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In an age of kale salads and fake meat, McDonald's has a new secret sauce

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◀ Vladimir Putin visits Mongolian President Battulga Khaltmaa in Ulaanbaatar on Sept. 3

B. RENTSENDORJ/REUTERS

FEATURES

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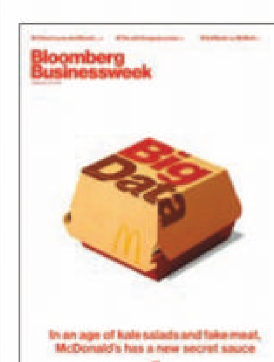

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Photo illustration by 731; photo by Evan Ortiz for *Bloomberg Businessweek*

BREXIT: PHOTOGRAPH BY GUY MARTIN FOR BLOOMBERG BUSINESSWEEK

IN BRIEF

By Benedikt Kammel

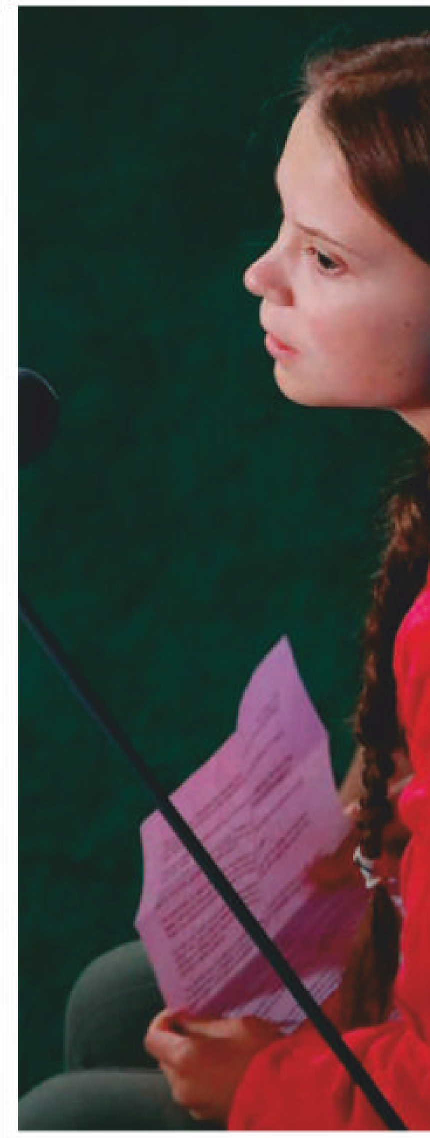
● U.K. Prime Minister Boris Johnson suffered a devastating legal defeat.

The country's Supreme Court ruled that his suspension of Parliament was unlawful, a decision that complicates his plan to pull the U.K. out of the European Union by Oct. 31 without a deal. Johnson said that though he disagreed with the court's ruling, he'd respect it—but still pursue Brexit. ▷ 30

● Uber was granted a two-month license to operate in London. This gives the company a limited window to show regulators in one of its key markets that it's improved governance such as ensuring drivers have appropriate insurance and training. ▷ 19

● Credit Suisse sought to contain a growing scandal over its shadowing of former star banker Iqbal Khan.

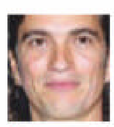
A security firm was tasked with following Khan around Zurich after he'd defected to crosstown rival UBS, taking photos of people he met. The affair has shaken the reputation for quiet professionalism that Switzerland and its wealth managers have long enjoyed.



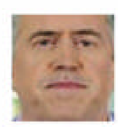
● Swedish environmental activist Greta Thunberg, 16, delivered an impassioned address at the United Nations climate summit on Sept. 23, scolding world leaders for making hollow promises and obsessing only about economic growth.

● After 178 years, U.K. travel company Thomas Cook announced the liquidation of its business. The move left more than 150,000 tourists stranded at their holiday destinations, forcing the government to initiate the biggest repatriation mission in peacetime Britain.

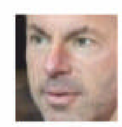
● A bad week for bosses: Three prominent corporations lost their CEOs.



❶ Adam Neumann will depart WeWork following a tumultuous few weeks that saw the co-working company's hopes for a lucrative IPO savaged by investor opposition. In a move designed to salvage the stock listing, Neumann will assume the role of nonexecutive chairman. ▷ 16



❷ Kevin Burns will be replaced at Juul Labs by K.C. Crosthwaite, the strategy chief of Altria, which owns a 35% stake in the vaping company. Altria also said that it's ended talks to reunite with Philip Morris, but that the two companies would jointly focus on IQOS, another smoke-free technology.



