —*Carol Massar*



● Goldsmith and his physician wife were drawn to research on hallucinogenic mushrooms while seeking a treatment for their son's mental health issues. ● The Food and Drug Administration designated their work a "breakthrough therapy" in 2018 ● It's now in Phase II trials

Millions suffer from depression. Does that make this a good market from a business sense?

There's a tremendous amount of suffering. And I think we've been pretty good at developing tools to ameliorate 70% of that. But [helping] the other 30% is quite difficult. So we have the opportunity to do something unique here.

Is this potentially a billion-dollar drug?

Well, I think it has the potential to be a therapy. It's really important that it's not just a drug. It's a drug that's given in combination with psychological support, and that's the critical bit.

How does your therapy work?

We provide a very high dose of psilocybin in a carefully controlled setting under supervision by specially trained therapists—so this isn't anything to do at home. Patients listen to a special soundtrack, and they're really supported through

this process. Afterwards, many patients experience an immediate reduction in depression that actually lasts for quite a while.

More research is being conducted?

We're operating now in 10 countries doing clinical research at 21 sites. We're looking at how do we do the real, deep research to generate the information and insight we need to go to Phase III trials.

Despite getting the FDA designation, you've got to do more rigorous testing, especially with some concerns about hallucinogenics?

Absolutely, because obviously there's a history here. So the first port of call for us was to speak with regulators and payers, and they saw this is promising. There's almost a third of [depression] patients who aren't helped by [conventional] medicines. I think there's a huge opportunity to develop a new model of care for them.

• Interviews are edited for clarity and length. Listen to *Bloomberg Businessweek With Carol Massar*, weekdays from 2 p.m. to 6 p.m. ET on Bloomberg Radio.

Did Airbnb Win The Pandemic?

 The company's ability to adapt to Covid puts it ahead of rivals and may have saved its IPO

Jeff Iloulian braced for his business to crash when the Covid-19 pandemic set in this spring. Iloulian runs HostGPO, a company that helps owners who rent property through Airbnb and similar platforms negotiate discounts on household products and furnishings. His clients suddenly had so few guests in lucrative urban markets that some hired movers to haul furniture from downtown apartments to nearby warehouses.

This would have been a disaster for HostGPO, except that those same property managers were doing big business in rural markets, and they began hunting for real estate in places not known as vacation hotbeds: Lake Arrowhead in addition to Lake Tahoe, eastern Pennsylvania as well as the Hamptons. "People are buying expensive furniture in the Poconos right now," says Iloulian. "The demand moved around, it didn't vanish."

The shifting geography of Iloulian's business helped save his year. It also saved Airbnb, the short-term rental platform that most of his clients rely on for many of their customers. Heading into 2020, Airbnb was poised for one of the most anticipated initial public offerings of the year-and a validation for one of the buzziest tech startups of the last decade. The coronavirus changed that. While the pandemic has been terrible for Airbnb in many respects, the company has done well compared with airlines, hotel brands, cruise lines, and most other parts of the global travel industry. Its revenue fell 18% during the third quarter compared with 2019. That was far better than Marriott International Inc., which reported a 57% drop in sales, and online travel agency Expedia Group Inc., whose revenue declined 58%.

In fact, the third quarter was Airbnb's most successful to date by some financial measures. To some extent that's a result of drastic spending cuts.

The company fired 1,800 workers, about a quarter of its total; canceled marketing efforts; and curtailed plans to expand into new lines of business. But its relative resilience in an historically bad year for the travel industry is also a result of a flexible business model that allowed the company to meet customers in the places they wanted to go.

Airbnb filed to go public on Nov. 16 and is seeking to raise \$2.6 billion in an offering that could value the company at almost \$35 billion. That's up from a 2017 funding deal that valued Airbnb at \$31 billion—and a significant recovery from the \$18 billion valuation it drew in April when it raised debt to help ride out the pandemic.

Investors will be evaluating a business that looks much different than it did a year ago. Gross bookings in Airbnb's top 20 cities fell by half in September compared with the year before, while bookings outside those major markets was down 19%, the company said in its S-1 filing. International stays declined



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Cheap constant access to piping hot media
Protect your downloadings from Big brother
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DATA: AIRBNB

by roughly two-thirds, and travelers taking lodgings less than 50 miles from their homes constituted the fastest-growing part of the business.

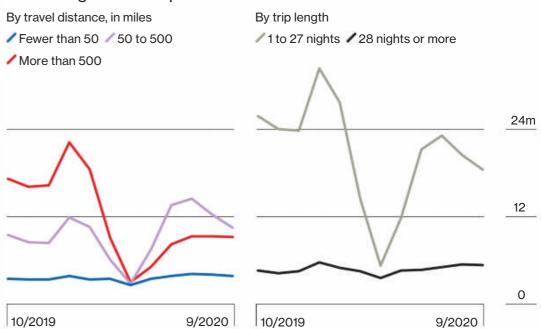
Airbnb has never fit into existing categories. Silicon Valley claims it as a tech startup, one of the shining stars of a sector once referred to as the sharing economy. Hotel chains see it as a threat while dismissing it as an online travel agency, or OTA, akin to Expedia Group Inc. or Booking Holdings Inc., which connect vacationers on one side of the platform with lodging owners on the other. While that comparison is apt in some ways, Airbnb exists in its current form because it has created a whole new travel category, transforming the activity of crashing in other people's homes into a millennial-friendly alternative to hotels that either seemed too boring or were too expensive. For customers, it's an alternative to Marriott, not Priceline.com.

The company is outshining OTAs and hotel companies during the pandemic, both of which it listed as competitors in its IPO filing. Unlike other OTAs, Airbnb doesn't book flights, and it doesn't need business travel or big conventions as much as traditional hotels do. All this left it less exposed to the specific shape of pandemic-era weakness in travel. When Covid-19 turned hotel (and apartment building) lobbies and elevators into worrisome zones of potential infection, the company played up its ability to offer isolated destinations and prodded hosts to offer discounts to customers booking longer-term stays.

The part of the travel industry Airbnb most



Airbnb Nights and Experiences Booked



resembles right now may be budget hotels. Choice Hotels International Inc., which franchises brands such as Comfort Inn and Econo Lodge, has also benefited as families canceled flights and took road trips instead. Many motels let guests enter rooms from the parking lot, bypassing common areas. Choice's revenue fell 31% for the first nine months of the year, right in line with Airbnb over the same period.

The company also shares one of the primary problems cheap hotels face: crime. Roadside motels have persistent issues with drug dealing and prostitution; Airbnb's "party house" problem has led to lawsuits blaming it for its role in shootings, other crimes, and the spread of Covid-19. The company declined to comment but has recently highlighted measures it's taking to make its platform safer.

Airbnb's strength may be that it can morph into a kind of artisanal Econo Lodge, offering value lodging for car vacations when that's where the demand is. When it comes time to return to cities, it may find the competitive landscape changed. Many markets it relied on pre-pandemic, including Amsterdam, Barcelona, and New York, have sought to increase regulation on short-term rentals, and property owners may convert some units to permanent housing.

"I'm typically super-optimistic about Airbnb because they're so agile," says Scott Shatford, chief executive officer of AirDNA, a company that collects data on the short-term rental market. "But the urban recovery isn't going to be the slingshot, V-shaped recovery that it was in rural markets. There's going to be so much competition from hotels, and they're going to have to battle for guests on rates." — Patrick Clark

THE BOTTOM LINE Airbnb's business has shrunk during the pandemic, but thanks to a flexible business model it's in far better shape than many competitors.

■ Iloulian says that "The demand moved around, it didn't vanish'

Amazon's European Adventure Could Be Different From Google's

• There are signs that the company and the European Union are working to avoid an antitrust showdown

Amazon faced the prospect of an escalating conflict with the European Union in November when Margrethe Vestager, the EU's competition chief, laid out evidence that the company may have unfairly used sales data from smaller retailers on its platform. The specter of Amazon using such data to identify emerging trends has been a major concern for regulators worldwide, and interest from Vestager-perhaps the world's most feared antitrust enforcer—was an ominous sign. The EU also recently started a second probe into how the company picks products for a highlighted "buy box."

But while Vestager laid the groundwork for what could be a repeat of the bruising fight the EU has waged against Alphabet Inc.'s Google, resulting in fines of about \$9 billion, she has also struck a surprisingly conciliatory note, hinting that Amazon.com Inc. might not have to head down the same track.

The difference may be Amazon's willingness to address enforcers' concerns before the legal process goes too far. Amazon settled a 2017 EU probe into e-books, says Vestager, and has worked with other regulators, such as Germany's Federal Cartel Office. "Amazon has been very forthcoming to solve the issues at stake" in other cases, Vestager told reporters on Nov. 10. While Google did try to settle three investigations the EU waged over the past decade, its offers either came too late to be taken seriously or didn't go far enough to soothe angry rivals and their political supporters.

Both Amazon and Vestager's office declined to comment. Amazon said in November that it disagrees with the antitrust charges, and that it supports small businesses while facing significant competition from them.

Amazon may have scored some points with Vestager by remaining "open throughout to making changes in its business practices, rather than starting out by saying its conduct is unassailable and it has nothing to concede," says William Kovacic, a law professor at George Washington University and a former Federal Trade Commission chairman.

Timing might be on Amazon's side, says

Jay Modrall, a Brussels-based lawyer for Norton Rose Fulbright, because the EU is considering proposals that could set clear guidelines for how large tech companies operate. The new rules, set to be published in December, could weaken the desire to pursue enforcement actions; the EU has closed a number of antitrust probes based on pledges to change behavior with no fines, including two this year.

The shadow of the fight with Google also hangs over any future EU enforcement action against U.S. tech companies. For the EU, the Google probe served as a test of strength, showing the regulator could finalize a complex case under intense pressure. Vestager's predecessor, Joaquín Almunia, was forced to pull back on his planned settlement



Vestager



with Google after publishers and politicians said it didn't go far enough.

Vestager pursued three separate actions against Google and ended up imposing record fines on the company related to its advertising contracts, shopping, and Android. Still, critics slam the EU for taking too long and not imposing behavioral changes on Google that would make it easier for smaller companies to compete. EU officials say their job was merely to stop the bad behavior-and

sorting facility in Schoenefeld, Germany

reasons to play nice.

NMAZON: FLORIAN GAERTNER/PHOTOTHEK/GETTY IMAGES. VESTAGER: THOMAS TRUTSCHEL/PHOTOTHEK/GETTY IMAGES; DATA: COMPILED BY BLOOMBERG

not necessarily to give small companies a boost.

But her campaign against Google has changed the

atmosphere around antitrust enforcement enough

to open up other avenues to force change. She no

longer needs to score a win against Silicon Valley.

kept the pressure on Google. While dozens of

companies filed complaints against the search giant, Amazon sellers—the purported victims of

its anticompetitive behavior-have been relatively

quiet. Agustin Reyna, legal director of consumer

advocacy group BEUC, says he would support an

Amazon offer to make sure consumers get the best choice of sellers and the lowest prices. One thing

he says wouldn't be good either for sellers or cus-

THE BOTTOM LINE Amazon appears to be taking a cooperative

approach with European antitrust enforcers, who have their own

tomers: "Endless litigation." — Aoife White

Salesforce Aims

Marc Benioff buys Slack to challenge the

By spending \$27.7 billion to buy Slack Technologies

Inc., Marc Benioff, Salesforce's co-founder and

chief executive officer, is making his most aggres-

maker of cloud-based apps for managing customer

Benioff sees the deal as a chance for Salesforce, a

At Microsoft

world's largest software company

sive move yet to take on Microsoft.

Amazon also isn't facing one key factor that

Vestager has said she wishes she'd been bolder.

moment where you just don't have the swagger?" Microsoft Corp.'s Teams product, which hosts videoconferences, offers a workplace chatroom, and provides automation tools, is a top rival to Slack.

do something like this? Or are you weak? Or is it a

Salesforce will inherit the rivalry, potentially complicating its own turbulent relationship with Microsoft.

Both Salesforce and Slack have tried to get regulators to scrutinize Microsoft in recent years, with Salesforce unsuccessfully urging European nations to block Microsoft's 2016 acquisition of LinkedIn, the professional networking service. Microsoft considered buying Slack before deciding in 2017 to build Teams instead. In July, Slack asked European Union antitrust regulators to investigate Microsoft, claiming it unfairly foists Teams software on millions of users by distributing it for free with its Office cloud product suite.

Microsoft's Dynamics 365 already competes with Salesforce in the market for software that salespeople use to manage their deal pipelines. The two also vie for clients trying to improve productivity with Microsoft's Office 365 and Salesforce's Quip, an acquired product that is a market laggard. But Microsoft may see Slack as a bigger threat than the company that purchased it, says Gregg Johnson, a former Salesforce executive. "Slack's use case hits at the heart of Microsoft's information worker's productivity suite," he says. "That's like the jewels in the crown of Microsoft."

Salesforce's largest deal before this, buying Tableau for about \$15 billion last year, was an attempt to go toe-to-toe with Microsoft in analytics software and business intelligence. In effect, the company's strategy has been to replicate the business lines of its larger foe. So far, it seems to be working. Salesforce projected that its revenue could reach as much as \$25.6 billion in the next fiscal year, almost double the company's performance in the fiscal year that ended about two years ago.

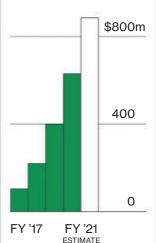
But Benioff still seemed far off from his longrunning goal for Salesforce to play a big role in office communications. The company introduced a Slack-like tool called Chatter at its annual user conference in 2009, the same year Slack was founded. Salesforce included Chatter with its other products and even bought a 2011 Super Bowl ad featuring a cartoon version of recording artist Will.i.am to promote it, but it didn't spark much conversation.

Slack gives Salesforce another chance, and it's starting from a position of strength. The two companies said their vision is to "create the operating system for the new way to work." It was hard to miss how much that sounded like a veiled reference to Microsoft, maker of the most popular operating system for personal computers. —*Nico Grant*, with Dina Bass

THE BOTTOM LINE Salesforce has been cultivating a rivalry with Microsoft for years, and its purchase of Slack is a major escalation that will expand its reach to corporate employees.



▼ Slack revenue





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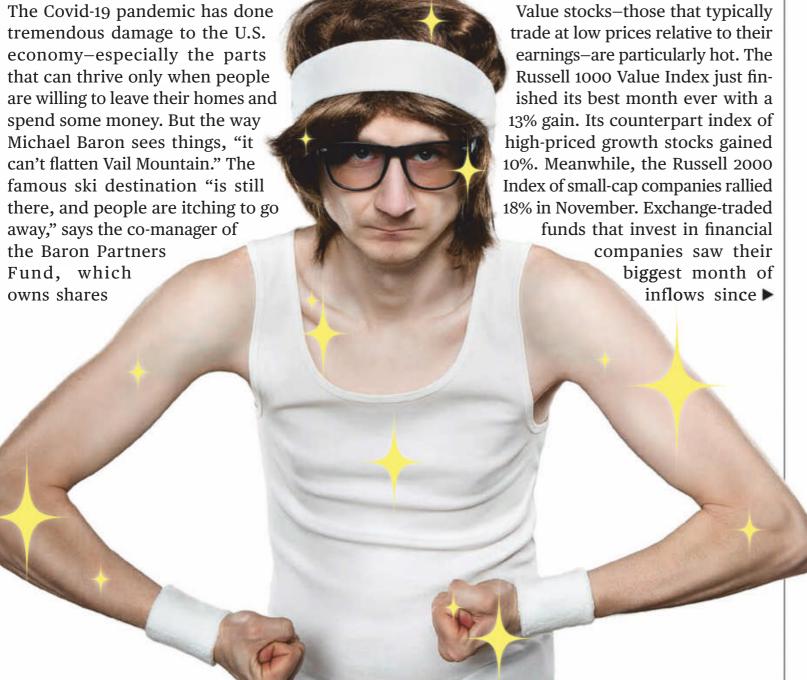
The B Team's Time To Shine

Investors shift to stocks that depend on economic recovery of Vail Resorts Inc. "There's a lot of pent-up demand for leisure travel."

This type of thinking has been dominating Wall Street in recent weeks. The economy isn't really back, but the market is ready to assume it will be. And promising vaccine developments have investors betting on the companies they think will benefit the most from a return to normal. Shares of Vail Resorts–a longtime holding of the Baron fund-rose almost 19% in November, compared with about 11% for the S&P 500. Before November, the stock had been lagging the S&P in 2020.

Investment pros are calling this a long-awaited rotation: away from the technology-driven mega-companies, such as Amazon.com, Facebook, and Alphabet, that have been the undisputed stars of this bull market and toward the B team of ... well, almost everything else. Besides cyclical sectors of the market that rise and fall with the economy, such as travel, leisure, energy, financial, and industrial companies, the rotation has also meant better performance from

smaller companies and non-U.S. stocks. Value stocks-those that typically trade at low prices relative to their earnings—are particularly hot. The Russell 1000 Value Index just finished its best month ever with a 13% gain. Its counterpart index of high-priced growth stocks gained 10%. Meanwhile, the Russell 2000 Index of small-cap companies rallied 18% in November. Exchange-traded funds that invest in financial



Edited by Pat Regnier ◀ 2016, while those tracking industrials received the most since January 2018, and energy ETFs took in the most new cash since March as oil rebounded to a more than eight-month high on Nov. 25.

At its heart, the rotation is based on the idea that there's a lot of money in the economy waiting to be spent on things besides video streaming and online shopping. The U.S. personal savings rate was 7.2% at the end of 2019. By April it had surged to 33.7%, and it was still 13.6% in October—almost double where it started the year. Deposits at U.S. commercial banks swelled to almost \$16 trillion in November, up from \$13.2 trillion at the end of last year. If consumers revert to their pre-pandemic ways, that could set off what Jim Paulsen, chief investment strategist for the Leuthold Group, has called "a growth bomb," as companies gear up to replace lean inventories.

Fund managers with a value bias say there are still opportunities to take advantage of the change in investors' tastes. Chris Davis of Davis Funds points to the banks Wells Fargo & Co. and Capital One Financial Corp., whose prices were hammered when the lockdowns began in March and still haven't fully recovered. Davis thinks investors have overlooked how banking regulations enacted after the global financial crisis have made these lenders better able to handle recessions. "When you look at their valuations, the amount of cash they produce, the capital ratios that they have, the reserves they've been able to put up—they really have this characteristic of resilience and durability and yet are priced at this sort of shockingly low level," he says.

The star money managers of the growth-stock world, who rode the outperformance of tech to dazzling returns, have also taken notice of the shifting mood. Cathie Wood, whose firm, ARK Investment Management, runs three of the top 10 best-performing ETFs this year, said in a recent webinar that an economic recovery "may benefit many value sectors in the short term." But she argues that even without a pandemic, many traditional industries are still vulnerable to being displaced by new technology. "The value world will be a little bit of a minefield," she said.

Wall Street has heard the rotation song before. What looked for a moment like some durable rotations from growth to value in recent years ended up fizzling out. And rotations don't typically occur in a perfectly orderly way—on some days the changes in market leadership make it appear that investors are once again more worried about the virus than they are optimistic about vaccines. There's still a difficult winter and a U.S. presidential transition ahead, and the economy could sustain more damage than investors are counting on if Washington

doesn't come up with additional economic stimulus and aid for laid-off workers.