❸ Devin Wenig, who's led EBay since it split with PayPal in 2015, is leaving the web auction pioneer, which has been under increasing pressure from activist investor Paul Singer to spin off some of its businesses. Scott Schenkel, the chief financial officer, will take over as interim head.

● "The release of the notes of the call by the White House confirms that the president engaged in behavior that undermines the integrity of our elections, the dignity of the office he holds, and our national security."

House Speaker Nancy Pelosi on Sept. 25, responding to a rough transcript of Trump's July 25 call with Ukrainian President Volodymyr Zelenskiy. In the call, he urged Zelenskiy to investigate former Vice President Joe Biden. Pelosi announced a formal impeachment inquiry the day before.

● German prosecutors charged Volkswagen CEO Herbert Diess with market manipulation, accusing him and two other senior managers of delaying disclosure of the diesel scandal in 2015. As a result, investors were caught off guard when the revelation caused the stock to tank. VW called the allegations groundless.

● Google won a court battle in the EU over demands to make some search engine results disappear globally.

● Facebook plans to buy startup CTRL-Labs, whose software lets people control a digital avatar using only their thoughts.

● The head of Danske Bank's Estonian unit, who went missing on Sept. 24, was found dead a day later, according to police.

● First, Mattel made a curvier Barbie; now children will get to decide the gender of its new Creatable World dolls.

THUNBERG: YANA PASKOVA/REUTERS. NEUMANN: JB LACROIX/GETTY IMAGES. BURNS: YOUTUBE. WENIG: JACOB KEPLER/BLOOMBERG

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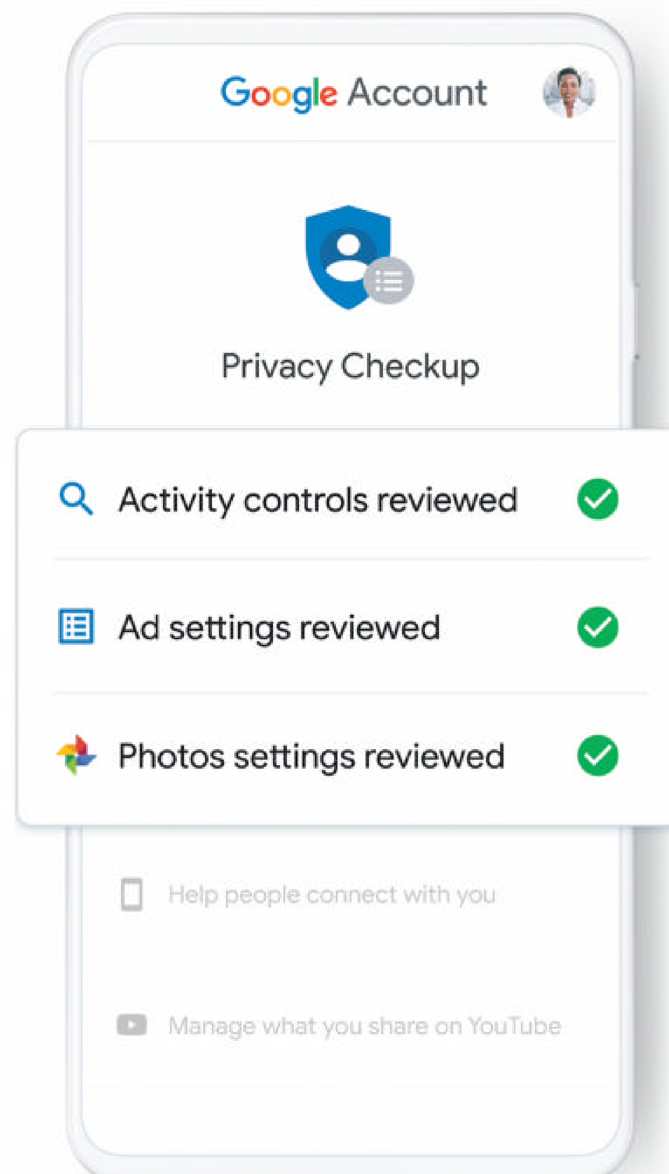