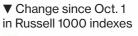
So how long might this shift actually last? "Everyone has been trying to time the growth-to-value trade for years now," says Dave Wagner, port-folio manager and analyst at Aptus Capital Advisors. This time, he thinks the turnaround brought about by a vaccine could be enough to make a rotation stick. "Unlike the past few times we've seen, there's a better backdrop for value," he says. "You have a longer runway that can continue to drive value forward in the future, more so than growth."

Rob Arnott, the founder of investment adviser Research Affiliates, has for years been a steadfast advocate for stocks with low valuations and a skeptic of the growth-stock boom. "I've been called a perma-bear," he says. "But I love stocks when they're cheap." Until pretty recently, that's been a tough stance to hold: Over the past decade, the Russell index of value stocks has lagged growth stocks by an annualized 6.7 percentage points. But Arnott says when value is in style, it can dominate for a long time. After the tech bubble burst 20 years ago, the Russell 1000 Value Index did better than the Russell 1000 Growth Index from March 2000 until August 2006. "The original tech bubble in 2000-how many of the 10 largest market-cap tech stocks beat the market over the next 10 years?" he asks. "Zero. Not one."

One big difference from 2000: Growth and tech stocks aren't exactly on the ropes—they just haven't been the fastest risers in recent weeks. Still, Arnott says that, much as in 2000, investors may finally be starting to see growth stocks as overpriced and value stocks as the better deal. "I do think we're going to see somewhere between impressive and stupendous outperformance for value over the next three to five years," he says.

The technology bulls remain unflustered. Vance Howard of Howard Capital Management, which has bet big on the tech-heavy Nasdaq 100 Index, says tech stocks are still doing well enough in comparison to value to suggest that market sentiment hasn't switched yet. He thinks some of the hype around the rotation is a result of value fund managers who missed out on most of this year's rally and need a story to tell clients. "A lot of managers want to start preaching their book because they've got to make up a reason why they're down," he says. But for now, at least, investors who've taken the road less traveled have some good numbers to brag about. —*Michael P. Regan, Vildana Hajric, and Claire Ballentine*

THE BOTTOM LINE With a vaccine on the horizon, investors are betting there's a lot of pent-up demand that will start to flow to companies beyond the usual tech winners.



✓ Value

Growth



10/1/20 12/1/20

Covid Strains Microcredit

 The world's poorest borrowers are struggling to keep up with the loans that fund their livelihoods

Peter Manu was a microlending success story. For a dozen years, by borrowing a few hundred dollars at a time, he'd been able to buy children's shoes to sell in the central bus terminal in Accra, Ghana's capital. With the proceeds, he paid his debts and had enough left over to provide for his two children. Then Accra's schools closed in response to the coronavirus pandemic. Foot traffic in the bus terminal dried up, and so did Manu's sales. He's switched to handbags, but things are still difficult. "I can't even take care of my kids," he says. Nor can he make payments on his 2,000 cedis (\$343) loan.

The microlending movement, which envisions small loans as a lever to raise millions of people out of poverty, has drawn broad support from governments and sizable investments from foreign financial institutions. The small loans can help the poor buy what they need to make a living, and they come from an array of lenders including specialized banks, local credit unions, and partnerships between banks and nongovernmental organizations. In the 15 years since Muhammad Yunus won the Nobel Peace Prize for his work on the concept, the number of microloan borrowers has ballooned to 140 million, with \$124 billion in loans outstanding.

But the economic fallout from the pandemic has decimated small borrowers' ability to pay. The current crisis compounds reports of abuse and aggressive collection tactics in some countries, including Cambodia, India, and Nigeria. "When a microloan client misses a payment, they are almost always contacted by a credit officer within a couple of days," says Naly Pilorge, a human-rights advocate in Cambodia, where 2 million borrowers owe microlenders about \$4,000 on average. "The pressure varies, ranging from reminders to repay, to abusive or threatening language, to direct threats of involving local authorities or police, to threats of selling the client's land without their consent," Pilorge says. Kea Borann, chairman of the Cambodia Microfinance Association, says such accusations are "obviously overstated" though there are "isolated cases."

Part of the problem is that the promise of microcredit relied on local, purpose-driven lenders who'd be forgiving of delinquent borrowers, says Milford Bateman, a visiting professor of economics at Juraj Dobrila University of Pula, in Croatia. Today, lenders

tend to be for-profit firms, which often borrow from bigger institutions to make loans. "Covid-19 has really created a problem in many countries, because obviously people can't afford to repay their loans," Bateman says. "That means the microfinance institutions can't afford to repay the banks."

Some governments have tried to intervene. India put a moratorium on collections for six months through the end of August. In Nigeria, where 4 million people owe on average \$110, the central bank gave microlenders approval to extend repayment or suspend interest or principal payments. But getting customers to respond and agree to the new terms isn't easy. "We deal with very low-income earners, those at the bottom of the pyramid. Their businesses are very fragile," says Shikir Caleb, executive secretary of the National Association of Microfinance Banks. "If we send a message to them to come and discuss, they think we're inviting them to come and pay the loans, so they don't come."

In Ghana, where about 22% of people carry small loans, tailors' business has slowed down because of restrictions on public gatherings, and taxi drivers aren't earning commissions. "We're talking about a class of people who only make income by going out on a day-to-day basis," says Tweneboah Kodua Boakye, executive secretary of the Ghana Association of Savings and Loans Cos. Some borrowers who lenders believed were safe are defaulting.

That doesn't bode well for inclusion of the poor



Yunus

▼ A salesman at Accra's Tema bus station





✓ into formal financial institutions, another goal of microlending. In Asia about 90% of the 180 million poor households lack access to banks, while most formal financial institutions deny the poor their services because of perceived risk, according to the Asian Development Bank.

In an interview, Yunus defends microlending as practiced by the Grameen Bank in Bangladesh. There, borrowers don't put up collateral. The bank also has rules to protect borrowers during disasters, such as issuing fresh loans to compensate for lost capital, suspending repayment, or extending a loan period. Many other lenders, he says, are not guided by social principles, and may ask for collateral or push loans for consumer goods. "We have to distinguish between the right microcredit and the wrong microcredit," Yunus says. "Microcredit lenders who follow the social business principle of zero personal profit—and the others who want to make profit for the owners, supported by big investors, and banks, saying, 'We're doing microcredit.'"

Signs of trouble for the microcredit industry were there long before Covid. After years supporting microfinance institutions, the U.S. Agency for International Development in a 2018 report to Congress cast doubt on the loans. For the very poor,

defined then as those who lived on less than \$1.90 per day, "even small debts—most frequently used to meet immediate consumption needs—can easily become a significant burden that push a family deeper into poverty," the report said.

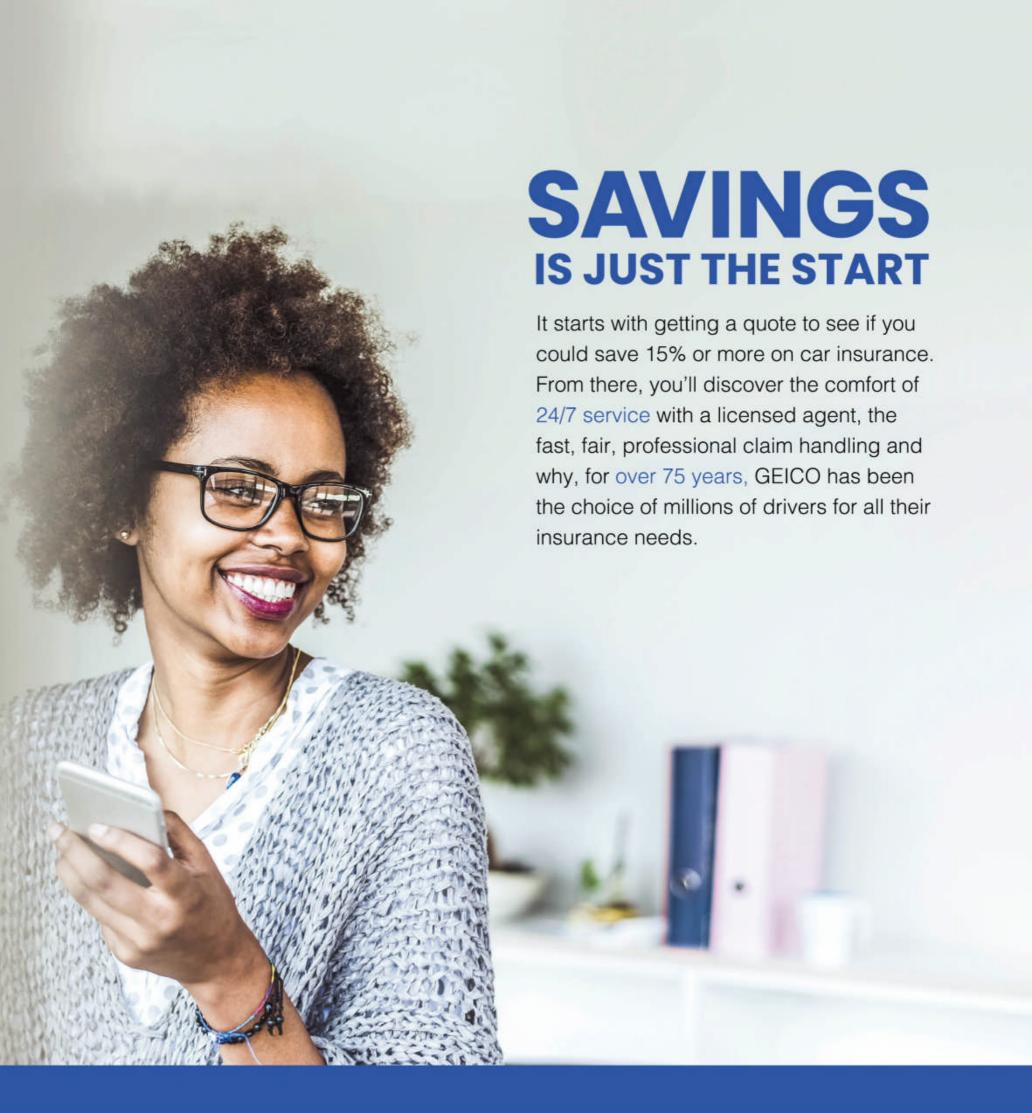
About a third of microfinance companies say they anticipate "a solvency issue" by early 2021, according to a report from Washington-based Consultative Group to Assist the Poor. If the deterioration continues, the group warns, the sector "could get into global crisis territory soon," leaving strapped governments to bail out lenders.

In India, which instituted microlending reforms almost a decade ago following allegations of aggressive collection practices, the central bank projects that the share of loans in default will jump from 8.5% to 12.5% by March. Lenders are now focused on collections and reluctant to renew loans. That's a big problem for Anil Kumar Gupta, a carpenter in Uttar Pradesh who's subsisted on microloans to feed his family of nine. "No bank wants to lend money without security," he says. —*Philip Heijmans, Emele Onu, Moses Mozart Dzawu, and Suvashree Ghosh*

THE BOTTOM LINE Microfinance can provide low-income people with the money they need to run a small busines, but the pandemic is making the loans riskier for them—and their lenders.

▲ Manu sells his wares

"We have to distinguish between the right microcredit and the wrong microcredit"



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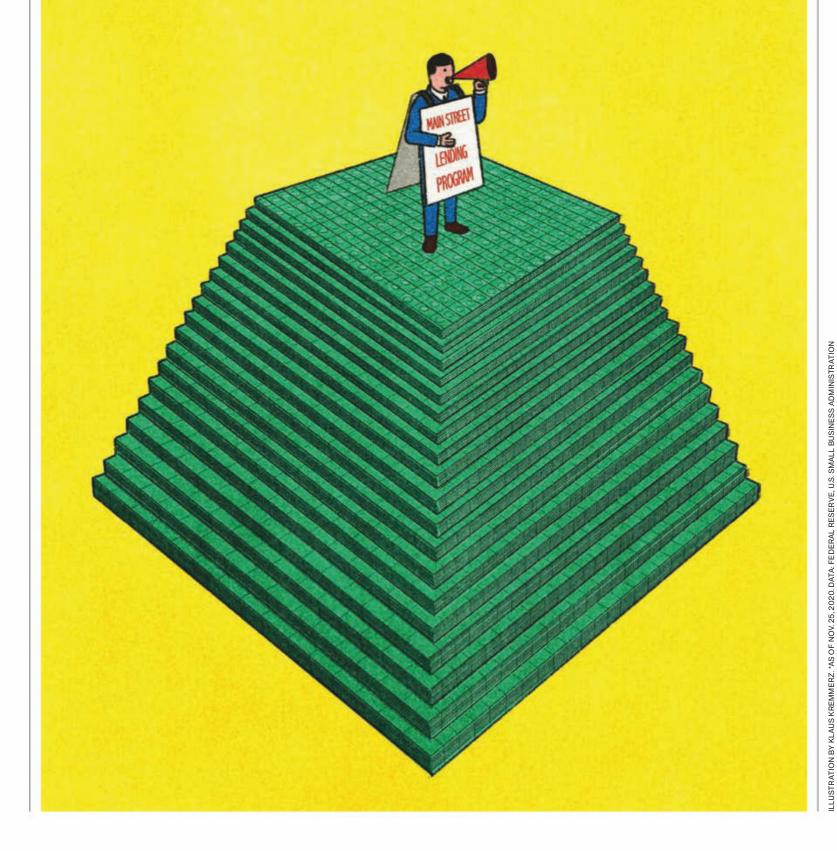
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ECONO M I C S

Loston Main Street

The Fed's program to save midsize businesses isn't working, and it isn't clear there's an easy fix



Edited by Cristina Lindblad

▼ Value of loans issued

Paycheck Protection

Program

\$525.0b

It sounded like a great idea back in April. With the economy getting hammered by Covid-19, the Federal Reserve hatched a bold plan to rescue thousands of midsize companies that were falling into a gap between government aid programs.

Using its magic printing press, the U.S. central bank would take \$75 billion appropriated by Congress and turn it into as much as \$600 billion in loans to companies damaged by the pandemic.

The effort now appears to have been doomed from the start, squeezed between legal restrictions on the Fed's emergency powers and the risk aversion of the banks that the program relied on to make loans. Eight months in, the Main Street Lending Program has pushed less than \$6 billion out the door.

"There's been bipartisan acknowledgment that Main Street isn't working," says Bharat Ramamurti, who sits on the congressional commission charged with supervising the spending authorized by the Coronavirus Aid, Relief, and Economic Security Act. "I don't think anybody is under the illusion this program is solving the problems that exist."

Treasury Secretary Steven Mnuchin announced on Nov. 19 that he wouldn't approve an extension of the program, along with four other emergency lending facilities, past Dec. 31, but Democrats might be able to revive it. Some, including Virginia Senator Mark Warner, clearly want to. "As we're looking at the virus actually accelerating at this point, and the potential for businesses even going into more duress, the idea that we'd end the program arbitrarily on Dec. 31–I just think makes no sense," Warner says. "We think we need to make adjustments on both program eligibility, loans terms, and weight, so this works for more firms."

It's difficult to see how a few tweaks would suddenly resolve the real issues that afflict the program. Those start with the limits on the Fed's emergency powers. The central bank can lend almost infinite amounts of money, but it can't give it away. That means the Fed must reasonably expect repayment on loans and must charge rates that won't end up undercutting private lenders.

The institution hasn't run into those issues in the other programs it unfurled this spring to prevent capital markets from seizing as they did during the 2008 financial crisis. The Fed used two facilities to buy ultrashort-term securities from money-market funds and from banks that act as market makers for all investors. It also lubricated longer-term credit markets by announcing it would buy corporate and municipal bonds.

The central bank's purchases amounted to tiny slivers of these vast markets, but its reassuring presence caused private investors to flood back in, knowing they wouldn't get trapped with illiquid holdings if panic returned.

While the Fed was tending to the needs of larger companies, the Treasury Department was teeing up a rescue for small businesses. Despite a messy launch, the Paycheck Protection Program ended up ladling out about \$525 billion in loans, most of which morphed into grants when borrowers used the funds to keep workers on their payroll and to pay bills.

Slipping between these safety nets was a whole layer of businesses—estimated to encompass 40% of the U.S. economy—that were too big for PPP and too small to access the bond market. So on April 9 the Fed unveiled a plan that looked like a win for everyone: Midsize companies would be thrown a lifeline, preserving jobs and helping to sustain the economy, and the Fed would show it cared about Main Street.

Vincent Reinhart, a former senior economist at the Fed, says the central bank took a lot of heat in the last financial crisis for going all-out to help big banks while appearing not to lift a finger for the average American. "It was Wall Street vs. Main Street, and going into this it was evident Jay Powell wasn't going to make that mistake again," says Reinhart, referring to the Fed chair. "I'm not saying it was insincere, but I am saying it was strategic, as well."

Despite the good intentions, the Main Street Lending Program's effectiveness has been hampered by crucial design flaws. Unlike with its other emergency programs, the Fed must rely on banks to process the loans, as it lacks the capability to do its own underwriting. To come up with a set of terms that would entice lenders—as well as borrowers—to participate, Fed staff consulted extensively with banks and companies. The upshot: Funds didn't begin trickling out until July, almost three months after the first of the PPP money.

Since then, the Fed has continued to fiddle with the Main Street rules, and it's lowered the minimum loan size, but the changes haven't worked: As of Nov. 25, the program had purchased just \$5.8 billion in loans from banks.

In a survey released in September, loan officers told the Fed that "overly restrictive" terms for borrowers and "unattractive" terms for lenders were preventing the program from taking off. When a company was deemed worthy of credit, banks preferred to make loans without the Fed's participation, the respondents said. And when

◀ it wasn't, the program's terms didn't do enough to make the loans palatable.

Under the terms of the program, the Fed buys 95% of each loan. That's meant to reduce the risk for banks, but it doesn't change the risk-to-reward calculus on each dollar lent. It merely turns a shaky \$10 million loan into a shaky \$500,000 loan. And if things go wrong, the \$75 billion provided by Congress protects only the Fed. It won't absorb losses suffered by the banks.

Some in Congress have urged the central bank to take on more risk. Indeed, the Fed could buy out 100% of every loan, leaving the banks to make their fees and move on. But it wants lenders to have a stake in the process to make sure their underwriting is reliable. Otherwise, the Fed might get saddled with too many bad loans, overwhelming its backstop.

Alternatively, the Fed could ramp up the fees it pays lenders, or tweak the risk-to-reward weighting. It could agree to take 95% of any losses while leaving more than 5% of the potential profit. But that might prove politically perilous if it's seen as being too generous to the banks.

"There is a wide range of possible things you can do. They all may have some effective costs to taxpayers down the road," said Eric Rosengren, president of the Federal Reserve Bank of Boston, in an Oct. 8 interview. "There are some serious trade-offs if people wanted to make it a more attractive facility." The Boston Fed is in charge of administering the program.

The incoming Biden administration might seek to revive the Main Street Lending Program, though Republicans in Congress would probably block an attempt to reauthorize the \$75 billion backstop. But Ramamurti, who was appointed to the oversight board by Senate Minority Leader Chuck Schumer, is convinced that a whole new approach is needed, especially with the pandemic raging and a widely available vaccine still many months away.

"For businesses in this category that are struggling right now, a loan is not going to be the right solution for most of them," he says. "We need to provide direct support."