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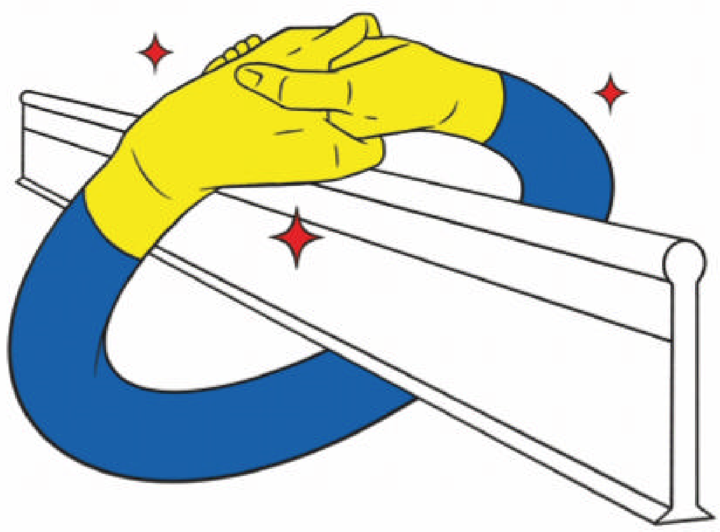

▶ Reunified, But Keeping a Distance

Germany marks the anniversary of its reunification on Oct. 3, with Berlin hosting the main festivities on the Brandenburg Gate square. Almost three decades after the wall fell, the country is still struggling to overcome economic and political divisions between the East and West.

▶ On Oct. 1, General Motors and Ford are set to report quarterly U.S. vehicle sales. Fiat Chrysler and other automakers are posting monthly figures.

▶ Anglo American CEO Mark Cutifani speaks at the Joburg Indaba mining conference in Johannesburg taking place on Oct. 2-3.

▶ Snack and beverage giant PepsiCo reports earnings on Oct. 3. Soda consumption is falling as consumers turn to healthier drinks.

▶ The U.S. releases labor market data for September on Oct. 4. Economists are watching for signs that the world's largest economy is slowing.

▶ India's central bank announces its rate decision on Oct. 4. The bank has already cut borrowing costs four times this year to give the economy a lift.

▶ Stuttgart hosts the 49th Artistic Gymnastics World Championships, with hotly anticipated appearances by U.S. star Simone Biles, beginning Oct. 4.

■ BLOOMBERG OPINION

Meatless—a Day a Week

● Vegetarianism isn't for everyone. But small changes in diet can mean big gains for the climate

Global meat consumption has more than doubled since the 1960s, and production is set to double again by 2050. In one way, that's a good thing–proof that rising incomes are supporting higher living standards in developing countries. But Americans still eat three times as much meat as the global average. For solid self-interested reasons, they and other rich-world diners ought to curb their appetite.

Consider this: Livestock are responsible for 12% of man-made greenhouse gas emissions, more than the aviation industry. Most comes from just one animal: the humble, gassy cow. On a per-calorie basis, cattle are responsible for vastly more emissions than chickens and pigs, in part because their digestive systems produce methane, a potent greenhouse gas. From a climate change perspective, serving roast beef is as bad as driving about 100 miles in the average car.

Cattle also take up a lot of space. In Brazil, swaths of the Amazon have been cleared to make room for ranches using slash-and-burn techniques, releasing huge amounts of trapped carbon. But Brazil is hardly the only culprit: More than a quarter of the Earth's ice-free land is set aside for grazing.

The world's system of beef production is on course to destroy itself. A warming planet is already threatening the food supply. After decades of steady decline, hunger has inched up over the past five years–not coincidentally, the hottest five years on record. If global temperature rises by 2C, scientists predict wheat output will fall 10%, and heat waves will damage other crops that feed humans and animals. Heat stress will reduce meat and milk yields and could kill off thousands of cattle.

Curbing meat consumption voluntarily seems a better bet than letting the industry self-destruct. Most climate scientists agree that eating less meat would help to avert a worst-case scenario. But how much less? If all the world swore off meat, it would cut global emissions by 8 gigatons a year–roughly the same as shutting down 2,000 coal-fired power plants. But if you're not ready to go vegan, just eating less meat would help. Adopting the Mediterranean diet, which includes poultry but limits red meat, would have about the same impact as driving 70 fewer miles each week.

Or you could join the "Meatless Mondays" movement. Despite some backlash from American agribusiness and politicians, hundreds of U.S. schools, businesses, and hospitals–plus thousands of families–have committed to going vegetarian one day a week. Not everyone can or should go meatless, of course. And voluntary action alone won't suffice. Lawmakers need to take the initiative by reining in meat subsidies and encouraging sustainable agricultural practices.

Meantime, if you're fortunate enough to live in a wealthy country with abundant protein, try taking a meat hiatus. Your children–and their children–will thank you. Ⓑ

Written by the Bloomberg Opinion editorial board

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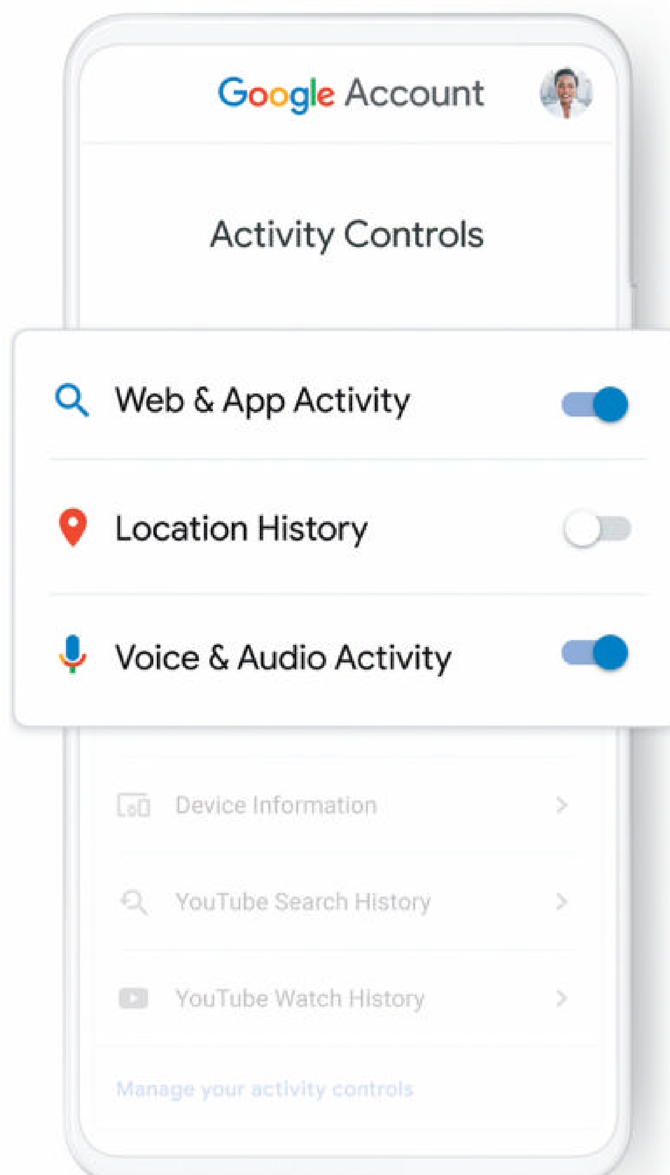

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The Detention of Citizen Krych

● A once-jailed financier says politics has subverted Poland's justice system, and business may pay a huge price

● By Wojciech Moskwa


Krych in a Maybach outside the prison in Sosnowiec where he was held for six months

BARTEK SADOWSKI/BLOOMBERG

An accusation had been made against Przemyslaw Krych, and, at about 9 on the morning of Dec. 19, 2017, he was arrested at his home in Warsaw. The financier was sure there had been a misunderstanding, and, as armed agents of the Polish government took him away in handcuffs, he confidently told his wife he'd be back later in the afternoon.

How could it not be a mistake? Krych was the founder and co-managing director of Griffin Real Estate, which had more than $5.6 billion in assets under management and was a partner in huge local projects with global investment luminaries Pacific Investment Management Co. and Oaktree Capital Group LLC. He carried his success with a swagger, typically explaining his business this way: "Griffin doesn't develop real estate. We buy real estate developers and become the biggest player in the markets we enter." He hobnobbed with powerful politicians and knew what made the government tick. This arrest, he was certain, would be cleared up quickly.

But Krych wouldn't be back in the afternoon to see his wife. In fact, he wouldn't be home for months. He was told the charge involved what appeared to be a 1 million-zloty ($251,000) bribe to Stanislaw Kogut, chairman of the infrastructure committee in Poland's Senate. Krych denied it, saying the sum was part of the total of $550,000 he'd given to the senator's multiple sclerosis charity over more than a decade. This latest amount was earmarked for a new building for kids with autism.

The prosecutors didn't charge Krych with wrongdoing, but they argued he might tamper with evidence if released and demanded the businessman be kept behind bars until he told them what they wanted to know—as Polish law allows. Krych insisted there was nothing to tell. The judge agreed with the government and remanded Krych to a prison in Sosnowiec in southern Poland.