Asked if Congress could have done more good by simply giving away \$75 billion to midsize companies in March, Warner agreed. "With the benefit of hindsight? A smaller amount, straight grant program? Yeah." —*Christopher Condon and Catarina Saraiva*

THE BOTTOM LINE The Fed's Main Street Lending Program doesn't provide sufficient incentives for banks, which have pushed out less than \$6 billion in loans so far.

Corralling the Vatican's Golden Calf

 Pope Francis' quest to bring transparency to church finances is running into stiff opposition from an entitled Curia

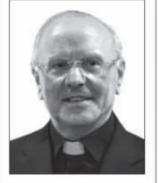
When Pope Francis' advisers report back on the battle to overhaul the Vatican's sprawling finances, they regularly bring poor tidings. As they huddle with the pontiff, the aides voice their frustration at the resistance of the Roman Curia, the bureaucracy that runs the Catholic Church and which Francis has called "the last court that remains in Europe," saying it's filled with careerists and gossips. The bureaucrats are pushing back against Francis' drive for transparency and accountability, refusing to give up the privileges that control of money grants them, according to officials who asked not to be named as these discussions are confidential.

The Roman Catholic leader hears them out, then urges them to forge ahead. "I don't understand any of this stuff. Talk to each other, and don't lose your sense of humor," he says. "But we have to keep going. I won't stop."

Cleaning up Vatican finances has been a priority for the 83-year-old Argentine pontiff from the start, say his advisers. Just months after his inauguration in March 2013, Francis set up a task force to scrutinize the Institute for Religious Works. The entity, frequently referred to as the Vatican bank, is so opaque it's been called "the most secret bank in the world." The following year, Francis created a Secretariat for the Economy, vesting it with authority over all economic activity for the Holy See and Vatican City.

The pope has recruited executives from the worlds of business and finance to fill top jobs in the Curia as part of a drive to bring the Vatican's accounting and budgeting procedures up to international standards. Momentum on reforms has accelerated this year, with several papal edicts, including one establishing a new code for public tenders to ward against corruption and conflicts of interest.

Francis, who once called money "the devil's dung" and whose latest papal encyclical contains a fiery criticism of neoliberalism as a system that resorts to "magic theories of 'spillover' or 'trickle'" to solve societal problems, wants the Vatican to lead by example. "We have to walk the talk," says Father Augusto Zampini, a papal compatriot who is adjunct secretary at the Vatican's human



Nunzio Galantino



Juan Antonio Guerrero Alves

with delegates from

Moneyval in October

development department. Zampini worked at Argentina's central bank and the law firm Baker & McKenzie before becoming a priest and now represents the Vatican at forums such as Davos. "The Vatican's financial assets are small, but they have great symbolic power," he says.

That power has frequently been dimmed by scandal. The latest involves a questionable 2014 investment by the Vatican's Secretariat of State-equivalent to the prime minister's office-in a former Harrods warehouse in London's affluent Chelsea neighborhood that was slated to become luxury apartments. Francis has dismissed five Vatican employees over the deal, which went south, and an investigation has been launched to determine whether the bureaucrats were scammed or if they themselves profited. "A thief can enter my home because he was 'skilled' in deactivating the alarm system, or because someone gave him the key or opened the door for him from the inside," said Archbishop Nunzio Galantino, who heads the Administration of the Patrimony of the Holy See, in an interview with the Catholic newspaper Avvenire. He estimated the Vatican's losses in the deal at £66 million (\$88 million) to £150 million.

To diminish the scope for bad behavior, the pontiff has been pressing the church's moneymen to open their accounts to public scrutiny. A few have complied. Pledging that "the faithful have the right to know how we use resources," Father Juan Antonio Guerrero Alves, the Vatican's economy minister, published the Curia's consolidated budget for 2019 on Oct. 1-the first since 2016. The report showed a shortfall of €11 million (\$13 million), compared with one of €75 million the prior year. Yet the task of assessing the health of the church's finances isn't helped by their being split into four separate budgets-the Curia, the Vatican city-state, Catholic foundations, and hospitals and charitiesor by the fact that surpluses in one area are used to plug deficits in others.

"Some people—inside and outside the church—used to be skeptical about the pope's reforms, but now they realize that he is serious about them," says Sister Alessandra Smerilli, a professor at Rome's Pontifical Auxilium faculty who briefs the pope on global economic issues. "Francis wants a system that ensures no one is alone to take decisions, because that can lead to mistakes."

To that end, the pope ordered the Secretariat of State be stripped of its funds in the wake of the London scandal. Under his instructions, spelled out in a letter to Secretary of State Cardinal Pietro Parolin dated Aug. 25, the assets—which are worth €350 million, according to a senior official—will be managed by Galantino's department.



Then, in September, Francis forced the resignation of Cardinal Giovanni Angelo Becciu, a close aide and former No. 2 at the Secretariat of State, over allegations he had channeled some €100,000 in Holy See funds to his brother's charity. Becciu denied any wrongdoing, telling reporters he

had the power to use its funds to support charities.

That remark exasperated Francis, whose attempts at reform have been obstructed by senior or middle-ranking members of the administration who have become accustomed to operating in their own fiefs and have felt untouchable, say the pontiff's advisers. On the evening of Nov. 4, Francis hosted a meeting with department heads including Parolin, Galantino, and Guerrero at which he convened a task force "to start work immediately" to execute the orders he had set out in his August letter within "the next three months," according to a Vatican statement.

If the pope is willing to publicize his battles to get recalcitrant administrators to toe the line, it's because he believes the world's 1.3 billion Catholics, whose donations are the church's lifeblood, want to be reassured that their hard-earned money is not being pilfered or wasted. "That's a risk because publicity about scandals may create disaffection, but he doesn't want to hide anything," says Smerilli.

If, as the saying goes, sunshine is really the best disinfectant, the latest controversies may be evidence that Francis' reforms are starting to bear fruit. Or perhaps it's the opposite. Moneyval, the European Union's anti-money-laundering body, has been scrutinizing money matters in the city-state and is expected to issue a report sometime in the spring that should provide an independent reality check.

Meanwhile, in his meetings with his inner circle, Francis continues to rally the troops. "Have patience," he tells his entourage. "Step by step. To change things, you need to bring people in." — John Follain, with Alessandro Speciale

THE BOTTOM LINE Pope Francis is on a mission to overhaul Vatican finances, but scandals that have erupted under his watch raise doubts about how much progress has been made.



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Marijuana isn't technically on the ballot in Georgia's Jan. 5 Senate runoff elections. But it might as well be: Cannabis advocates and trade groups are zeroing in on the state in hopes of ousting—or converting to their cause—its two Republican senators, Kelly Loeffler and David Perdue, who'll face Democratic opponents Raphael Warnock and Jon Ossoff, respectively. How the races go will determine which party controls the U.S. Senate, and that could be pivotal for the future of the \$17 billion U.S. cannabis industry.

Sam D'Arcangelo, the project manager for the Cannabis Voter Project, has immersed himself in voter registration data in Georgia and says he hopes his group's corporate partners will convey to customers and suppliers how critical the contests there are. The national Drug Policy Alliance is looking to support Warnock and Ossoff with donations from its political action committee.

Just a month ago the industry got a boost when five states passed ballot measures approving cannabis use. Arizona and New Jersey joined deep-red Montana and South Dakota in allowing the sale of recreational pot; Mississippi approved it for medical use. Altogether, 15 states—making up more than one-third of the U.S. population—now have legal recreational weed, and 35 allow it for medical purposes.

At the federal level, it's a different story. In the Senate, Majority Leader Mitch McConnell of Kentucky and other Republicans don't favor legalization. As long as the chamber remains in their grip, they can block measures the Democratic-led House of Representatives has approved to ease restrictions on pot. But if Georgia elects two Democrats, that would flip Senate control, making possible the end (or at least a significant de-escalation) of the almost 50-year war on cannabis. The industry says it's about time, with 68% of Americans registering support in opinion polls for making it legal nationally.

The federal prohibition on weed is handicapping the young industry, which research group Euromonitor International estimates will reach \$53 billion in sales by 2025. Growers and sellers can't legally ship products or raw materials across state lines. Companies are mostly shut off from the capital markets. Banks risk prosecution and the loss of charters if they accept cash, process credit card payments, clear checks, make loans, or underwrite stocks and bonds for marijuana businesses.

The House was set to approve a measure in early December that would remove pot from the 1970 Controlled Substances Act. Doing so would end criminal prosecutions for possession, permit banks to do business with the industry, and establish a 5% federal excise tax on sales. The bill's sponsor on the

Senate side is Vice President-elect Kamala Harris.

But it will go nowhere if the Republicans win the Senate seats in Georgia and McConnell remains majority leader. Even if the Democrats prevail, the bill—known as the Marijuana Opportunity Reinvestment and Expungement (MORE) Act—would still face a 60-vote hurdle to passage. But Democratic control of the Senate would mean it could come to the floor, and serious negotiations on decriminalization and regulation could begin.

The MORE Act is not the only pot reform with prospects. Senator Pat Toomey, a Pennsylvania Republican, is set to take over the banking committee and has said he's receptive to a measure called the Secure and Fair Enforcement (SAFE) Banking Act, which would allow banks to serve the industry even if marijuana remains illegal federally.

The American Bankers Association "has made this a priority," says Melissa Kuipers Blake, who co-chairs the cannabis practice at Brownstein Hyatt Farber Schreck and who lobbies for the Cannabis Trade Federation. An ABA spokesperson says the group is "optimistic that this Congress or the next will give this commonsense measure final approval."

"We're going to get SAFE Banking," Boris Jordan, executive chairman of cannabis giant Curaleaf, told investors in a recent call, adding that it was the first time he's been this optimistic.

However, Jodi Avergun, a former Drug Enforcement Administration chief of staff and federal prosecutor who now leads Cadwalader, Wickersham & Taft's white-collar defense and investigations group, is less sanguine. A lot of conservative senators "don't want to deal with a cannabis issue at all," she says. "It would have to be significantly narrowed to get passed."

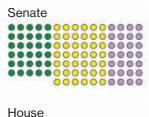
The House in May and October added the banking measure to coronavirus relief packages, but they languished in the Senate. Other liberalization measures have been offered in both chambers. "Any of these passing becomes the Berlin Wall moment, where everything starts to tumble," says Erik Huey, president of Platinum Advisors, a lobbying firm that counts Canopy Growth Corp., a Canadian industry heavyweight, as a client.

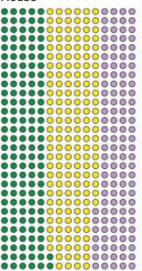
The incoming Biden administration could use its executive authority to help the industry. The president-elect, who had a long career as a tough-on-crime legislator, has embraced moderate steps, including expunging federal records of those convicted of marijuana offenses and removing pot from Schedule I—the category used for the most dangerous substances. But he hasn't indicated how or how fast he'd move. "We just don't know which way Biden will go," says Curaleaf's Jordan.



Kuipers Blake

- ▼ Members of Congress by the legal status of cannabis in their state
- Recreational use
- Medical use only
- Illicit





John Hudak, a senior fellow at the Brookings Institution, says Biden is likely to make good on his campaign's commitment to criminal justice reform. This could include moving Justice Department priorities away from enforcing federal laws that conflict with state marijuana laws, which would be a return to the Obama administration's position.

"I don't think we're going to see Joe Biden six months from now come out for full national legalization, but I do think you're going to see him thinking more critically and more carefully" about the intersection of race and law enforcement, Hudak says.

The Black Lives Matter movement has promoted the idea of decriminalizing cannabis as a way to reduce the number of incarcerated Black

Americans. Black people face arrest for possession at almost four times the rate as White people, despite similar levels of use.

Amber Littlejohn, executive director of the Minority Cannabis Business Association, says civil rights groups already are urging Biden to address the inequitable legacy of the war on drugs. "We are hoping that an administration that owes its existence at this point to many of the communities" that were hurt the most by federal marijuana policies will listen to their concerns, she says. —*Tiffany Kary and Ben Brody*

THE BOTTOM LINE The Biden administration will have several options to liberalize federal pot policy, which would boost an industry that has one hand tied behind its back.

Chicago's Hard Choices

Mayor Lori Lightfoot pushed through an austerity budget, alienating some progressives

After more than two weeks of sometimes contentious hearings, on Nov. 24 the Chicago City Council narrowly passed a 2021 "pandemic budget" to close a \$1.2 billion deficit. It's a victory for first-term Mayor Lori Lightfoot. But the turbulent process revealed the difficulty of reconciling a liberal policy agenda with the economic fallout of Covid-19, even in a deep-blue city. And it's mostly a short-term fix for the long-standing fiscal problems of Chicago, America's third-largest city.

"This was a really hard year," says Lightfoot, a Democrat. "Unlike anything in our city's history." About 65% of the budget gap resulted from losses connected to the coronavirus, as business in the tourism, convention, hotel, restaurant, and other sectors plummeted.

Lightfoot, the city's first Black female mayor and first openly gay mayor, ran as an outsider in 2019, promising a commitment to social justice and equity as well as vowing to reform Chicago's notorious political machine. Her \$12.8 billion budget includes a \$94 million property tax hike, a 3¢-per-gallon increase to the gas tax, a \$30 million draw from reserves, and more funds raised from speed cameras, parking meters, and other fines and fees. The city is also refinancing and restructuring \$1.7 billion in debt for a half-billion dollars in savings, a tactic referred to as "scoop and toss"

that's generally frowned upon by fiscal watchdogs.

Lightfoot secured the votes she needed for her budget by nixing her original plan to lay off 350 city workers and, instead of cutting the funding of the Chicago Police Department as some aldermen demanded, added funds for violence prevention and a pilot program that pairs police and mentalhealth workers on responding to 911 calls.



◀ Lightfoot

Critics on the council say the budget relies on regressive taxes and fees that hurt the disadvantaged. Alderman Carlos Ramirez-Rosa, a self-described democratic socialist, voted against it. "I've heard from so many people in my community that are just so angry that at a moment when families have less, they are being asked to pay more," Ramirez-Rosa says. In a recent survey

■ in his ward, 55% of respondents said they'd lost income during the pandemic, and close to a third said they struggled to pay their rent or mortgage. "Don't give me crumbs and tell me it's cake," Alderman Jeanette Taylor, a progressive, said on the day of the vote, adding that food and medicine are at stake for families in her ward. "Why can't we tax the rich?"

The enormity of the pandemic's impact means "our options are extremely limited," says Alderman Scott Waguespack, a Lightfoot ally who's chairman of the city council's finance committee. "It's the best we could do right now."

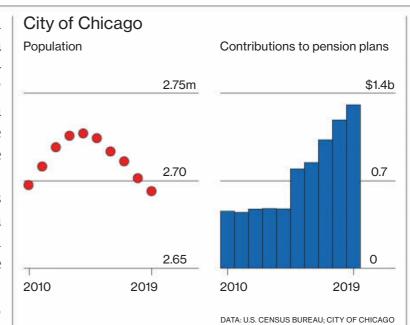
Covid-19 has exacerbated racial, economic, and health gaps that had long been widening in Chicago. As of Dec. 2, the city counted more than 161,000 Covid-19 cases and almost 3,500 deaths, a disproportionate number of them in Black and Latino communities. As the virus snaked through neighborhoods this summer, unrest added to the financial and emotional toll. Small corner shops along with high-end stores on the iconic Magnificent Mile were looted. The city's costs for services—including aid to the homeless, police overtime, and small-business assistance—have risen.

Lightfoot says constructing the budget required putting the good of the whole city ahead of individual wards: "For the foreseeable future, we are in a period of reckoning with our past." Leaders in Chicago not making tough choices and acting for short-term gain has been "long-term fiscally a disaster for our city," Lightfoot says.

Moody's Investors Service downgraded the city's debt to junk in 2015 partly because of its strained pension system, which is underfunded by \$31 billion. The city's total retirement obligations for fiscal 2021 are projected to rise. (Meanwhile, its population has fallen for several years in a row, so it has fewer residents to foot its bills.) S&P, which rates Chicago three levels above junk at BBB+, lowered its outlook to negative in April because of Covid-19.

"Voters elected me because I represented change," Lightfoot says. "I don't think voters elected me to just kick the can down the road." The large debt refinancing has drawn criticism as an example of just that, however, from the watchdog Civic Federation, which said it will increase debt costs in future years. City of Chicago Chief Financial Officer Jennie Huang Bennett says that the step is appropriate given the city's challenges and that additional federal stimulus may erase the necessity for scoop and toss.

The mayor needed a simple majority of the council's 50 aldermen to pass budget measures. Her budget ordinance got 29 yeas and 21 nays,



while the property tax hike won 28 to 22. It was the tightest budget vote in Chicago since the mid-1980s, when a bloc of old-guard aldermen faced off against Mayor Harold Washington, says Dick Simpson, a political science professor at the University of Illinois at Chicago and a former city alderman. The recession caused by the pandemic left Lightfoot with "no magic way to solve the entire gap," Simpson says. A poll conducted in late September and early October, before the budget hearings, put Lightfoot's approval among registered voters in Chicago at 61%. If she can continue to work with the council and deliver on some progressive goals, Simpson says, lingering hard feelings from the budget process won't necessarily dent her political appeal. —Shruti Singh

THE BOTTOM LINE Chicago will raise taxes and fees and restructure its debt to close its huge deficit, a win for the mayor that's earned her criticism from various quarters.

Scotland Makes Periods Less Painful

 The country is the first in the world to offer free, universal access to sanitary products

On Nov. 24, Scotland became the first country in the world to establish through legislation that access to period products is a right, a move that First Minister Nicola Sturgeon described as groundbreaking. It caps a four-year campaign led by Monica Lennon, a member of the Scottish Parliament, that was backed by a wide coalition of trade unions, women's groups, and charities.

The aim, Lennon says, is to eradicate "period poverty"—the cost of the products can be prohibitive—and end the stigma around menstruation.

Under the Period Products (Free Provision) (Scotland) Act, approved unanimously in the Scottish Parliament, local governments will be required to make free supplies available in public buildings to anyone who wants them. (Schools, colleges, and universities in Scotland have offered free products since 2018, and the legislation compels them to keep doing so.) The Scottish

2020 tax rate on sanitary products was 27% in Hungary, 25% in Sweden, and 16% in Mexico. In the U.S., 30 states levy a sales tax on tampons and pads, according to the advocacy group Period Equity, and they can't be purchased with food stamps.

A handful of countries have scrapped the tax. The first was Kenya in 2004, and others that followed include Australia, Canada, Ireland, and, beginning in January, the U.K., where "the tampon tax" became so controversial that major supermarkets started covering the cost of it themselves in 2017.



▲ Activists rallying outside the Scottish Parliament in Edinburgh

government estimates that about 13% of people who have periods will take part in the program in its first year. That would put costs, which it will cover, at about £8.7 million (\$11.7 million) for 2022-23. Full implementation of the program will take two years.

Limited access to sanitary products is a problem often associated with poorer countries, but women in wealthier nations also struggle to buy them. A survey of more than 1,000 women in Scotland, which helped galvanize support for the bill, found that a fifth had experienced period poverty at some point in their lives. One in 10 said they had prioritized buying food over period supplies.

Globally, menstrual products are also often taxed at higher rates than other essentials. The The women surveyed in the Scottish report said they felt isolated and ashamed by their inability to afford sanitary products, and some said they missed work, school, or social events as a result. The country's new legislation comes after 20 years of efforts by activists across the globe to chip away at the taboo that's surrounded menstruation for centuries.

"Scotland has provided a blueprint and shown how it can be done," Lennon says. "With determination from lawmakers and activists in other countries, there's no reason why other countries can't follow." —*Caroline Alexander*

THE BOTTOM LINE A new law requires public facilities to provide free tampons and pads in an aim to reduce "period poverty" among low-income women and to destignatize menstruation.



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The Bloomberg

There was a joke on Twitter this fall: Decades from now, Ph.D. candidates in history will specialize in a particular day from 2020. Which is to say this year was, uh, big. Covid, a reckoning on race, and a U.S. election made compiling the fourth annual Bloomberg 50 easier in ways (many people are doing notable things) and harder in others (many people are doing notable things).

Here are a few rising above 2020's high bar in our look at the people in business, entertainment, finance, politics, and science and technology whose accomplishments merit recognition: Aurora James (page 44) got retailers to pledge 15% of their shelf space to Black-owned brands in the wake of George Floyd's death, and Tim Bray (page 63) quit his executive job at Amazon.com to protest the firing of workers who'd raised concerns about Covid. The president of Taiwan (page 74) kept the pandemic under control, and when Australian wildfires raged, comedian Celeste Barber (page 50) raised millions in relief.

Check out page 75 for alums of our list whose 2020 efforts also deserved a nod. To see who might appear on next year's Bloomberg 50, turn to page 76—though we'd be lying if we said we could predict the next few days, let alone 2021.

CELESTE BARBER	COLIN KAEPERNICK
BAIJU BHATT & VLADIMIR TENEV	LINDA KIRKPATRICK
MOHAMMED BIN ZAYED AL NAHYAN	AYA KYOGOKU & HISAHI NOGAMI
THE BLACK LIVES MATTER	LUIS LACALLE POU
CO-FOUNDERS	DONNA LANGLEY
BONG JOON-HO	FORREST LI
TIM BRAY	STRIVE MASIYIWA
MADISON CAWTHORN	RENEE MONTGOMERY
SARAH COOPER	MARCUS RASHFORD
THE COVID TRACKING PROJECT	BYJU RAVEENDRAN
BILLIE EILISH	MARIA RESSA
ODUNAYO EWENIYI & DAMILOLA ODUFUWA	KELLER RINAUDO
	JOHN ROBERTS
ANTHONY FAUCI	GWYNNE SHOTWELL
GUY FIERI	SUMIT SINGH
JOHN FOLEY	SPECIAL PURPOSE ACQUISITION COMPANIES
JANE FRASER	
THE FRONT-LINE WORKERS	SWIZZ BEATZ & TIMBALAND
KRISTALINA GEORGIEVA	TSALING-WEN
JAMES GORMAN	
ABDALLA HAMDOK	SVIATLANA TSIKHANOUSKAYA
REED HASTINGS	THE VACCINE CHASERS
JASON HEHIR	VIYA
ALAN HOWARD	WANG XING
AURORA JAMES	DARRIN WILLIAMS
LETITIA JAMES	ZENG YUQUN
JEONG EUN KYEONG	CHANGPENG ZHAO



DANIA BEACH, FLA. • As the retailer came to dominate the online pet supply business, its stock price more than doubled, driving up its market value by almost \$15 billion, to \$26 billion.

Singh has a Shih Tzu named D

Chewy, which sells everything from dog toys to equine joint supplements, added millions of customers in the wake of lockdowns and a spike in pet adoptions. At times, surging orders stripped its virtual shelves bare of popular dog and cat foods. Now that inventories are under control, Singh and his team are touting a recession-resistant business model:

They continue to see gains from consumers who like Chewy's pets-only focus and easy returns policy.

Singh, who joined Chewy from Amazon.com Inc. in 2017, has been CEO since 2018 and led the company to a successful initial public offering last year. Prior to joining Amazon, he spent a decade at Dell Technologies Inc. His next test at Chewy will be retaining customers and winning over new ones who shop at supermarkets, warehouse clubs, and neighborhood pet stores. Wall Street is also waiting for the company to expand internationally. —Bailey Lipschultz

SUMIT SINGH

CEO, CHEWY INC.

● Eilish won the "big four"
Grammys in January—best record,
best song, best album, best new
artist—which nobody had done in
a single year since Christopher
Cross in 1981.

She sings in a smoky soprano about suicide fantasies and heartache ("Take me to the rooftop / I wanna see the world when I stop breathing, turnin' blue," she begins on *Listen Before I Go*). And with green-streaked hair and oversize outfits, she looks straight out of a Nickelodeon cartoon. Yet for all her

BILLIE EILISH

SINGER-SONGWRITER

deliberate outrageousness, Eilish is a fairly normal 18-year-old. She lives with her parents, who dutifully ride along with their daughter on tours. Her older brother, Finneas, is her musical collaborator, and they work out of a recording studio in the family's Los Angeles home.

Eilish has been embraced by an industry that's often celebrated young female stars for their conformity, not their rebelliousness. Her Grammy-winning song, *Bad Guy*, is a pulsating track on which she razzes people who act tough, and in August, she performed a new track called *My Future* at the Democratic National Convention: "You don't need me to tell you things are a mess," she said by way of introduction. Eilish also co-wrote and sang the theme for the James Bond film that's scheduled to be released next year.

—Devin Leonard

JANE FRASER

PRESIDENT AND CEO, GLOBAL CONSUMER BANKING, CITIGROUP INC.



NEW YORK ● In September, Fraser was named Citigroup's next CEO, and when she assumes the role in early 2021, she'll be the first woman in the top job at a major U.S. bank.

A 16-year veteran of Citigroup, Fraser has done stints as global head of strategy and head of Latin American operations. Last year she took over the consumer unit, the world's largest credit card issuer. One thing she's been focused on in 2020 is increasing deposits from U.S. customers, with an emphasis on getting people to sign up for

checking accounts on their mobile phones; in the third quarter, average North American deposits climbed 19% from a year ago, to more than \$182 billion. Fraser has also been in charge of Citigroup's domestic response to the coronavirus pandemic.

One of her most immediate tasks as CEO will be fixing the bank's data and risk management systems, which it's failed to update for some time. Regulators including the Federal Reserve and the U.S. Department of the Treasury's Office of the Comptroller of the Currency are requiring the improvements. Fraser has started by analyzing what part of Citigroup's technological infrastructure needs the most attention. The process is expected to take years.

— Jenny Surane



JOHN ROBERTS

U.S. CHIEF JUSTICE, SUPREME COURT

● He was in the majority 97% of the time in the term ended in July, his highest percentage in 15 years.

For the first time, Roberts stood firmly at the court's ideological center, casting the pivotal vote in almost every divisive case. He sided with the conservative wing to bolster religious rights in cases involving taxpayer subsidies for private schools and contraceptive insurance coverage. But the appointee of President George W. Bush joined the liberals to deliver narrow victories for abortion rights and the Deferred Action for Childhood Arrivals program. He did the same in a big win for LGBTQ workers fighting to sue for job discrimination. And when right-leaning critics of the Consumer Financial Protection Bureau sought to topple the regulator by arguing that its director had an unconstitutional level of independence, Roberts wrote an opinion allowing a president to fire the director while leaving the agency intact.

Things are about to change. Associate Justice Amy Coney Barrett's arrival shifts the court further to the right and decreases the chance that Roberts's vote will decide rulings. Whether his influence endures depends less on his vote than on his ability to persuade what could be the most conservative court in generations. —*Greg Stohr*

AURORA

Photograph by Lelanie Foster

 Nine retailers in the U.S. and Canada, including Macy's Inc., Sephora USA Inc., and West Elm, have

signed on to her pledge, which asks that they dedicate 15% of shelf space to products made by Black-owned businesses.

After the police killing of George Floyd in late May, James watched her inbox fill with emails and her Instagram feed flood with posts from brands decrying racism. She wanted more

than platitudes. "I needed to reconcile the hurt I was feeling as a Black woman and also the fact that I'm a business owner," says James, creative director and founder of shoe and handbag line Brother Vellies in Brooklyn, N.Y. "These two sides of me needed to converge."

Days later she'd made it happen. She used Instagram to spread the idea of the pledge—15% because it's roughly the share of Black people among the U.S. population—and tagged nine companies in her post to get their attention. Her targets were Barnes & Noble, Home Depot, marijuana dispensary MedMen, Net-a-Porter, Saks Fifth Avenue, Sephora, Target, Walmart, and Whole Foods, businesses she said were "built on Black spending power."

For most companies, only 2% of merchandise on store shelves is from Black-owned businesses, according to research from the Fifteen Percent Pledge Foundation, the nonprofit James founded shortly after announcing her campaign. Many of them have had a disproportionately difficult time during the coronavirus pandemic, because such businesses didn't get loans from the Paycheck Protection Program—a \$350 billion government effort to keep workers on payrolls—at the same rate as White-owned ones. Goldman Sachs Group Inc. says 58% of Black business owners have dipped into personal savings to stay operational, compared with 33% of business owners overall.

James was raised in Jamaica and Guelph, an hour's drive from Toronto, and worked in mall retail, at a modeling agency, and for Fashion Television. She studied journalism at Ryerson University, then moved to the U.S. right before Barack Obama's first term began. Since 2013, James has run Brother Vellies, which she started with \$3,500 in savings. She opened her store in Brooklyn's Greenpoint

JAMES

FOUNDER, FIFTEEN PERCENT PLEDGE

neighborhood in 2018.

The retailers that joined her pledge aren't tied to a timeline. But James works with them to find smaller, Black-owned companies that fit their needs. None has hit the 15% threshold, but

Black entrepreneurs have told her that Sephora and West Elm touched base directly about orders, she says.

Sephora and MedMen are the only original targets that signed on. In addition to West Elm, the others are Indigo Books & Music in Toronto, Rent the Runway, Yelp, the U.S. edition of Condé Nast's *Vogue*—and as of late November, *InStyle US* and Macy's, the largest retailer to sign on. Yelp will try to have 15% of its lists focus on or include Black-owned businesses. On Instagram, James said of *Vogue*'s pledge, "Thank you to *Vogue* for committing to hiring more Black freelance photographers, writers, stylists, beauty teams, and models." She says one day she'd like to see a Black-owned business that benefited from the pledge reach a \$100 million valuation.

Analysts say it could appeal to shoppers who say they're more likely to spend with companies that share their values on racial justice. "That potentially could be the catalyst to help that retailer recover faster" from pandemic losses, says Chadwick Roberson, vice president for investment management and research at retail and consumer analyst Momentum Advisors LLC.

James's idea isn't without critics. Some of the companies that have signed on aren't brick-and-mortar retailers with shelf space to give. And some have noted that Black-owned small businesses need financial resources to scale up before they can fulfill orders for major retailers. James says the foundation is working with its partners on a solution.

In the future, James wants venture capital firms to agree to have pledge-compliant portfolios. But for now she'll continue to run her business while hopping on Zoom calls with CEOs who are interested in joining her cause. "In a year that's been so tough for so many people, having that opportunity to have positivity is so worth it," she says. — *Jordyn Holman*





JAMES GORMAN

CHIEF EXECUTIVE OFFICER, MORGAN STANLEY

NEW YORK ● Morgan Stanley unveiled a \$13 billion takeover of retail brokerage ETrade Financial Corp. in February, then sprang another surprise in October with the \$7 billion purchase of the fund company Eaton Vance Corp.

Inside Morgan Stanley's Times Square skyscraper, Gorman is mostly alone. The faces he sees are those of stern-looking bankers in oil paintings lined along the wood-paneled wall outside his office. They're reminders of the people who came before him at a company that traces its roots to the Gilded Age tycoon John Pierpont Morgan.

After a decade atop the place, Gorman has made his own big mark, with two of the largest deals by a top Wall Street bank in years. They came along with record profits and a soaring stock price. "How could you not be happy?" Gorman asks. "We just hit a \$100 billion market cap, we've done two signature transactions in two areas of the business where we needed to do something, and we've navigated Covid without the organization falling apart."

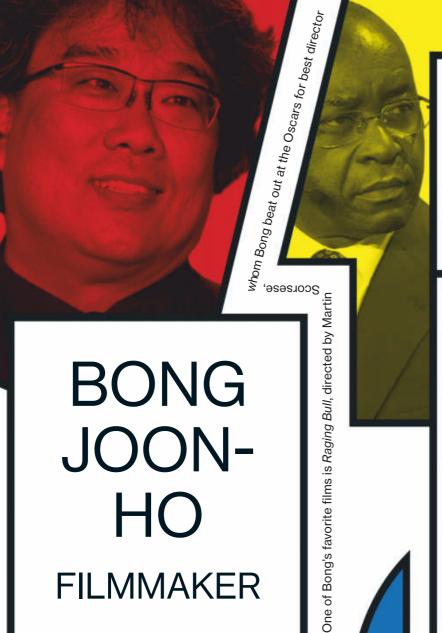
Ever since the recovery from the 2008 financial meltdown, major banks have been looking for opportunities to expand. But the Melbourne-born Gorman was more willing than his peers to pounce on acquisitions. "I think we've been the only bank in the last 10 years to do deals," he says. "I don't see myself as a dealmaker or not a dealmaker. I think of myself as hopefully strategic and that if you find good deals, you shouldn't be shy about it."

Gorman has long believed Morgan Stanley needed to pivot from its reliance on the rarefied business of high finance, which involves things like playing matchmaker for blue-chip corporations and helping hedge funds trade. These activities are profitable but subject to the whims of markets. The ETrade and Eaton Vance deals give Morgan Stanley more ways to earn steady fee revenue helping to manage individuals' nest eggs. Its money management businesses now make up about 60% of revenue. It will soon be the steward of \$4.5 trillion worth of other people's investment assets.

"Finance has become less swashbuckling, less sexy, and a little more boring," says Tom Glocer, a Morgan Stanley board member and former CEO of Thomson Reuters Corp. "People like James stand out in a time like this. He will be known as one of the great CEOs, not just in bank-

ing but one of the great CEOs, period."

Gorman's landmark year also brought a less welcome distinction: He was the only senior executive at a top Wall Street bank to disclose that he'd gotten Covid-19. He self-isolated and has recovered. Currently less than 20% of the staff in Morgan Stanley's New York headquarters is back in the office. "We did a lot of Zoom calls," Gorman says, reflecting on the challenges of lockdown. "I did them from my home—people seeing you in casual clothes, sitting in your home office—and I think it gives them comfort to know that you're not freaking out." —Sridhar Natarajan



BONG JOON-HO **FILMMAKER**

 At the Oscars in February, his movie Parasite, a dark comedy exploring class differences in Seoul, became the first non-English film to win best picture, and Bong became the first South Korean to win best director.

Parasite smashed commercial expectations, taking in almost \$260 million in global ticket sales against an \$11 million budget, and Bong used the movie's success to remind myopic American audiences that other countries produce great cinema, too. In October 2019, he told New York magazine that the Oscars were "not a big deal" and "very local," and in his acceptance speech for best foreignlanguage film at the Golden Globes on Jan. 5, he said, "Once you overcome the 1-inch-tall barrier of subtitles, you will be introduced to so many more amazing films." Bong's 2003 crime movie, Memories of Murder, was rereleased in the U.S. and U.K. this fall, and he's adapting the 2014 film Sea Fog, which he co-wrote and produced, into a new movie project. --- Kelly Gilblom

STRIVE MASIYIWA

CHAIRMAN AND FOUNDER, **ECONET WIRELESS** INTERNATIONAL LTD.

JOHANNESBURG • His foundation paid \$10 million in cash and other assistance to more than 1,700 health-care workers in Zimbabwe to urge them not to strike over eroding wages.

Runaway inflation in Zimbabwe has rendered its currency almost worthless. With \$8 billion in unpaid debt, the country can barely afford services for its citizens, and the deterioration is epitomized by the woeful state of the health-care system. Medicine shortages and recurring strikes over pay and working conditions were common even before the coronavirus pandemic. Masiyiwa, a billionaire who's originally from outside of Zimbabwe's capital, Harare, paid monthly stipends from ZW\$5,000 to ZW\$10,000 (\$62 to

\$124) to health-care workers to stay on the job. When Covid-19 hit, he offered an additional ZW\$500 a day for anyone hospitalized by the virus and \$ZW50,000 for permanent disability or death. His program ran through July, and since its expiration some workers have gone back on strike.

Masiyiwa, whose telecommunications company operates in Africa, Asia, Europe, and South America, has had his run-ins with Zimbabwe's government, which he sees as pursuing policies detrimental to his wireless business. More than 90% of the country's commerce is conducted via mobile-money transactions because of cash shortages. The government accuses Econet, which dominates the industry, of fueling black-market currency trading and money laundering, accusations the company denies. Masiyiwa sees his donations as giving back to his home country, even though he lives in self-imposed exile, mostly in Johannesburg and London. -Godfrey Marawanyika

KRISTALINA **GEORGIEVA**

MANAGING DIRECTOR, INTERNATIONAL MONETARY FUND

 Since the coronavirus pandemic began, the IMF has increased lending to member nations by 50%, to \$270 billion.

Georgieva, a Bulgarian economist with a doctorate from the country's Karl Marx Higher Institute of Economics (now the University of National

and World Economy), is the first IMF chief from an emerging market. Through grants, the fund has helped 29 of the poorest member nations cover their IMF loan payments, and Georgieva is raising money from rich nations for more relief. In March she scored a victory when the U.S. Congress agreed to an expansion of the IMF's lending capacity (though in April, Secretary of the Treasury Steven Mnuchin blocked her plan to bolster members' access to currency reserves).

This year, Georgieva has hired two female department heads to replace men, raising the women's share to 40%eight of 20. The IMF has also started a YouTube channel with videos on topics such as how to compile macroeconomic statistics, improve central bank law, and use fintech to contribute to financial inclusion. —Peter Coy



Bloomberg Businessweek December 7, 2020



 More than 20 million people have watched Verzuz performances on Instagram Live since they started in March.

Music producer Timbaland was at home drinking wine when he decided to entice (perhaps taunt) his producer friend Swizz Beatz. He posted three videos of himself making music—or playing it while talking about how great it made him feel—to his Instagram feed and tagged his buddy.

Before the coronavirus pandemic, the two had discussed going on tour, playing hits from their catalogs and bringing on collaborators at each stop. Now that Covid-19 had stranded them at home, Timbaland wanted to revive the idea as a virtual concert: "I said, 'I think we should just do it now.'"

An hour later, the two were live on Instagram, taking turns playing clips of songs they'd produced for bigname artists such as Jay-Z, Beyoncé, and Missy Elliott. At the peak of their performance, about 20,000 people watched Timbaland prance around his studio while Swizz played tunes on his car stereo. "No promo, no nothing. We just popped up on Live and went for about five hours," Swizz says.

Within days, the stream had morphed into something they called Verzuz-part performance, part competition, part history lesson, with each one- to three-hour-long episode featuring two legends playing their hits and telling stories. (There's no official winner, but Instagram Live lets viewers comment in real time.) At first, Swizz and Timbaland recruited fellow producers before expanding to recording artists such as neosoul singer-songwriters Erykah Badu and Jill Scott. There have been hiccups: R&B producers Teddy Riley and Babyface had some technical issues, so the stream was cut short and delayed a day. "The numbers tripled" when people tuned in for the second try, Swizz says. "People seeing us fight and keep it moving and not fold under pressure—that was a very important Verzuz for us."