And prison was where Krych says his story, already Kafkaesque, took on the creepy shadings of a horror movie. His ordeal, he says, is a parable of contemporary Poland: how the disruptive behavior and feudal organization of the populist government have corroded the judiciary and are endangering not just civil rights in general but also the stability that businesses need to prosper. "The notion that the authorities respect laws is pure fiction," Krych says.

In Sosnowiec, around February 2018, after weeks in what was effectively solitary confinement, Krych was allowed to take walks around a barbed wire enclosure about the size of a tennis court. One day he was joined by two strangers who kept several steps behind him in the exercise yard but were close enough that he could hear what they were telling him. He says they offered a proposition and a number of threats: Give us dirt on opposition politicians or we will destroy you. The destruction could come in many ways, Krych recalls. Child pornography would be planted in his computer; his 16-year-old daughter would be sent to a treatment facility for victims of molestation; his wife would be arrested for embezzlement. Krych demurred. He said he had no information to trade.

But the two men continued to hound him at the exercise court and beyond. They'd walk into the showers as Krych was bathing, disrobe, and talk among themselves as if he weren't there, discussing details of Krych's life few people would have known. The duo weren't the only people who seemed familiar with Krych's private life. At night, he says, a person nearby would yell out to someone beyond the prison fence, a woman who stood on a hill listening like a bereft lover in a melodrama. But Krych recognized the script of their romance: snippets from letters he was allowed to send his wife from jail, as well as pre-prison family correspondence from his computer and messages from the WhatsApp account on his phone.

The harassment Krych says he endured took other forms. People who appeared to be prison guards—their uniforms sloppily put on, decorated with insignias that changed from day to day—told him to have his belongings ready and packed because he could be moved at any moment to a cell with violent convicts and rapists. He was never relocated.

What did the men want? According to Krych, they were after evidence of corruption among municipal politicians running against candidates of the ruling party. Government prosecutors, the men said, were always ready to strike a deal. The businessman mentioned these encounters to his lawyers, who accompanied him to interrogations by the prosecutor's office in nearby Katowice. But Krych didn't bring it up during questioning; he believed it was pointless because his harassers and the government were on the same side.

The prosecutor's office and Poland's prison agency declined to comment on Krych's description of his treatment. Asked if his accusations might be borne out by surveillance video, the agency said that while recording was routine at the facility, the tapes were erased every two weeks. Prison officials say there's no longer any video evidence of Krych's six-month stay at Sosnowiec. Much of this story is therefore based on what Krych says happened to him.

Krych's detention was supposed to last three months, but prosecutors got the court to extend it another three. Finally, on June 19, 2018, he was released and ordered to report to the local police station every month. He'd be asked at each session to turn over evidence about the alleged bribe, but the proceedings seemed increasingly perfunctory, almost as if the authorities had lost interest in him. "No new ground was covered during the meetings," Krych says. "It was the same questions, which I answered in the same way." In the nearly two years since he was arrested, Krych hasn't been charged with a crime.

(The day after this story ran online, the prosecutor's office said that Krych's arrest was a "judicial decision issued by an independent court after examining the evidence," that he "did not complain about the conditions of his detention," and that his "line of defense" was "completely untrustworthy.")

Since he regained his freedom, he says he's been able to discern the reasons for his detention. Krych is one of Poland's preeminent businessmen, but he believes he was merely a pawn in one of the feuds within the Law and Justice party—specifically a shadowy contest that involved undermining Senator Kogut, the infrastructure committee chairman. ▶

◀ The crux of the prosecutors' hunt for wrongdoing was a proposal to develop a hotel and movie theater complex in Krakow—part of the power base of Kogut, a member of the ruling Law and Justice party at the time. Krych had met Kogut years before the party won an outright majority in 2015 to form a government. (He was among the highest vote-getters in that election.) Beginning in 2006, Kogut's Foundation of Aid for the Disabled was the recipient of $550,000 in contributions from Krych and his companies, or a fifth of all Krych's charitable giving, according to documents seen by Bloomberg. The prosecutor's office alleged that Kogut helped maintain favorable zoning requirements for the planned Krakow complex, and so the contribution could be construed as a de facto bribe. (An audit of Griffin by the U.K. law firm Dentons, commissioned by Krych's company and seen by Bloomberg, said that, apart from a few deficiencies in paperwork, there were no anomalies or "fictitious or misleading entries.")

Krych said at his arrest, and has maintained ever since, that the government allegation was absurd—especially since the Krakow project was the smallest of three that Griffin took over when it bought the developer Echo Investment SA in 2015 and, in fact, he never seriously considered pursuing it. "I would be an idiot to give a bribe for a project with a value of less than €5 million when there's a €5 billion investment portfolio at stake," he says. The property has since been bought by the central government, which may turn it into a museum.

Kogut is no longer the power he used to be. He'd been the chair of the Senate Infrastructure Committee, but, on Dec. 19, 2017—the day of Krych's arrest—the National Prosecutor's Office tried to get the Senate to waive Kogut's legislative immunity to charge him with corruption. Kogut denied the allegations—which were punctuated with news of Krych's detention—and waived immunity to fight the charges. On the same day, Law and Justice suspended him from the party. He resigned as committee chair but stayed on in the Senate after his fellow legislators refused to allow prosecutors to arrest him. He's insisted on his innocence, but his son, who used to run the charity, spent more than a year under arrest on the Krakow allegations, which he denied. Kogut, who plans to run as an independent in October's legislative elections, declined to comment.

Several weeks after Krych's release, the businessman says, he received a message from Adam Hofman, a public-relations executive who used to be a ruling party lawmaker. After agreeing to leave their mobile phones behind, Krych says, they took a walk in Lazienki Park in central Warsaw. According to Krych, Hofman said the real estate magnate was a victim of a power struggle within the party. Politicians close to Zbigniew Ziobro, the minister of justice, wanted to reduce Senator Kogut's clout in the Krakow region to promote one of their own allies, hence the probe into the charity. According to Krych, Hofman suggested he have dinner with Ziobro to talk over the situation. Krych says he declined.

Hofman tells Bloomberg he talked with Krych in the park but the meeting wasn't his idea. He says he knew Krych from previous work together (a claim Krych denies) but that, after listening to Krych's story, he didn't see any opportunities to do more business and they never met again. He says he delivered no message to Krych and he wasn't sent by anyone. Ziobro's office didn't return requests for comment.

Infighting among centers of power is a trademark of the Law and Justice government. Its decentralized organization encourages it, with its de facto leader Jaroslaw Kaczynski having no official role other than rank-and-file lawmaker. The party is itself an agglomeration of several preexisting political groups, including one led by Ziobro. Cabinet changes can have dramatic effects, including the sacking of executives at state-controlled companies, the top posts of which are often treated as sinecures for allies of powerful politicians.

In the past couple of years, Law and Justice has ignored the highest courts and passed legislation boosting the sway of politicians over the judiciary. The party has combined the job of justice minister—usually a political appointee—with that of chief prosecutor, who'd been politically neutral. The pursuit of justice has thus become a tool that "belongs to a single political party," says Krzysztof Parchimowicz, a prosecutor who heads a group that says it's fighting to maintain the profession's autonomy. Much concern has been raised about the law that allows for temporary detentions without formal charges. The number of such jailings has risen steadily, from 13,665 in 2015 to 19,655 in 2018, according to the Helsinki Foundation for Human Rights, Poland's largest human-rights watchdog. Last year the European Court of Human Rights issued rulings against Poland in three cases involving temporary detention.

For businesses, the justice system is a minefield. "There's a very serious risk when the prosecutor's office can step into business affairs at any time and with any arbitrary reason," Parchimowicz says. "The bigger the role of the state prosecutor, the less room for economic freedom and the more damage to the creativity needed for business."

When he was thrown into jail, Krych asked for a broom and mop to clean his cell. He'd resigned from all his positions at Griffin at his arrest and was therefore heartened it continued to operate neatly and efficiently without him. It concluded one of Poland's biggest real estate deals—one worth about €1 billion ($1.1 billion)—while he was incarcerated. He was also happy that Pimco and Oaktree stuck by him. Both companies—bound by the rigorous U.S. Foreign Corrupt Practices Act—had a stipulation that allowed them to abrogate their contract with Griffin for lack of compliance. They chose not to activate the escape clause.

About a year after his release, Krych went in a leased Maybach to outside the prison in Sosnowiec to show a reporter where he said he'd been mistreated. He didn't flinch as guards started filming him and his entourage. "What happened here," he said, "poses a risk that everyone who's considering investing in Poland should be aware of." He also related a recent conversation at one of his monthly sessions in the prosecutor's office. Asked what he was up to, Krych said without emotion, "Pursuing business interests outside Poland." Ⓑ —*With Marek Strzelecki*

Where the Doctor Is Always In

Chinese companies roll out subscription apps to connect patients and physicians anytime

On the second floor of a new office building in downtown Beijing, rows of people with headphones sit five abreast, typing furiously. Dressed in jeans and T-shirts, they could easily be mistaken for office clerks or call-center workers—except for the white coats over the backs of their chairs and signs hanging overhead that read: "Internal Medicine," "Pediatrics," "Gynecology," "Obstetrics."