The audience grew this summer when the duo signed up pairs including rappers Snoop Dogg and DMX and soul singers Gladys Knight and Patti LaBelle. An Aug. 31 stream featuring Brandy and Monica, rival R&B singers in the late 1990s, peaked at 1.2 million viewers—a number on par with what some of the most-watched U.S. cable networks attract in prime time.

The show's popularity has been a boon for Instagram Live, a feature of the social network that hadn't generated much enthusiasm in the music world before the pandemic. Prior to quarantine, musicians generally used it to offer up a behind-the-scenes look at a tour or recording session. The first one to harness Live's power was D-Nice, a DJ in Los Angeles who hosted marathon sets early on in the lockdown that lured Michelle Obama, Rihanna, and Mark Zuckerberg to his feed. Verzuz took the idea to the next level, giving music fans something closer to a concert experience.



"They've changed the way streaming happens," says Fadia Kader, who works on music partnerships for Instagram.

Swizz and Timbaland say they've had offers to give Verzuz

a new home on TV or on streaming services, but they decided to stay with Instagram and its 1 billion users. (Fans who want to watch on TV can do so through Apple Music; Instagram can only be used on a phone, computer, or tablet.) Liquor brand Cîroc has sponsored the show in a multimillion-dollar deal. Artists who endorse sponsors with a shoutout during the broadcast get a cut of the proceeds, and though Instagram doesn't allow ads during streams, that could change, Kader says. Almost every musician who's appeared on Verzuz has seen a major spike in plays on streaming

CREATORS, **VERZUZ**

> services including Spotify and Apple Music—what Swizz calls the "Verzuz effect."

Timbaland in Miami

The second season started on Nov. 19, with rappers Gucci Mane and Jeezy. "We're still hands on," Swizz says. "We don't have a big, huge staff. It's very rare we speak to managers. We speak to the artists, and then management comes in." And sometimes even two of the most successful producers of this century get a no, such as when 50 Cent declined to perform. "Some people will say, 'I ain't doing it,'" Timbaland says. "We don't force nobody." —Lucas Shaw



ABDALLA HAMDOK

PRIME MINISTER, SUDAN

● The former United Nations economist implemented a half-dozen major new policies this summer, maybe the boldest reforms in the Muslim world in a century.

Sudan's government, an alliance of civilian and military leaders formed after a popular uprising toppled dictator Omar al-Bashir, is meant to be a stopgap. But even with elections expected in 2022, Hamdok has embarked on an audacious sociopolitical reform program—perhaps surprising since he was a relatively obscure technocrat before his elevation to the premiership, recently serving in a senior UN post.

In July, Hamdok abolished laws against apostasy, ended punishment by flogging, criminalized female genital mutilation, scrapped rules requiring women to get a permit from a male family member to travel with their children, and loosened prohibitions on the sale and consumption of alcohol. Perhaps most remarkable of all, his government has pledged to separate religion from the state, effectively ending 30 years of Islamic rule. The last global Muslim leader to attempt such a transformation was Kemal Ataturk, who turned Turkey into a secular republic in the 1920s.

Still, Sudan remains desperately poor, its moribund economy made even more so by the coronavirus pandemic. Donors and investors could grow less wary, though, now that the Trump administration has removed the country from the U.S. Department of State's list of sponsors of terrorism, an anachronous legacy of the al-Bashir era. —Bobby Ghosh

REED HASTINGS CO-CEO, NETFLIX INC.

LOS GATOS, CALIF. ● Netflix saw the fastest growth in its 23-year history when it added 28 million subscribers in the first nine months of 2020.

This was supposed to be a tough year for Netflix. Apple, Comcast, Disney, and HBO all started services to compete with the \$212 billion company. The streaming wars, the thinking went, would distract or siphon off Netflix customers. But by the time the coronavirus pandemic hit, Netflix had stockpiled a mountain of binge-worthy content for people stuck at home with no theaters to go to and little new programming from traditional networks. And because part of Hastings's strategy is to release new TV seasons all at once—not to mention that Netflix spends more than \$17 billion annually on programming—it overwhelmed its competitors with variety and volume.

At a time when challengers couldn't produce new entertainment, the streaming service released popular docuseries (*Tiger King*), reality shows (*Love Is Blind*), movies (*The Old*

Guard), and foreign-language programs (Dark), making it seem as if current events hadn't affected the company at all. Although record unemployment has forced people to rethink their spending, they've been more inclined to cut the cord than to stop paying for Netflix, which will surpass 200 million customers by yearend. —Lucas Shaw



CELESTE BARBER COMEDIAN

● The Facebook fundraiser she started in early January brought in more than A\$51 million (\$37 million) for Australian wildfire relief, the largest charity drive in the platform's history.

As Australia's federal and state governments cobbled together a relief package following blazes that destroyed an area the size of New York state, Barber promoted her fundraising appeal on social media. On Instagram, where she has more than 7 million followers, she's best known for reenacting posts in a split-screen style that contrasts the elegance of celebrities and influencers with her

own awkwardness: Kendall Jenner calmly and coolly navigating her way down a rocky hill vs. Barber's eye-popping, panicked plummet; singer Dua Lipa posing in a one-piece bathing suit on an exercise bike vs. Barber plopped down on a road bike that's missing a back wheel.

Barber's fame helped buoy donations to support fire services in the southeastern state of New South Wales, where much of the devastation occurred, as monthslong fires razed thousands of homes and killed dozens of people as well as an estimated 1 billion animals. On Jan. 14, as donations were rolling in, Barber commented on an Instagram post that she was "feeling the love." To properly capture her joy, she and her husband re-created a viral video of a supermodel dancing poolside with an Italian millionaire. —*Rebecca Jones*

LETITIA JAMES

NEW YORK STATE ATTORNEY GENERAL

● James has filed more than 35 lawsuits against the Trump administration this year, leading the charge against its attempts to disenfranchise minorities and other voters.

The Brooklyn-bred lawyer, who in 2018 became the first Black American and the first woman elected to the role for the state, had a busy summer. In September, James led a group of local governments that wanted to stop the 2020 census from ending early after the administration sought to move up the deadline for collecting results. (The U.S. Supreme Court ruled against the coalition, which civil rights advocates say will lead to an undercounting of urban minorities.) Earlier, in August, she alleged fraud and corruption at the National Rifle Association—chartered in New York in 1871—claiming that members used funds for private jets and family trips; the NRA countersued, saying James had misused her office for political purposes.

That same month she fought back against attempts to hobble the U.S. Postal Service before a rush of pandemic-induced mail-in ballots, heading a suit against Trump and his postmaster general that aimed, in part, to stop the dismantling of mail-sorting machines. In October a federal judge ordered the Postal Service to restore the machines at any facilities that couldn't process first-class election mail quickly enough. —*Cristin Flanagan*



ALAN HOWARD

CO-FOUNDER, BREVAN HOWARD ASSET MANAGEMENT

LONDON ● As the coronavirus pandemic sent global markets into a tailspin, the hedge fund manager traded his way to a 100% gain in investor cash, by far the best among peers.

Traders like Howard place bets on macro trends, reading which way economies will turn and then wagering on everything from interest rates to stocks to currencies. His specialty is rates trading using borrowed money, which allows him to take bigger risks to achieve outsize returns.

That's about all that's known about the highly secretive dealings of the Brevan

Howard AH Master Fund—other than that the "AH" are Howard's initials. It's not clear precisely what moves he made to double investor cash in the first four months of 2020, when peers returned a little less than 3% on average, according to Bloomberg's index of macro hedge funds, of which the AH Master Fund is not part. It's also unclear how his fund has performed since April. (One clue: Brevan Howard's main fund, which invests in the AH Master Fund, was up almost 23% through October.) But this fall he began raising \$500 million based on his success earlier this year.

The moneymaking spree has marked one of the most profitable phases of Howard's career since he co-founded his company almost two decades ago, a dramatic change in fortunes after years of mediocre returns. —*Nishant Kumar*

 She's spent four months in exile since her unlikely campaign turned into the biggest challenge ever to longtime dictator
 Alexander Lukashenko.

Until last spring, Tsikhanouskaya led the life of a typical Belorussian homemaker, focused largely on caring for her two children and coping with the inevitable challenges of getting by in a post-Soviet republic where the average monthly salary is about \$500. But for the past six months, she's spent her days speaking at international conferences, chatting with the likes of Angela Merkel and Emmanuel Macron, and spearheading the biggest democratic movement in the history of the troubled country sandwiched between Poland and Russia.

Tsikhanouskaya became the face of democracy in Belarus almost by accident. In May police detained her husband, Siarhei, a political blogger, as he prepared to challenge Lukashenko for the presidency.

After the arrest, Tsikhanouskaya, 38, decided to run in Siarhei's place and began gathering the signatures needed to register her candidacy. The former English teacher soon received telephone

threats, prompting her to send her children abroad—but steeling her resolve to run. "People began calling me, telling me, 'So many people were collecting these signatures, standing up for you,'" Tsikhanouskaya says via Zoom in lightly accented English. "I realized that I can't betray those hopes."

Lukashenko, who has routinely jailed political opponents and deployed security forces to maintain his grip on power for 26 years, barred most opposition figures from running. But in July the authorities accepted the applications of Tsikhanouskaya and three nominally independent candidates with no prospect of winning. As the opposition united behind Tsikhanouskaya, she began drawing huge crowds, culminating in a rally on July 30 attended by some

60,000 people—spooking authorities into barring her from holding any further mass campaign events.

Tsikhanouskaya's platform was simple: She promised to release political prisoners and to step down within six months after overseeing free elections. Although her message clearly resonated, when the results of the Aug. 9 election were tallied, Lukashenko claimed to have received 80% of the votes in a contest the U.S. and the European Union say was neither free nor fair.

Lukashenko's response triggered unprecedented demonstrations, with crowds swelling to more than 100,000 but remaining mostly peaceful in the face of brutal police crackdowns, mass arrests, and allegations that detained activists were being tortured. When Tsikhanouskaya filed a fraud complaint with the election commission on the day after the vote, she was detained for seven hours in the capital, Minsk. That night she fled to neighboring Lithuania, where her children had been living with friends since June.

Becoming a public figure wasn't easy. Tsikhanouskaya recalls fearing she would forget what she intended to say during early interviews and speeches. But with time she became energized by the crowds. "I just started to talk from my heart," she says. She rejects the notion that she heads the opposition in Belarus, saying the movement is self-organizing. More important, she insists that the people who speak out against Lukashenko's tactics aren't the opposition at all: "We are the majority."

Key to Tsikhanouskaya's appeal, says Artyom Shraibman,

TSIKHAN

founder of political consulting firm Sense Analytics in Minsk, is that she's a "reluctant politician." Other than achieving her goal of new elections, "she doesn't want any power," says Shraibman, who runs a popular Belarus politics blog on the Telegram messaging service, which is difficult for authorities to block. "She's demonstrated a level of courage no male politician has shown."

Tsikhanouskaya's days in exile are filled by strategy meetings with groups back in Belarus—where she yearns to return, though she says she can't while Lukashenko remains in power. She says she has few regrets about her current position, beyond the toll it's taken on her family; with Siarhei in a Minsk jail, the couple's daughter "cries every evening, 'I want my dad'"—which keeps Tsikhanouskaya focused on doing the work that will let her reunite the family back home. "I don't have a right to cry, to panic," she says. "I just maintain a cold mind and do what I have to do." — Tony Halpin





Photograph by Brad Ogbonna

LINDA KIRKPATRICK

PRESIDENT, U.S. ISSUERS, MASTERCARD INC.

PURCHASE, N.Y. ● Consumers are now using tap-to-pay 40% of the time in-store, up from only 30% a year ago, according to Mastercard, an increase of billions of transactions.

It's not easy to change the daily habits of consumers. But it happened recently with credit cards—twice. After years of swiping, American shoppers got used to dipping their cards at checkout. And then this spring, with the pandemic raging and the thought of touching anything suddenly scary, they changed again and started tapping.

Much of the credit goes to Kirkpatrick, who's spent

years laying the groundwork for tap-to-pay use in the U.S. The card network says the technology is clearly better for all parties concerned. For consumers, tapping is about 10 times faster than dipping. For Mastercard—as well as its rivals, plus bank issuers and merchants—faster and more convenient means more revenue. And research has shown consumers are increasingly using tap-to-pay even for smaller transactions, where cash remains king.

But again, it's hard to break habits. Kirkpatrick's first task was persuading retailers big and small to upgrade their point-of-sale systems. Then she had to cajole the biggest banks to speed the rollout of the tapready cards. Finally she had to get consumers on board. All three tasks took on new urgency this year.

Early in the pandemic, when stores were selling out of disinfectant wipes and hand sanitizer, Kirkpatrick helped shift Mastercard's massive marketing budget (perhaps you've seen a "Priceless" ad or two) to make sure consumers understood how they could pay quickly without touching anything. Mastercard also sent out signage that merchants could put up at checkout to let consumers know they accepted the tap-ready cards. Kirkpatrick has also been working with the world's largest banks and other card issuers, sharing the data the company is seeing and helping them speed up their rollout of contactless cards.

From February to March, according to Mastercard, contactless transactions at supermarkets and drugstores grew three times as fast in the U.S. as noncontactless transactions. More than half of U.S. consumers have now used some form of contactless payments part of the time. "Totally mind-blowing," Kirkpatrick says. The growth hasn't been only in the U.S.: In June global contact-

less in-person transactions increased from the previous year in every retail category.

For Kirkpatrick, the strongest sign that tap-to-pay technology was here to stay came when she was scrolling through social media and happened upon a video posted by a popular fast-food chain telling consumers how to do it even while ordering at the drive-thru. "That was a place—the drive-thru—where some merchants were struggling to invest in the technology, because sometimes you have to replace that entire unit that you talk into," she says. "When I saw that, I knew we had hit a tipping point."

—Jenny Surane

EONG: AHN YOUNG-JOON/AP PHOTO. COOPER: MINDY TUCKEF ACALLE POU: FOCOUY/ANADOLU AGENCY/GETTY IMAGES

JEONG EUN KYEONG

COMMISSIONER, KOREA DISEASE CONTROL AND PREVENTION AGENCY → Jeong likes writing short stories, some of which have been

● South Korea's turnaround saw it go from having the world's second-worst Covid-19 outbreak in February to a per capita case count that's about 1/60th of the number in the U.S.

South Korea is raucously democratic and relatively large, with a population not much smaller than Italy's and a capital that's bigger and denser than New York City. So its handling of the coronavirus may hold some lessons for the Western democracies that have thus far failed to control it.

Without Jeong, South Korea might not be where it is now. In late February an outbreak was discovered among followers of Shincheonji, a religious group that had just held packed services in the city of Daegu. Its adherents subsequently spread all over, and the church refused to hand over their names. But Jeong persuaded Shincheonji to disclose its members' identities, allowing her agency to begin testing more than 200,000 of them. She then rolled out one of the most effective contact-tracing regimes in the world. By late March the number of new infections in South Korea was at 100 per day, compared with more than 900 in late February. Daily life has been normal for most of the year, all without a single day of lockdown. — Peter Pae

SARAH COOPER COMEDIAN

● Her TikTok video

How to Medical, which
spoofed President Trump's
suggestion that ultraviolet
light and disinfectant
injections could cure
Covid-19, drew 25 million

views on social media.

Before this year, Cooper was known for her office humor. She wrote cartoon books titled 100 Tricks to Appear Smart in Meetings and How to Be Successful Without Hurting Men's Feelings. In April, wearing a blue blazer, she lip-synced Trump addressing medical professionals at a news conference: "We hit the body

with a tremendous—whether it's ultraviolet or just very powerful light-and I think you said that hasn't been checked, but you're gonna test it," she began. Then she shared the video on Instagram, Twitter, and YouTube. Soon Cooper-eyes wide, brow furrowed, hair unkempt—was adding more under-a-minute lip syncs with titles such as How to Mask and How to Immigration Policy, creating a new kind of political commentary by highlighting Trump's logorrhea through her facial expressions. The videos force audiences to confront whether they would tolerate anyone else saying what he says, and they double as cultural commentary, with Cooper making the subtle point that a Black woman could never get away with Trumpian rhetoric. Now Cooper is trying to prove that she has range. Her first comedy sketch show, Everything's Fine, hit Netflix in late October. —Sarah Frier

LUIS LACALLE POU

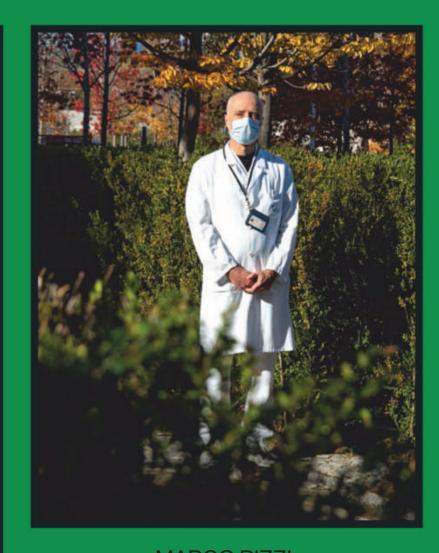
PRESIDENT, URUGUAY

 Uruguay has the lowest Covid-19 infection and mortality rates in South America despite sharing borders with pandemic hot spots Argentina and Brazil.

Lacalle Pou, the son of a former president and heir to one of Uruguay's oldest political dynasties, might have assumed he'd get a honeymoon period after taking office on March 1. But within two weeks of starting, his government detected the first Covid-19 cases in the country of 3.5 million people, and he declared a national emergency. His decision to quickly close borders and institute widespread testing and contact tracing is credited with preventing a major outbreak. Rather than impose a lockdown, Lacalle Pou appealed to Uruguayans' "responsible exercise of liberty," as he calls his promotion of voluntary social distancing and hygiene.

Economists expect Uruguay will suffer its deepest recession in two decades, with gross domestic product contracting 4% in 2020. But Latin America's economy could shrink 7%. Investors have taken note, with Uruguay's bonds returning more than 14% year-to-date through mid-November compared with -0.93% for the region. Even so, Lacalle Pou faces the challenge of containing Covid-19 and reviving an economy that's had slow growth. —*Ken Parks*

THE FRONT-LINE WORKERS PAPA GIOVANNI XXIII HOSPITAL



MARCO RIZZI, **INFECTIOUS DISEASE** DIRECTOR



LUCA LORINI, **EMERGENCY DEPARTMENT DIRECTOR**

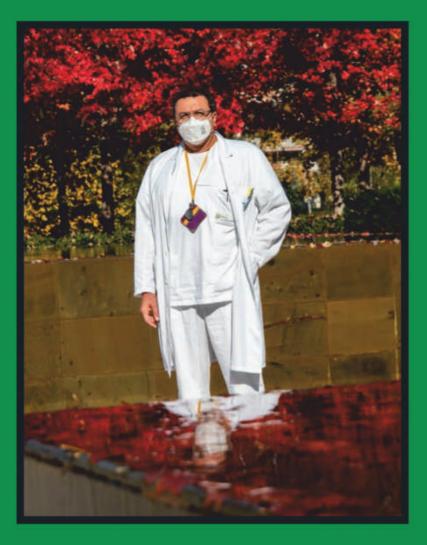


MARIA BEATRICE STASI, **GENERAL DIRECTO**



TATIANA FERRARI, **HEAD OF PREVENTION PROTECTION**





STEFANO FAGIUOLI,
DEPARTMENT OF MEDICINE
DIRECTOR



ALBERICO CASATI, TECHNICAL AND ASSET DIRECTOR

BERGAMO, ITALY • Workers at the hospital risked their lives to treat patients during a pandemic that's seen more than 60,000 medical workers in Italy contract Covid-19, part of a global onslaught that's killed over 7,000 health-care providers worldwide.

When the coronavirus hit the West, the hospital workers of Northern Italy waged the beachhead battles. Among the hardest-hit hospitals was Papa Giovanni. On Feb. 21, the day it recorded its first Covid-19 case, it had 48 beds for infectious disease patients and an intensive-care unit with only eight. Within weeks, Papa Giovanni was housing about 550 Covid patients, including 100 in an expanded ICU. As sickened Italians overwhelmed the emergency room, the virus spread among staff. About 400 out of 4,500 workers at the hospital and nearby satellite facilities fell ill.

Italy's national doctors' guild has tallied more than 200 dead; countless nurses, cleaners, and food-service workers have also lost their lives. Globally, during the first wave, about 14% of Covid-19 cases were among medical workers, according to the World Health Organization.

At Papa Giovanni, the numbers of Covid patients had ticked up from near zero in the summer to the mid-double-digits in late October, when *Bloomberg Businessweek* interviewed staff. Here are edited excerpts, translated from Italian, of the stories they told about those desperate first days. —*Giulio Ghirardi and Vernon Silver*

RIZZI: It was tiring. It was sad, because many people were dead. But we had our mechanisms. One was to take a walk through the emergency room. When you saw the explosive situation in the emergency room, the motivation came.

STASI: It was terrible days, with really strong emotions—firstly, because I lived part of the experience at home having contracted Covid.

No management school can teach how to confront what we went through. You find energy you didn't know you had.

FAGIUOLI: In the middle of my duties organizing the response, I also became sick. For a week, I was worried, because I didn't know how it would go. When I understood I was fortunate, that it would all go well, I got increasingly angry about not being able to return quickly to the hospital to help my colleagues, who were swamped.

LORINI: We constructed this marvelous "cathedral":

100 ICU beds of patients all intubated at the same time and 500 patients in the rest of the hospital.

I'm sure we'll have a vaccine and return to a world that's pretty normal—until the next pandemic.

FERRARI: There was enormous difficulty getting protective equipment, and this hospital needed a lot. For me and my team, it was a big test to procure it to deal with the daily need. Nationally, given the numbers, we weren't prepared to manage a pandemic.

CASATI: We feared that the equipment wouldn't meet the needs of the patients and medical staff. We had to manage the situation continually, minute to minute, and because there were moments when we exceeded the limits of the system, we had to be careful that it could all still work.

I tried not to reflect on what was happening in my city, the continual wailing of ambulances.

AND



ACTIVIST

• Kaepernick announced two major projects this summer, a six-part Netflix series about his high school years and a first-look deal with Walt Disney Co., which includes an ESPN docuseries chronicling the past five years.

The decision in 2016 to kneel during the national anthem at the start of NFL games—a protest against police brutality and racial inequality—cost Kaepernick his job as a quarterback. In the years since, he's become a civil rights icon, advocating for causes that came to the forefront in 2020 after the police killing of George Floyd and the disproportionate death rate from Covid-19 among Black people. A

correctly predicting that his height would be 6'4" and that he would play for the San Francisco 49ers

campaign Kaepernick started in 2016 to raise awareness in Black and Latino communities about higher education, self-empowerment, and interacting with law enforcement pledged more than \$1.75 million to fight the virus and provide legal support to Black Lives Matter protesters.

The Netflix series, Colin in Black & White, a collaboration with Emmy award-winning director Ava DuVernay, will focus on how Kaepernick's adolescence shaped his activism. (A release date hasn't been announced.) The partnership with Disney will feature stories that explore race and showcase the work of minority directors and producers. —Karen Toulon

ZENG YUQUN

In fourth grade, taedernick mote a letter to his future self

CHAIRMAN AND CEO, CONTEMPORARY AMPEREX TECHNOLOGY CO. NINGDE, CHINA ● A February deal to supply batteries to Tesla Inc. helped cut the price of the automaker's Model 3 to about \$37,000 in China, cheaper than anywhere else.

Tesla, which sells more electric vehicles in China

than any other company, makes one car there: the Model 3. And unlike in other countries, more and more of the cars in China are running on CATL's lithium-ion phosphate batteries, which are cheap enough to let Tesla trim 10% off the price, a big step toward solidifying a hold on the mass market.

Zeng, who has a doctorate in physics, has known Tesla CEO and co-founder Elon Musk for some time; in an interview with Bloomberg News this year, Zeng said they text about technology,

Covid-19, and Musk's main interest: cheaper batteries and cars. "He's a fun guy," Zeng said. Batteries are Zeng's obsession, too. His glass and steel headquarters in southeastern China is even built to resemble one, and batteries have made him an estimated \$21 billion fortune. They could make him more money yet. Both companies are opening plants in Germany, though neither side is saying that they're working together. — John Liu and Chunying Zhang

RELAX! WE DIDN'T FORGET ABOUT...

THE USUAL SUSPECTS

Yes, we're aware of Tesla, and no, we didn't overlook Trump. (How could we?) We just figured that putting certain names on the Bloomberg 50 wouldn't surprise anyone, so we gave the most predictably notable people their own list.

WILLIAM BARR U.S. attorney general

AMY CONEY BARRETT Associate justice of the U.S. Supreme Court

JEFF BEZOS CEO, Amazon.com Inc.

JOE BIDEN
President-elect of the U.S.

JAIR BOLSONARO President of Brazil

SERGEY BRIN Co-director, Alphabet Inc.

WARREN BUFFETT Chairman and CEO, Berkshire Hathaway Inc.

TIM COOK CEO, Apple Inc.

POPE FRANCIS

LEBRON JAMES Forward, Los Angeles Lakers

BORIS JOHNSON Prime minister of the U.K.

KIM JONG UN Supreme leader of North Korea EMMANUEL
MACRON
President of France

MITCH MCCONNELL Majority leader of the U.S. Senate

ANGELA MERKEL Chancellor of Germany

NARENDRA MODI Prime minister of India

RUPERT MURDOCH Co-chairman, Fox Corp.

ELON MUSK CEO, Tesla Inc. and SpaceX

ALEXANDRIA
OCASIO-CORTEZ
Member of the U.S.
House of
Representatives

LARRY PAGE Co-director, Alphabet

NANCY PELOSI Speaker of the U.S. House of Representatives

VLADIMIR PUTIN
President of Russia

MASAYOSHI SON CEO, SoftBank Group Corp.

DONALD TRUMP President of the U.S.

XI JINPING President of the People's Republic of China

MARK ZUCKERBERG Chairman and CEO, Facebook Inc.



GWYNNE SHOTWELL PRESIDENT AND COO, SPACEX

HAWTHORNE, CALIF. ● In May, SpaceX became the first private company to send American astronauts into space.

Elon Musk founded Space Exploration Technologies Corp. in 2002 with the goal of revolutionizing space travel and making life multiplanetary; Shotwell, who oversees day-to-day operations and growth, was one of his earliest employees. Before being introduced to Musk, she spent a decade at Aerospace Corp., a large defense contractor, then a few years at Microcosm Inc., a private space startup that designs and builds low-cost rockets and rocket parts.

In 2012, SpaceX became the first private company to deliver cargo to and from the International Space Station. Then, this May 30, after years of working with NASA and learning from cargo runs and countless safety tests, SpaceX made history: Its Falcon 9 rocket carrying its Crew Dragon capsule with Bob Behnken and Doug Hurley aboard blasted off from the Kennedy Space Center in Florida at 3:22 p.m., bound for the space station. The astronauts returned on Aug. 2, splashing down safely in the Gulf of Mexico. "This is really just the beginning," Shotwell said at a news conference afterward. "We're starting the journey of bringing people regularly to and from low Earth orbit and on to the moon and then ultimately on to Mars." —Dana Hull

ODUNAYO EWENIYI & DAMILOLA ODUFUWA

CO-FOUNDERS, THE FEMINIST COALITION

The tech-savvy Nigerians raised almost 148 million naira (\$388,000) in two weeks to support protests against police brutality and corruption.

LAGOS, NIGERIA



call to disband a national police unit, the Special Anti-Robbery Squad, with a history of abuse. SARS was disbanded, but peaceful protests demanding reforms were met with government crackdowns that left more than 50 dead. As the protests gained steam, the coalition used social media to mobilize 600 lawyers to give legal aid to the hundreds arrested. — Yinka Ibukun

Cullors, Garza, and Tometi started BLM in 2013 after George Zimmerman was acquitted of killing Trayvon Martin, an unarmed Black teenager visiting family in Florida. For seven years, BLM has helped organize protests against

police brutality, culminating on June 6 when more than a half-million people gathered in 500-plus locations around the world. In the months that followed. the U.S. has had its biggest collective reckoning on racism since the civil rights era. Companies have

BLACK

pledged to hire more Black people to positions of power; grocery staples and Washington, D.C.'s football team nixed their racist branding; and police budgets have been reviewed for cuts. A majority of Americans now say they support BLM, up from 43% in 2016, according to the Pew Research Center. Edited excerpts from the co-founders' conversation on Nov. 17 with Bloomberg's Rebecca Greenfield:

Bloomberg Businessweek: Why do you think George

Floyd's killing had the impact it did?

Tometi: The fact that a Black man could be quite literally choked to death in broad daylight without any meaningful intervention was traumatic. People were confronted with the reality that anti-Black racism is deadly—and that it continued to persist despite all that was going on [with Covid-19]. They didn't have a job to go to or other responsibilities that would normally have kept them preoccupied. They could not look away.

How involved was BLM in organizing protests?

Cullors: We supported protests that happened across the country. In Minneapolis, I worked directly with the Black Visions Collective, which was a former BLM chapter. Garza: I wasn't on the

ground. Protests are the most difficult part of our movement but not what encompasses all the work that we do. We were also gearing up for a massive election cycle. The organizations that I started, the Black Futures Lab and the Black to the Future Action Fund, were busy trying to get

people to take their protests to the polls. We spent our time registering voters and have partnerships with 15 Black-led grassroots



60



MATTER

PATRISSE CULLORS, ALICIA GARZA &

OPAL TOMETI, CO-FOUNDERS

organizations in nine states. **Support for BLM has waned** in part because of violence at some rallies.

Cullors: My view is White supremacists were showing up to protest and committing acts of violence and damaging property. So why blame it on Black Lives Matter? Unless you're using it as a tool to try to win elections. Unfortunately we had

to spend a lot of our time talking to the media about rioting and looting instead of having a conversation around what really is happening.

come to push for defunding the police? **Cullors:**

Everybody's

How did BLM

obsessed with the defund slogan. They're not actually paying attention to the heart of the ask. We're calling for a reinvestment into our communities or a reimagining of public safety. Black people need more resources. You can simply walk into a Black neighborhood and see that with your own eyes. We need to lessen our obsession with a slogan and show up for

the conversation about how we invest in Black communities. Alicia, why did you step back from BLM to focus on electoral politics?

Garza: Movements on the left have largely been ambivalent about electoral politics and electoral organizing. Everything we leave on the table, we leave for someone else to eat. Too often our communities are engaged symbolically, but when it comes to the substance of what it means to change rules

> and move money, all of a sudden people ghost.

Patrisse, you sent a letter to the presidentelect and vice presidentdiscuss?

elect. What do you hope to Cullors: I'm hopeful that we'll be able to sit down

with them to talk about every single issue that Black folks are dealing with but specifically about police violence and mass incarceration. Our organizations talked to over a million Black voters in this election cycle. It's time for this administration to be accountable to the forces that helped push them over the finish line.

WANG: VCG/GETTY IMAGES.LANGLEY: ALBERTO E. RODRIGUEZ/GETTY IMAGES. BRAY: ALANA PETERSON/REDUX ZEYED: SEAN GALLUP/GETTY IMAGES. WILLIAMS: KAREN E. SEGRAVE

WANG XING

CHAIRMAN AND CEO, MEITUAN INC.

BEIJING • The delivery company, which became a lifeline when lockdown restrictions were imposed across China, has seen its share price surge more than 180% since the beginning of the year, swelling Wang's fortune to over \$20 billion.

China's coronavirus-fighting measures were among the strictest in the world, with many residents forbidden from leaving their apartment complexes. That left Meituan as one of the only ways for millions of people to get basic supplies—not to mention delivery favorites such as dumplings and spicy noodles. Led by Wang, an engineer who dropped out of a U.S. doctoral program to found a series of social media apps before starting Meituan in 2010, the company handled about 15 million food deliveries a day during the lockdown. In many places its riders, who wear distinctive yellow outfits bearing its kangaroo logo, seemed to make up most of the street traffic.

Although life in China is mostly back to normal, consumers are still sticking with delivery. Meituan delivered 24.5 million orders a day in the second quarter, a 7% uptick from a year ago. Wang is nonetheless hedging his bets by expanding into services for consumers who do go out, offering restaurant reservations, hotel rooms, and movie tickets. —Venus Feng

DONNA LANGLEY

CHAIRMAN, UNIVERSAL FILMED ENTERTAINMENT GROUP

NEW YORK ● When Covid-19 struck, Langley released *Trolls World Tour* online, a move that earned Universal the ire of theater owners—and \$100 million in streaming revenue.

Langley has helped oversee some of Hollywood's most successful franchises: Bourne, Minions, and The Fast and the Furious. This year she created a new category of film, "premium video on demand," when she put the Trolls movie and The King of Staten Island, starring Saturday Night Live's Pete Davidson, online for a \$20 streaming fee when almost all U.S. theaters were closed. The chains wanted Universal to delay the releases; they didn't like the precedent of new films with potentially big box offices going straight to video. Industry leader AMC Entertainment Holdings Inc. even said it would boycott future releases from the studio. Langley eventually struck a deal with AMC that reduces how long Universal has to wait to make films available to at-home audiences after they're in theaters. (Other studios are seeking similar arrangements.) Langley intends to make premium video on demand Universal's new release model. —Kelly Gilblom





MOHAMMED BIN ZAY

CROWN PRINCE, EMIRAT

TIM BRAY

FORMER VICE PRESIDENT, AMAZON.COM INC.



Langley's first job in L.A. was at the Roxbury. a hightcuto a high tout by the second of the second

 He upended Middle Eastern geopolitics in September when he normalized relations with Israel, the first time that's happened in the region since Jordan did it 26 years ago.

The decision by the United Arab Emirates' de facto leader could prove to be the most consequential diplomatic breakthrough in the Middle East in a generation. MBZ, as he's widely known, has pursued an aggressive foreign policy, deploying military power (participating in wars in Yemen and Libya) and engaging in economic activity (investing in ports along the Red Sea and the Horn of Africa) to allow his tiny country to play an outsize role in regional and international affairs. Although the agreement with Israel has no timeline, it swiftly made MBZ a pioneer: Bahrain and Sudan followed the UAE's example, and other Muslim states are said to be contemplating it, eager to get their hands on Israeli technology and military supplies and add partners to an alliance against Iran-not to mention scoring points with Washington. Their enthusiasm could grow as the economic fruits of diplomacy become evident; the agreement between the UAE and Israel is expected to lead to bilateral trade of \$2 billion a year, eventually rising to \$6.5 billion, according to Israel's finance ministry. —Bobby Ghosh

YED AL NAHYAN E OF ABU DHABI

SEATTLE ● In May, Bray resigned from his job as a protest against the firing of workers and employee activists who'd criticized warehouse conditions as Covid-19 cases mounted, a move he estimates cost him \$1 million in salary and unvested shares.

Bray was the highest-profile person to speak up during a wave of activism at the tech giant. In March, Amazon fired two warehouse workers in what they said was retaliation for speaking up about safety conditions. Two more warehouse workers were fired in April,

along with two activists at headquarters who'd already been campaigning to get Amazon to address its impact on climate change and were now highlighting the workers' plight. (Amazon said that it changed more than 150 procedures in its facilities to accommodate social distancing and that dismissed workers violated policy or endangered colleagues.)

On May 1, Bray quit, and the explanatory blog post he published made international headlines. His decision was unprecedented: People close to Amazon's brain trust typically haven't been publicly receptive to addressing worker unrest, and the company ramped up a public-relations campaign to stress that its warehouses are safe. In the post, Bray, who's now advising startups and podcasting, talked about curtailing Amazon's influence: A "combination of antitrust and living-wage and worker-empowerment legislation, rigorously enforced, offers a clear path forward." -Matt Day

DARRIN **WILLIAMS**

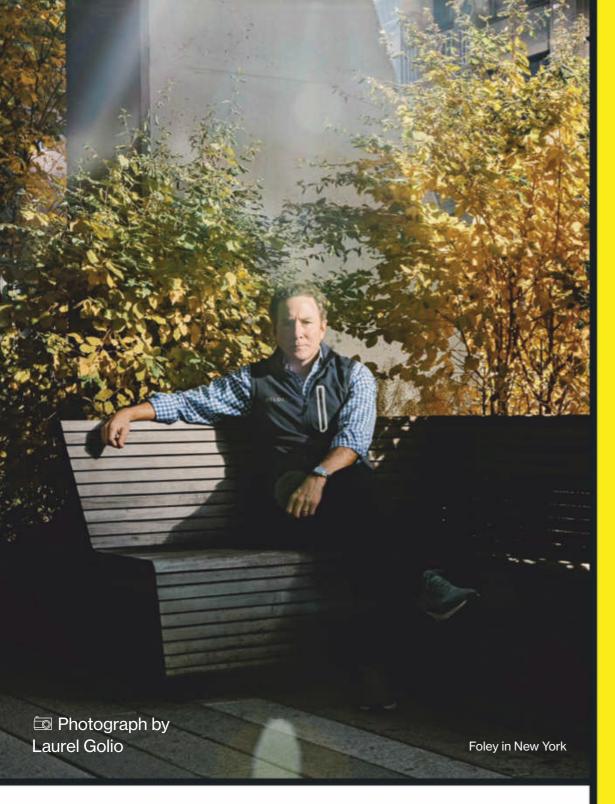
CEO, SOUTHERN BANCORP INC.



ARKADELPHIA, ARK. ● The banker was part of a successful effort to add \$10 billion for community development finance institutions in the second round of Paycheck Protection Program loans.

Williams, a former lawyer, rose from relative obscurity when he was tapped to be a member of President Trump's Great American Economic Revival initiative, which also included Jamie Dimon, chairman and CEO of JPMorgan Chase & Co., and David Solomon, chairman and CEO of Goldman Sachs Group Inc. Their conversations with Trump and Secretary of the Treasury Steven Mnuchin ultimately led the Small Business Administration, which administered the \$350 billion program, to earmark the money for so-called CDFIs.

Southern Bancorp is one of the largest of about 1,100 such institutions, which the Clinton administration chartered to invest in the poorest U.S. communities. This summer, Williams's bank wrote \$111 million in PPP loans and gave away \$125,000 to small businesses in the most Covid-devastated places in the Mississippi Delta. In October, Bank of America Corp. Chairman and CEO Brian Moynihan took a 5% stake in Southern Bancorp. Williams plans to use the financial injection and the publicity surrounding the deal—as well as Big Business's promise to do more about racial inequality—to double the bank's \$1.6 billion in assets over the next decade and whittle away at the region's wealth gap. — Jeff Green



JOHN FOLEY

CEO AND CO-FOUNDER, PELOTON INTERACTIVE INC.

NEW YORK ● Revenue from Peloton's exercise bikes, treadmills, and services grew to \$757.9 million through September, an increase of 232% from the same period a year earlier.