In one corner of this sprawling office sits Liu Sainan, a 47-year-old neurologist. In March, after 16 years at a top Beijing hospital, she joined Shanghai-based Ping An Healthcare & Technology Co., which runs the Ping An Good Doctor app. These days she treats patients via online messaging through the app, juggling as many as 10 people at once. Patients can also send pictures of symptoms, such as bruises, or their test results.

Good Doctor, which is backed by the country's top insurer, Ping An Insurance Group Co. of China Ltd., started a yearly subscription service in August that offers online medical consultations with senior doctors. Users pay an annual fee of 499 yuan to 1,999 yuan ($70 to $280) to consult specialists about everything from hypertension to the digestive problems of newborns—anytime and from anywhere.

The business is an attempt to remake China's overstretched health-care system for the internet era. The country's technology industry has already transformed the way consumers shop, hail taxis, and order takeout meals. Now companies from Good Doctor to Alibaba to Tencent are attempting to do the same with health care. Their hope is to use digital services to reach patients frustrated with a public-health system that's having trouble meeting demand for treatment during a national epidemic of cancer, diabetes, and heart disease.

Online health care in China is poised to explode into a 198 billion-yuan business by 2026, or almost 20 times its 2016 size of 11 billion yuan, predicts researcher Frost & Sullivan. "Everyone in the business is exploring, and investors are watching, to see how internet health-care companies can make a profit," says Good Doctor's chief executive officer, Wang Tao. "We've figured out clearly that family doctor [service] will be the driver."

Wang says his company aims to sign up 10 million families in the next five years and generate 10 billion yuan in annual revenue from them. That's three times the company's 2018 sales of 3.3 billion yuan, most of which came from online sales of health-care products and supplements. The company expects to become profitable by 2021.

Across a busy street from Good Doctor's Beijing office stands the more than 100-year-old Beijing Tong Ren Hospital, renowned for its ophthalmology and ear, nose, and throat departments. On a recent weekday, the ground floor of the outpatient building was teeming with people lining up to get an appointment with specialists. A search on a kiosk nearby showed that appointments for some senior doctors required a month's wait.

"Top hospitals in China are always crowded, and the experienced doctors there are preoccupied with treating basic diseases, whereas basic-level hospitals are underused," says Sharry Wu, a Shanghai-based partner at Ernst & Young. "While government is making policies to guide patients to different tiers of health care, internet companies can help implement that through telemedicine."

Still, there are limitations on what a doctor can do in cyberspace without meeting a patient. Among other regulations on cybermedicine, China doesn't allow doctors to make an initial diagnosis via an online consultation, instead permitting only follow-up consultations and prescriptions, which can be with a different physician. "This is still an emerging area," says Leon Qi, regional head of Asian financials research at Daiwa Capital Markets Hong Kong Ltd.

China has an acute need for new health-care models. It adds almost 4 million cancer patients each year. It also had 114 million diabetes patients in 2017 and 290 million sufferers of heart disease last year—all among the world's highest numbers.

People cram into large public hospitals—which usually have the best doctors—for everything ▶

Edited by James E. Ellis and David Rocks

ILLUSTRATION BY WENKAI MAO


血压：
呼吸：
心率：

◀ from simple colds to life-threatening cancers. And many of the best ones are in the more developed eastern part of the country, often many hours away from rural families. While there's a top hospital for about every 550,000 people in Beijing or Shanghai, in the country's western hinterland there's just one for every 2.5 million people, according to data compiled by brokerage CSC Financial Co.

Several technology companies are jumping in to fill that gap. WeDoctor, backed by Tencent Holdings Ltd., said its online platform can potentially connect more than 200 million users to doctors from hospitals across the country. Alibaba Group Holding Ltd.-backed Alibaba Health has signed up some 15,000 senior doctors to offer health consultation services via the internet for users of its online retail marketplace and its payment app Alipay.