Foley would like to stress that he's rooting for an end to the coronavirus pandemic, just like everyone else. That said, his business has more than tripled in a year, so he's trying to figure out how to keep its hot streak going once gyms are a thing again.

For the uninitiated, a Peloton stationary exercise bike comes with a high-resolution touchscreen monitor that can simulate city streets or mountain paths. What really distinguishes it, though, is that the screen can also pipe in a prerecorded simulacrum of a professional spin class or, for \$39 a month, let cyclers check out a wider range of recordings and join live remote classes, with the instructors barking motivation. More than 1.3 million Peloton owners pay the subscription fee, roughly double the number from a year ago, the company says. There's also a growing base of subscribers who pay \$13 a month to stream classes to their phone, tablet, or TV in lieu of laying out \$1,895 for Peloton's go-to bike or significantly more for one of its treadmills. "Word has gotten out about what Peloton is and why it's special," says Foley, whose company is now valued at roughly \$30 billion.

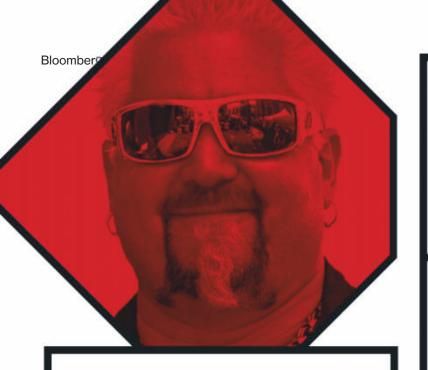
For much of 2020, the unprecedented demand for Peloton's products has collided with the limits of pandemic supply chains, often leaving customers griping about weekslong waits for their bikes. "I think that for a long time we're going to be scrambling to increase our capacity," Foley says, adding that he hopes to resolve some outstanding supply issues by April. For now, he says, the company has slashed its ad spending to avoid inflating expectations.

Foley shrugs off questions about Peloton's stamina and post-pandemic potential, noting that the company has at least doubled its revenue each year since its 2012 founding. At the center of his bullish case is the degree to which Peloton's pricey hardware and gamified software can lock customers into the classes. Why go back to the gym in 2021, the thinking goes, now that you've already got the bike and a digital spin instructor at home?

Indeed, Covid has made converts of tons of people who swore they'd never spring for a Peloton, leaving the company's widely mocked ad campaign from the 2019 holiday shopping season a distant memory. Peloton expects to reach close to \$4 billion in annual revenue by the end of the fiscal year in June. As for whether this is the peak, he says, "I could see us with 20 or 30 million sub-

scribers in the not-too-distant future."

Fitness brands like NordicTrack and Echelon have added guided video instruction to their hardware and are eager to carve off some of Peloton's success. So is Apple Inc., which has said it will introduce an app with remote fitness classes by yearend and charge \$3 a month less than Peloton. Apple's most relevant hardware, though, is its health-monitoring smartwatch. And Peloton's early branding lead is formidable. The more Peloton customers use their bikes, the more likely it is that they'll buy one of the company's treadmills and convert friends, says Laura Martin, an analyst for Needham & Co., an investment bank and financial adviser. "Thanks to Covid," she says, "Peloton has an eight-month lead." — Mark Gurman



GUY FIERI CELEBRITY CHEF

• He raised more than \$21.5 million in seven weeks to assist unemployed restaurant workers.

On March 27, as businesses across the U.S. were starting to feel the devastating effects of pandemic-related closures, Fieri started the Restaurant Employee Relief Fund. The vast majority of the money he raised came after personal pleas to the likes of Moët Hennessy USA, PepsiCo, and Uber Eats, whose sponsorship has collectively helped roughly 43,000 people receive \$500 grants.

The host of *Diners, Drive-Ins, and Dives* has also produced a documentary, *Restaurant Hustle 2020*, spotlighting the challenges the industry continues to face. It airs on the Food Network in December, which is also when the self-appointed mayor of Flavortown opens his delivery-only chain, Guy Fieri's Flavortown Kitchen, in almost 200 locations, including Los Angeles and Minneapolis. Dishes include the Real Cheezy burger, which comes with Fieri's signature donkey sauce. —*Kate Krader*



BYJU RAVEENDRAN

FOUNDER AND CEO, THINK & LEARN PVT LTD.

BENGALURU, INDIA

Byju's, his online education app, had 73 million users in October, up from more than 40 million in January.

Coronavirus lockdowns sent India's economy into its first contraction in decades, but for a few entrepreneurs the crisis has also meant opportunity: Revenue for Byju's is expected to double, to more than \$1 billion, in the fiscal year ending next March.

The app's lessons include everything from drawing for kindergartners to quantum physics for high school seniors. Raveendran introduced it in 2015 to connect teachers in India with students just as affordable smartphones and cheap wireless data gave many of the country's 250 million school-age children access to technology.

The son of schoolteachers, Raveendran got his start as a star tutor who jetted around India, teaching high school math at

sports stadiums and doing exam prep for prospective engineers and businesspeople in large auditoriums. The Chan Zuckerberg Initiative, Bond Capital Associates LLC (co-founded by Mary Meeker), and BlackRock Inc. are backing his vision, driving Byju's valuation from \$8 billion in January to \$12 billion in October. —Saritha Rai



THE VACCINE CHASERS

DAN BAROUCH Director, Center for Virology & Vaccine Research, Beth Israel Deaconess Medical Center, Boston

CHEN WEI Major general, People's Liberation Army, and researcher, Academy of Military Medical Sciences, Beijing KIZZMEKIA CORBETT Research fellow and team lead for coronavirus research, Vaccine Research Center. National

Institute of Allergy and Infectious Diseases, Bethesda, Md.

SARAH GILBERT Professor of vaccinology, Jenner Institute at the Nuffield Department of Medicine, University of Oxford

UGUR SAHIN CEO, BioNTech SE, Mainz, Germany

 Researchers from countries around the globe are developing more than 200 experimental coronavirus vaccines, according to the World Health Organization,
 of which have entered human trials.

These scientists are the vanguard of the effort to develop a vaccine for SARS-CoV-2. No shot has been developed and approved in less than four years, so what they, fellow scientists, and the drug companies they're working with have accomplished is significant: identifying the virus's genetic sequence,

designing new technologies, and starting late-stage clinical trials with tens of thousands of healthy participants.

Pfizer Inc. and partner BioNTech-and, separately, Moderna Inc.-were the first to see their candidates show signs of success after they prevented more than 90% of symptomatic infections in trials. AstraZeneca Plc and the University of Oxford followed, displaying lower levels of efficacy in an interim analysis. Within weeks other front-runners will also report on whether their versions are safe and effective, opening a door to emergency authorizations from regulators. The Pfizer-BioNTech shot was authorized in the U.K. on Dec. 2. As more get a green light, the world could soon have a way to protect against a virus that's taken 267,000 lives in the U.S. and 1.5 million globally—and a glimmer of hope for a return to normalcy. —Riley Griffin

SPECIAL PURPOSE ACQUISITION COMPANIES

• Promoters have raised over \$60 billion this year—more than in the previous 10 years combined—for companies that don't have a business yet.

They came out of nowhere to dominate the market for initial public offerings in 2020. Special purpose acquisition companies, also known as blank checks, are empty corporate shells whose sponsors raise money from investors and then look to buy into another business, usually a private one. A SPAC's most valuable asset, besides all that cash from investors, is arguably its stock market

listing. The company it invests in instantly becomes a public one, without many of the hassles that go along with a traditional IPO.

Another reason SPACs were big this year: The market volatility that followed the Covid-19 lockdowns made the spring and summer a scary time to try to sell new stock. SPACs offer businesses a surer deal—just take this money we've already raised. But why would someone buy shares in a company that doesn't even have a business yet? In a world of low interest rates and high valuations on other stocks, some see SPACs as a reasonable place to park money for a while. A SPAC is typically structured so you can get money out if you don't like the deal it makes, and there's a chance you'll be getting in early on the next hot company. —*Crystal Tse*



MADISON CAWTHORN

REPRESENTATIVE-ELECT, NORTH CAROLINA

■ The 25-year-old is the youngest Republican ever elected to the House of Representatives and will be the first U.S. lawmaker born in the 1990s.

Donald Trump lost the election, but his message resonated with more than 73 million people, and Republicans gained seats in the House. The telegenic Cawthorn, who won North Carolina's 11th District, supported the president and appears game to carry on his spirit under the Biden administration. During the election, Cawthorn dealt with controversies around sexual misconduct and racism (he denied the accusations), as well as an Instagram post that seemed to glorify Hitler. (Cawthorn said that a trip to Hitler's vacation house in Germany had been on his "bucket list" and "did not disappoint.") After his race was called, he continued channeling Trump's bombastic style, tweeting, "Cry more, lib." Cawthorn has been using a wheelchair since a 2014 car accident and says he wants to make health care his signature issue.

The election of someone his age was one of many political firsts in the U.S. in November. Notable others include the first Korean-American women to serve in the House: Republican Michelle Steel of California and Democrat Marilyn Strickland of Washington state. Democrat Cori Bush is the first Black woman to represent Missouri, and Cynthia Lummis is the first female senator from Wyoming. In New York, Ritchie Torres and Mondaire Jones will be sworn in as the first openly gay Black representatives. And in Delaware, new state Senator Sarah McBride becomes the highest-ranking transgender lawmaker in the country. — *Erik Wasson*

✦ Hehir played baseball at Williams College

JASON HEHIR DOCUMENTARIAN

● Hehir's *The Last Dance*, a 10-part docuseries about Michael Jordan's final season with the Chicago Bulls in 1998, drew 6.3 million viewers the night it premiered on ESPN and ESPN2 in April, a record for a documentary on the network, and an average of 5.6 million over the following month, making it the most-watched doc in the network's history.

The first episode of *The Last Dance* aired when most of the U.S. had been in lockdown for a month and live sports were almost totally on hiatus. ESPN moved up the release by two months to give sports-starved fans something to get excited about—and something to justify the \$8 a month cable subscribers were spending.

Hehir wove decades-old, behindthe-scenes video with modern-day interviews and commentary into a rumination on the price of glory. Jordan appeared a little overweight and glassy-eyed for interviews; he sat alone, a cigar and drink sometimes at hand. Hehir, who made the ESPN docs *Andre the Giant* and *The Fab Five*, about the University of Michigan basketball team of the early '90s, used the access to Jordan and the previously unseen footage to tap into nostalgia, distract viewers, and complicate the picture of one of the most famous athletes of all time.

—*Ira Boudway*

● One of China's most popular media personalities, she hit record numbers this year with her shopping broadcasts, averaging 20 million views in April—double the figure in late 2019—as consumers opted to transact from the safety of their sofas.

Viya dominates China's \$60 billion livestream shopping industry. On Alibaba Group Holding Ltd.'s e-commerce platform, she plays the enthusiastic saleswoman and master of ceremonies, pushing instant noodles, cosmetics, and more during broadcasts that are part infomercial and part variety show. Links to buy the items she endorses aren't released until five seconds after her pitch,

heightening the sense of urgency. Products are known to sell out.

Already popular before the coronavirus pandemic, Viyathe name is a play on "slightly hoarse," in reference to her husky voice—and streamers like her are increasingly essential to global brands trying to extend their reach in China. Multinationals such as Procter & Gamble Co. and Tesla Inc. have turned to her to get their goods in front of consumers. So, too, has Wuhanbased Casic Rocket Technology Co., which enlisted Viya to offer her most unusual item to date: the right to send a small payload into space. That went for about 40 million yuan (\$6.1 million) on a show in April. — Jinshan Hong and Allen K. Wan



VIYA

LIVESTREAMER

THE COVID TRACKING PROJECT

ALEXIS MADRIGAL, ROBINSON MEYER, ERIN KISSANE & JEFF HAMMERBACHER, CO-FOUNDERS Since early March the Covid Tracking Project has cataloged more than 170 million tests, becoming the authoritative source for virus statistics in the U.S.

Madrigal and Meyer, staff writers at the *Atlantic*, started the project after they broke news in early March that the U.S. was vastly overrepresenting the number of people who had been tested for Covid-19. They put out a call for volunteers, and Kissane, now the CTP's managing editor, was the first to sign on. Hammerbacher, a venture capitalist and data scientist, was Madrigal's college roommate.

The question they wanted to answer: How many Americans were getting tested for Covid-19? As the coronavirus spread, that seemed like one for the federal government, but it didn't have the infrastructure in place to produce a reliable answer. So the co-founders began compiling a spreadsheet
that became the backbone
of something more comprehensive: a full-scale public-health
reporting initiative that's now run by
300 volunteers and a core group of paid
staff supported by grants.

In addition to keeping tabs on state-by-state numbers for cases, tests, hospitalizations, and outcomes, the Covid Tracking Project also started monitoring racial disparities and nursing homes. Johns Hopkins University uses CTP stats for its Testing Insights Initiative, and the cable networks often source project data in their tallies of cases and deaths. —Drew Armstrong

The Testing Insights Initiative is a collaboration among groups at Johns Hopkins that include the Bloomberg School of Public Health, and it's supported in part by Bloomberg Philanthropies. Michael Bloomberg, the founder of Bloomberg Philanthropies, is also the founder and majority owner of Bloomberg LP, which owns Bloomberg Businessweek.

MADRIGAL MEYER KISSANE HAMMERBACHER

Bloomberg Businessweek December 7, 2020

 She gave a boost to Morris Brown College's
 \$5 million fundraising campaign, which helped it apply for reaccreditation.

When the WNBA announced it was restarting its season, Montgomery had a choice to make. She could report to the league's "wubble"—its Covid-free bubble—or she could skip the season and devote herself to Atlanta's reeling Black community. On June 18 she tweeted that she'd sit it out. The next day, Juneteenth, she threw a party to feed Black Lives Matter protesters and homeless people in the city's Centennial Olympic Park. "My mom was telling me when people don't feel that their voices are heard, they have to make it felt," she says. "I started to think about what 'make it felt' meant to me. It doesn't mean just raising your voice but having action behind it."

Montgomery used her season off to work on a voter registration campaign in Georgia and to give speeches about activism to student-athletes at her

alma mater, the University of

Connecticut, as well as Morehouse College and Georgia Tech. And she focused hard on saving a lesser-known

school, Morris Brown. Founded in 1881, it was the first college in Georgia established by mem-

bers of the Black community. But in 2002 prosecutors charged its then-president with defrauding the government and students, and the school lost accreditation. The president pleaded guilty to embezzlement in 2006 and got probation.

Morris Brown survived, but only barely. Its enrollment plummeted from a high of 2,700 students to fewer than 50. At one

point the water was turned off because of an unpaid bill. Montgomery brought attention to the school's plight and encouraged her fans to donate to its fundraising drive. She's now planning to raise funds for tuition assistance and a gaming center for a new e-sports program. "She's put out the word that Morris Brown is still open," says Kevin James, the school's current president.

Originally from St. Albans, W.Va., Montgomery was an All-American at UConn and won a national championship in 2009. She's been more of a role player than a superstar since, though she was an All-Star in 2011 and won championships with the Minnesota Lynx in 2015 and 2017. She'd been the Dream's starting point guard for the past two seasons.

By sitting out, Montgomery had to give up her salary

of about \$100,000. But her move helped set off a wave of activism in the league. Two more WNBA players, including the Dream's leading scorer, Tiffany Hayes, subsequently opted out to join BLM protests instead of playing.

Then in August, after police in Kenosha, Wis., shot Jacob Blake, players for the NBA's Milwaukee Bucks refused to take the court for their playoff game, leading to cancellations across all the major leagues. "When Jacob Blake got shot, the whole NBA stopped, the WNBA stopped, MLB," Montgomery says. "While, yes, it was disappointing and, yes, we still have a long way to go, that's progress. A whole league stopping because of police brutality? That's never happened before."

During the bubble season, the NBA and WNBA both had Black Lives Matter painted on their courts and allowed players to swap social justice messages in place of their names on jerseys. Next season, though, the NBA will be

back to normal because, as Commissioner Adam Silver has said, people just "want to watch a basketball game." A WNBA spokesperson says the league hasn't made a decision about on-court displays yet.

Montgomery, who plans to return next season, says that whatever happens, her activism

will continue. She notes that 13 owners of major U.S. sports teams contributed to the



MONTGO

Trump campaign, making rules against athlete protests seem hypocritical. Earlier this year she criticized Dream co-owner (and U.S. Senator) Kelly Loeffler for saying that Black Lives Matter protesters wanted to "destroy American principles." "There are a lot of people that just want to turn on the TV, and they want sports to entertain them," Montgomery says. "A lot of athletes are saying we can't just do that. I'm still a part of the Black community, and I am still going to be that when I leave the court."

She's also going to keep working on behalf of Morris Brown and other historically Black colleges. "It's our history," she says. "Every time a school is underfunded and loses its accreditation or has to shut down, a little part of our history dies with it." — Dina Bass and Brandon Kochkodin



MARIA RESSA CEO, RAPPLER INC.

PASIG CITY, PHILIPPINES • She faces up to six years in prison after being found guilty of "cyber libel" in a landmark case for press freedom.

In June a judge ruled on the charge, which can be initiated when a party who believes he's been defamed requests a prosecution. The ask had come from businessman Wilfredo Keng, who said *Rappler* defamed him when the online news site cited a report about his alleged links to drug smuggling in a story.

Ressa is appealing the verdict, which

critics of President Rodrigo Duterte say is an example of political persecution. He's denied any role in the case, with his spokesman calling it the result of "bad journalism" and "bad lawyering."

Ressa has won wide international praise for investigations of alleged police abuses in the president's antidrug efforts. She's carried on despite what journalism advocates say is a campaign of official intimidation, including a tax evasion case and a claim by regulators that financial support *Rappler* received violated a ban on foreign ownership of media. Free on bail, she's fighting all those allegations—and still publishing.

—*Matthew Campbell*

KELLER RINAUDO

CO-FOUNDER AND CEO, ZIPLINE

SOUTH SAN FRANCISCO, CALIF. ● Zipline drones have delivered more than 15,000 bundles of personal protective equipment to Novant Health facilities in North Carolina.

Drone deliveries are well-suited to a pandemic: They can be deployed on demand, and they don't involve contact between people. Zipline is making them a reality in the U.S. In May the company completed its first American delivery, parachuting a box of face masks from 50 feet above to Novant's Huntersville Medical Center in suburban Charlotte. And in September, Walmart Inc. announced it

would be using Zipline to deliver health and wellness products directly to customers in northwest Arkansas. Novant and Walmart chose Zipline based on its record in Africa, where it's logged millions of miles delivering blood, medicine, and other supplies to hospitals and clinics in Ghana and Rwanda. Rinaudo started the company in 2014 after learning that emergency requests from clinics there often went unanswered.

Zipline's autonomous, battery-powered drones are launched from cata-pults and carry parachute boxes weighing as much as 4 pounds; they cruise at 60 mph and can fly as far as 100 miles, round trip. A single distribution hub can manage a fleet of about 30 and supply an area of 8,000 square miles, delivering as much as 2 tons of freight in a week.

—Ira Boudway

FORREST LI

FOUNDER, CHAIRMAN, AND GROUP CEO, SEA LTD.

SINGAPORE ● Sea, now worth about \$83 billion, is the most valuable company in Southeast Asia.

Born in China, Li adopted the English name "Forrest" after watching *Forrest Gump*; the warmth, persistence, and courage of the title character appealed to him. In June 2005, while he was getting his master's degree at Stanford, he attended his girlfriend's graduation ceremony at the school—the famous one at which Steve Jobs told graduates that life's dots can be connected only by looking backward, not forward. Inspired, Li, who'd spent his undergraduate days in Shanghai playing video games until dawn, founded his online gaming company in Singapore in 2009. He took it public in New York in 2017, by which point it had added an e-commerce platform, Shopee.

Sea's initial stock rally was fueled by the success of the mobile game *Free Fire*, a battle-royal-style title that had more than 100 million peak daily active users in the second quarter. That success, combined with Shopee's emergence as a top online shopping site in Southeast Asia, has swelled investor optimism that the unprofitable company could one day become a mashup of gaming giant Tencent Holdings Ltd. and e-commerce powerhouse Alibaba Group Holding Ltd. Shares of Sea are up more than 300% this year, boosting Li's net worth to more than \$9 billion. — *Yoolim Lee*



__ a belly warmer that's popular in Japan

BAIJU BHATT & VLADIMIR TENEV

CO-FOUNDERS, ROBINHOOD

MENLO PARK, CALIF. ● The brokerage added 3 million accounts in the first four months of 2020 as millennials and Zoomers stuck at home flocked to the stock market.

Since the Stanford pals founded it in 2013, Robinhood has been about lowering barriers to investing. It offered free trades before that was industry standard, along with no minimum balances and an app-focused approach that made buying shares as easy as ordering a burger on Seamless. So it was perhaps no surprise that as equity markets collapsed and then recovered millions of newly minted traders-many with \$1,200 stimulus checkslogged on. Their Jim Cramer was Dave Portnoy, founder of the irreverent Barstool Sports Inc., who livestreamed his profanity-laced trading sessions and rooted that "stocks only go up!" (Portnoy has no formal relationship with Robinhood.)

A September funding round lifted Robinhood's valuation to \$11.7 billion. It had more than 13 million accounts as of then and expanded from about 600 employees in late 2019 to more than 1,000 this fall. Although the trading frenzy was good for business, Robinhood ran into trouble, too. Consumer protection agencies got roughly four times the number of complaints about the brokerage as some of its peers in the first half of the year. The company also drew regulatory scrutiny for its handling of an outage in March and over whether it properly informed clients about how it completed customer orders. "We strive to maintain constructive relationships with our regulators and to cooperate fully with them," a Robinhood spokesperson said in a statement in September. — Annie Massa

AYA KYOGOKU

DIRECTOR

& HISASHI NOGAMI

PRODUCER, ENTERTAINMENT PLANNING & DEVELOPMENT, NINTENDO CO.

KYOTO, JAPAN ● Animal Crossing: New Horizons has sold more than 26 million copies since its March release, making it the most popular version of the series in its almost 20-year history.

Imagine inhabiting an idyllic island where you can garden, fish, decorate your home, go to a concert or museum, or try your hand at a stock market where trades are conducted in turnips. Want to see what your friends are up to? Just hop over to their islands. If this sounds to you like a lovely respite from the hellscape that was 2020, you're not alone: The virtual-life simulation was so popular it caused a run on Nintendo's Switch consoles, leading to a global supply shortage that wasn't resolved until the fall.

Kyogoku, one of the only female game directors in Japan, has long credited the success of the series to the diverse team behind it; they've broadened the game's appeal beyond the typical teenage-male demographic. Part of the draw is making fun aesthetic choices, whether they're the statues decorating your house or your clothing. That's thanks to Nogami, who's earned credits on other major titles including 2006's *Wii Sports*. The massive hit Nogami and Kyogoku created has helped Nintendo shares climb about 35% this year.

—Takashi Mochizuki

Bloomberg Businessweek December 7, 2020

 Sixty-four percent of Americans have said his handling of the coronavirus outbreak is "good" or "excellent," according to an October Morning Consult/Politico poll; politicians on both sides of the aisle have failed to break 50%.

Fauci, the top infectious disease doctor in the U.S. since 1984, has practically reached rock-star status for his role in educating the country on Covid-19; he's spoken bluntly, or as bluntly as possible, even in the face of President Trump's criticism. Edited excerpts from Fauci's conversation on Nov. 17 with Bloomberg's Michelle Fay Cortez:

Bloomberg Businessweek: When did you know this year was going to be one for the record books?

Fauci: When New York got hit as badly as it got hit in the spring, then I knew it was going to be a really, really bad year. When you have a virus

that is that highly transmissible that makes enough people sick that you almost overrun the system in a city as sophisticated as New York—then I knew we were in for a hard time.

What's gone well?

Things certainly went well with regard to the science. We would not even be close to this 10 years ago without the technology of the new vaccine platforms [the first to use a genetic blueprint of the virus to prompt an immune response], which are the result of basic and applied clinical research, plus the network of clinical trial sites that I originally set up to

test for prevention and treatment of HIV. This is the fruit of investment that long antedated Covid-19.

Do you see HIV/AIDS and Covid-19 as bookends to your career?

I still want to attack malaria and tuberculosis, so I'm not through yet. But, yes, let's say it is. HIV was an outbreak with devastating consequences for society. We're now almost 40 years into the HIV epidemic, and it's still a lingering, smoldering global outbreak. We've had spectacular success with HIV in the realm of therapy, not so much in the realm of vaccines. The situation is similar with Covid to the extent that it's a brand-new infection that has thrust itself on society. But it ends there, because this is an explosive outbreak

that essentially threatens everyone on the planet. We've seen it literally shut down everything, causing economic destruction and devastation. It's the worst outbreak of a respiratory-borne illness in 102 years. Great strides of science have already given us two safe and highly effective vaccines. Ultimately we will get control of this virus.

Early in the HIV outbreak, you took heavy criticism. Did you ever imagine you would be beloved?

That's just part of society's thirsting for clarity, for facts, for information that's based on sound science and evidence. I've become a symbol of that.

What's your advice to Americans about end-of-the-year holidays?

Is it worth the risk of bringing a lot of people together, or

should you say, "We're going to pull back a little bit on the holiday season until we get it under better control"? could be worse at the

end of the year. We already hear that planes are fully booked, airports are going to be crowded. That's going to lead to an upsurge in cases.

Did you have to pull any punches because of

politics?

I haven't pulled back. That's the reason I've been threatened, both my life and my safety. My family has been harassed because I have not pulled back. That is a ridiculous situation, where someone who is trying to give a public-health message actually has their life threatened. I've chosen this life. I am not

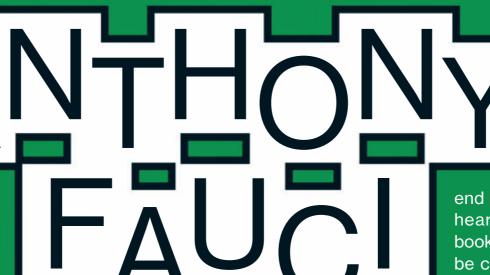
worried about myself, but I am angry that my family is also being harassed. That is the sign of cowards, who harass somebody's family because the person is trying to give a public-health message.

Has the politically charged environment, particularly stemming from the Trump administration, damaged our country's response?

Parts of the country have paid no attention to public-health measures and pushed back on them. That's really a problem. I'm not going to comment on the Trump administration.

What about the Biden administration?

I've served six administrations. I look forward to serving a seventh.



DIRECTOR, NATIONAL INSTITUTE **OF ALLERGY AND INFECTIOUS DISEASES**



His Twitter

The 23-year-old, one of the Premier League's brightest young stars, spent much of the summer working to ensure that kids from a poor upbringing have access to free school meals during scheduled and unscheduled closures. In June a groundswell of public support for his cause got the government to spend £120 million (\$159 million) to extend a voucher scheme that it hadn't intended to

keep funding. In an open letter to Parliament that Rashford posted on Twitter, he wrote, "I encourage you to hear their pleas and find your humanity." The tweet got more than 300,000 likes.

The government's about-face was humbling for Prime Minister Boris Johnson, who saluted Rashford's pertinacity in announcing the extension. Since then, Rashford's doggedness has seen Johnson's government backtrack for a second time and pledge more than £400 million in further support through 2021.

Rashford is driven by his own hardships. Born and raised in Manchester by a single mother who relied on food vouchers to feed her five children, he was spurred to activism during the coronavirus pandemic when he saw the pressure it heaped on already struggling families. His efforts earned royal recognition in October, when Queen Elizabeth II included him in her annual birthday honors list. —Fareed Sahloul

TSAI ING-WEN PRESIDENT, TAIWAN

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basic sign language to judge a poetry competition for deaf children

CHANGPEN

CHANGPENG ZHAO

CO-FOUNDER, BINANCE HOLDINGS LTD.

● Zhao says he expects his private cryptocurrency exchange to have profits of \$800 million to \$1 billion this year, up from about \$570 million last year, as market uncertainty pushes traders into digital coins.

Zhao, who goes by CZ, started his business in 2017. By that point, the world was littered with failed exchanges—see Mt. Gox, 2014. But Zhao had experience engineering high-frequency trading systems and working for other crypto startups. (From 2002 to 2005, he worked at Bloomberg LP.) Binance offered lower trading fees and rolled out a coin, BNB, that doubles as a loyalty program: If you hold it in your digital wallet, you pay lower fees, no matter what coins you trade.

The company has come to dominate the market for crypto derivatives—Bitcoin futures, for example—thanks partly to issues at competitors. In April it acquired CoinMarketCap, the No.1 place for crypto investors to check thousands of coin prices and see which exchanges have the highest trading volume. (The terms of the deal weren't disclosed.) To prove his company's staying power, Zhao must now remain on the right side of regulators. In July the U.S. Securities and Exchange Commission hired the same company Binance uses to glean insights from its blockchain, on which BNB runs, to keep its own tabs on the blockchain and to deter bad actors. "We're always working closely with regulators and law enforcement worldwide," Zhao says. —Olga Kharif

● Taiwan went more than 200 days without a locally transmitted Covid-19 case after Tsai's administration instituted one of the world's most effective pandemic-response protocols.

Tsai, a former law professor and Taiwan's first female president, started the year by securing a second term in an overwhelming victory on Jan. 11. But even in the runup to the election, her government was busy preparing to close borders, impose travel restrictions, and set up rigorous contact-tracing and quarantine protocols. (Those who violate lockdown measures face fines of as much as NT\$1 million, or \$35,000.) Taiwan, with a population of 23 million people, has had just over 600 coronavirus cases and seven deaths, numbers kept low by widespread adoption of face masks after the

island's deadly experience with SARS. Taiwan will likely be among the few economies to experience growth this year, with officials in August forecasting gross domestic product to expand 1.56%.

Still, Tsai will have to remain vigilant: This fall the government recorded more than 20 imported Covid-19 cases in a two-week period. Other countries that fought the virus well initially, such as Singapore and Japan, later saw spikes.

—Samson Ellis

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ASHFORD: DANIEL LEAL OLIVAS/GETTY IMAGES, TSAI: TYRONE SIU/REUTERS. ZHAO: ANTHONY KWAN/BLOOMBERG

HOW ABOUT A ROUND OF APPLAUSE FOR SOME ALUMS?

Since the first Bloomberg 50 in 2017, we've had a rule: no repeats. But a few past honorees could've made the list this year, so we gave them one of their own.

STACEY ABRAMS

FOUNDER, FAIR FIGHT, FAIR FIGHT ACTION, AND FAIR COUNT, ATLANTA (BLOOMBERG 50, 2019)

Her network of organizations highlighting voter suppression and promoting fair elections is credited with helping inspire about 800,000 registrations in Georgia. Joe Biden became the first Democratic presidential candidate to win the state since 1992. (Donors to Abrams's organizations include Michael Bloomberg, owner of Bloomberg LP, Bloomberg Businessweek's parent company.)

MUKESH AMBANI

CHAIRMAN, RELIANCE INDUSTRIES LTD., MUMBAI (2018)

 Asia's richest man persuaded Facebook, Google, and private equity funds to inject more than \$20 billion into Jio Platforms, the technology arm of his conglomerate, making him one of the 10 wealthiest people in the world—and setting the stage for a clash with Amazon .com for dominance of India's e-commerce market.

JOSÉ ANDRÉS

FOUNDER, WORLD CENTRAL KITCHEN, WASHINGTON (2018)

● Throughout the pandemic, World Central's #ChefsForAmerica initiative has provided people in need with more than 30 million meals in 400-plus cities.

JACINDA ARDERN

PRIME MINISTER, NEW ZEALAND (2019)

● Life is back to something like normal for the country's 5 million people, which helps explain her overwhelming reelection on Oct. 17. Ardern locked down New Zealand early, keeping infections below 2,000 and deaths to just over two dozen.

MARY BARRA

CHAIRMAN AND CEO, GENERAL MOTORS CO., DETROIT (2017)

● To fulfill a \$490 million U.S. government contract, Barra directed GM engineers to transform an automotive electronics plant in Kokomo, Ind., into an assembly line for ventilators. By September the company had used previously furloughed workers to produce and deliver 30,000 machines.

KENNETH FRAZIER

CEO, MERCK & CO., KENILWORTH, N.J. (2017)

● Frazier is guiding scientists as they test candidates for a one-shot coronavirus vaccine. He also drew attention to the opportunity gap facing minorities. "I don't think I have a choice" but to act as a role model, Frazier, one of only four Black CEOs at Fortune 500 companies, told Bloomberg TV in July.

TOBIAS LÜTKE

CEO, SHOPIFY INC., OTTAWA (2019)

● Shopify became Canada's most valuable company in 2020, its systems underpinning the explosive growth of online retail for non-Amazon transactions as much of America sheltered at home.

JEROME POWELL

CHAIRMAN, U.S. FEDERAL RESERVE (2018)

● Powell oversaw two
March cuts that took
the Fed's key interest
rate to almost zero and
unveiled a program of
bond purchasing and
other measures that
topped an estimated
\$3 trillion. It all added up
to the most aggressive
stimulus package in Federal
Reserve history.

CATHIE WOOD

CEO, ARK INVESTMENT MANAGEMENT LLC, NEW YORK (2018)

● Tech companies led the post-March stock rally, and Wood's bullish bets on the ones shaping the future—Tesla, Crispr Therapeutics, and Slack, for example—saw her ARK Innovation exchangetraded fund double in value this year. Her Ark Genomic Revolution ETF is performing even better.

ERIC YUAN

CEO, ZOOM VIDEO COMMUNICATIONS INC., SAN JOSE (2019)

The videoconferencing platform became critical infrastructure as offices went remote. Zoom's stock price is up more than 500%, swelling Yuan's fortune to \$20 billion.

—Adam Blenford

ONES TO WATCH

Check back in a year, and you may see these people on the previous pages

PAUL ISAAC **MUSASIZI**

CEO, KIIRA MOTORS CORP.. KAMPALA, UGANDA



• The engineer is building Africa's first electricbus factory and aims to have initial manufacturing

capacity of 5,000 vehicles a year. Prototypes are already running as government shuttle buses.

GEOFFREY VON **MALTZAHN**

CO-FOUNDER INDIGO AG INC., BOSTON



 Von Maltzahn wants companies to reduce their carbon footprint. He's won commitments from Shopify,

Barclays, and JPMorgan Chase to buy credits that pay farmers for environmentally friendly practices.

SOJIN LEE

CEO, TOSHI TECHNOLOGIES LTD., LONDON



 Brands including Chanel, Christian Louboutin, and Anna Sui are working with

the former Net-a-Porter exec. whose company hand-delivers clothing-then handles alterations and returns. Toshi also services New York and plans to open in Los Angeles next vear.

MAYA ERSKINE & ANNA KONKLE

CO-CREATORS AND STARS, PEN15



 The duo behind the Hulu comedy series were nominated for a writing Emmy for their show about best friends going through the awkward years of middle school in the 1990s-from getting their

first AOL Instant Messenger screen names to practicing for Spice Girlsthemed school projects.

ZIWE **FUMUDOH**

COMEDIAN AND WRITER. **DESUS & MERO**



 Her uncomfortable but funny Instagram Live conversations on race with celebrities such as Alyssa

Milano led to a Showtime slot.

KWAME ONWUACHI

CHEF AND AUTHOR



 He shuttered his Afro-Caribbean restaurant Kith and Kin in Washington, D.C., during the pandemic, but

he'll be a judge on Top Chef, and his memoir, Notes From a Young Black Chef, is being made into a movie.

TIA ADEOLA

FASHION DESIGNER



The Nigerian-born designer made big ruffles stylish. Instagram influencers and young

musicians such as R&B artist Ebhoni have worn her clothes. And her frilly face masks have been on the pages of Teen Vogue, Self, and Marie Claire.

NATHAN **TANKUS**

WRITER, NOTES ON THE CRISES



● The 29-year-old Tankus, who hasn't finished his bachelor's degree, became a must-read for Wall

Street economists and government officials thanks to his analysis of the Federal Reserve.

JENNIFER O'NEIL

MANAGING DIRECTOR, BLACKROCK INC., NEW YORK



 This summer she helped restructure the debt of Ecuador and Argentina, the latter of which struck a \$65 billion deal with private creditors.

BART STASZEWSKI

FILMMAKER AND GAY RIGHTS ACTIVIST



 He staged protests in Polish towns that had declared themselves free of "LGBT ideology." The

campaign gained international attention, with European Commission President Ursula von der Leven of Germany using her first state of the union speech to denounce anti-gay policies.

ARNON NAMPA

HUMAN-RIGHTS LAWYER



The protest leader was jailed many times this year while heading a movement calling for more

transparency and accountability from the monarchy in Thailand, where criticism of royals is punishable by 15 years in prison.

KATIE PORTER

CONGRESSWOMAN



 The first-term California representative has gone viral with tough questions for business leaders such as former Celgene Corp. CEO Mark Alles over cancer drug costs.

TYLIK MCMILLAN

NATIONAL DIRECTOR OF YOUTH AND COLLEGE AT THE NATIONAL ACTION NETWORK, NEW YORK



• The recent college grad helped organize the March on Washington in August. which drew thousands of

people to protest police brutality against Black people.

VARSHINI PRAKASH

CO-FOUNDER, SUNRISE MOVEMENT, WASHINGTON, D.C.

 The Boston-based activist has rallied youth voters and worked to



elect politicians who take a tougher stance on the fossil fuel industry. Her recent book, Winning the

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Green New Deal, argues for radical action to stop global warming.

PUSHMEET KOHLI

HEAD OF AI FOR SCIENCE, GOOGLE'S DEEPMIND, LONDON



He's using neural networks and other machine-learning techniques to predict

the structure of proteins; this has implications for treating rare diseases, breaking down pollutants, and more.

SARA **MENKER**

CEO, GRO INTELLIGENCE INC., **NEW YORK**



 Her data platform lets food companies and governments map supply and

demand across commodities. When the biggest locust swarm in decades threatened crops in East Africa this year, Gro provided free monitoring tools to track the spread and damage.

ROBERT VIS

FOUNDER, MESSAGEBIRD, **AMSTERDAM**



His software lets companies use a single interface to talk to

customers by text, email, or social media. MessageBird is gearing up for an initial public offering next year.

RISHI SUNAK

CHANCELLOR OF THE EXCHEQUER, U.K.



Sunak won high approval ratings with generous programs to help workers and

businesses during the pandemic. Now comes the trickier part: winding down the support and paying for it all. — Lynn Thomasson



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