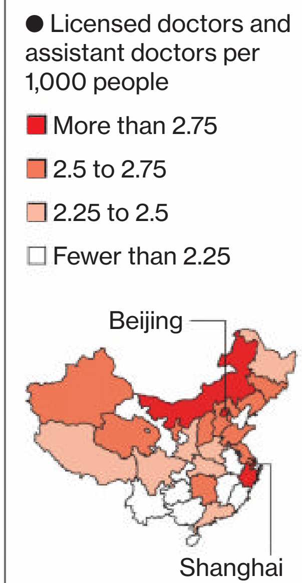
Despite widespread interest in online medicine, investors are still waiting for results. Good Doctor shares have declined 15% since its initial public offering last year. Other health-tech outfits have also had a choppy year, with Alibaba Health's shares sliding 8% over the past 12 months, double the 4% drop of the Hang Seng Index.

The industry could eventually get a boost from government policies. Beijing has taken some steps to make it easier to get public insurance reimbursements for some online health-care services, though local governments can decide what will be covered. And Good Doctor has already begun exporting its model overseas. It's set up joint ventures with Singapore's Grab Holdings Inc. and Japan's SoftBank Group Corp. to offer online treatment consultation services in Southeast Asia and Japan.

Wang says Good Doctor has already hired about 100 doctors in China from well-known hospitals, offering annual compensation that can exceed 1 million yuan as well as stock options—a decent wage for mainland doctors. But delivering care over the internet can take some getting used to. "Senior doctors tend to be more prudent, and if I can't see or touch the patient, it's hard for me to definitively tell the patient's condition, but I still have to offer clear advice to them," says Liu, the neurologist. "It takes a lot of experience on the part of the doctor."

Still, Liu says the service has an advantage traditional hospital consultation can't rival: Patients can stay in touch easily with their doctors rather than wait months for the next available appointment. "The internet," she says, "brings patients and doctors closer." —*Dong Lyu and Lulu Chen*

THE BOTTOM LINE As China experiences big increases in diabetes, cancer, and heart disease, long waits for specialist visits are common. Operators of doctor apps want to close the gap.



A *Flyin'* Shame

● Airlines are under pressure as business travelers fret about the carbon cost of flights

To celebrate raising $460 million in new capital, finance startup Klarna Bank AB invited 600 staffers from its Stockholm headquarters to Berlin for a party in September. But instead of heading to the airport for the 90-minute hop to the German capital, the programmers, managers, and salespeople showed up at Stockholm's Central Station for a 15-hour schlep by train and bus. The company, which offers online payment services, bars virtually all employee air travel within Europe and discourages longer-distance flights. "It's our aim to become carbon neutral," says Robert Bueninck, chief of Klarna's business in Germany, who frequently rides the rails on business trips to Brussels, London, and elsewhere. "We know what's happening to our planet."

Like Klarna, companies across Europe are reconsidering travel policies, and individuals are asking whether jetting off to sunny spots for holidays is worth the environmental cost. The Swedes even have a name for it: *flygskam*, or flight shame, and it's a growing threat to airlines in Europe and beyond. SAS AB says its traffic fell 2% in the nine months ended July 30 from the year-earlier period, and Sweden's airport operator has handled 9% fewer passengers for domestic flights this year than last. Both say flygskam has played a role in declining traffic. "Unchallenged, this antiflying sentiment will grow and spread," says Alexandre de Juniac, head of the International Air Transport Association. "Politicians aren't sticking up for us."

In France, where the *#avihonte* (aviation shame) hashtag is trending, some lawmakers have proposed a ban on most internal flights. Austria's state railway—Europe's leading provider of international sleeping car service—has ordered 13 new sleeper trains, saying the move was spurred by increased demand for overnight travel because of environmental concerns. Germany plans to cut taxes for train


● Lufthansa's Spohr

SPOHR: GETTY IMAGES. DATA: CHINA STATISTICAL YEARBOOK 2018 journeys by almost two-thirds while boosting levies on flights and establishing a minimum level for airfares. “We’re going to increase the cost of flying and make train tickets cheaper to reflect the cost of carbon dioxide emissions,” German Finance Minister Olaf Scholz said in announcing the measures.

Airlines this year will pump almost 1 billion tons of carbon dioxide into the atmosphere. And the United Nations says aviation is on track to overtake power generation as the single biggest emitter of CO_2 within three decades. Surging green parties, groups such as Greenpeace and Extinction Rebellion, and activists like 16-year-old Swedish environmentalist Greta Thunberg are fueling the flight-shame movement by highlighting aviation’s role in global warming. “How dare you pretend that this can be solved with just business as usual and some technical solutions,” Thunberg, who travels Europe by train and took a sailboat to New York, told the UN’s Climate Action Summit on Sept. 23. “You are failing us.”

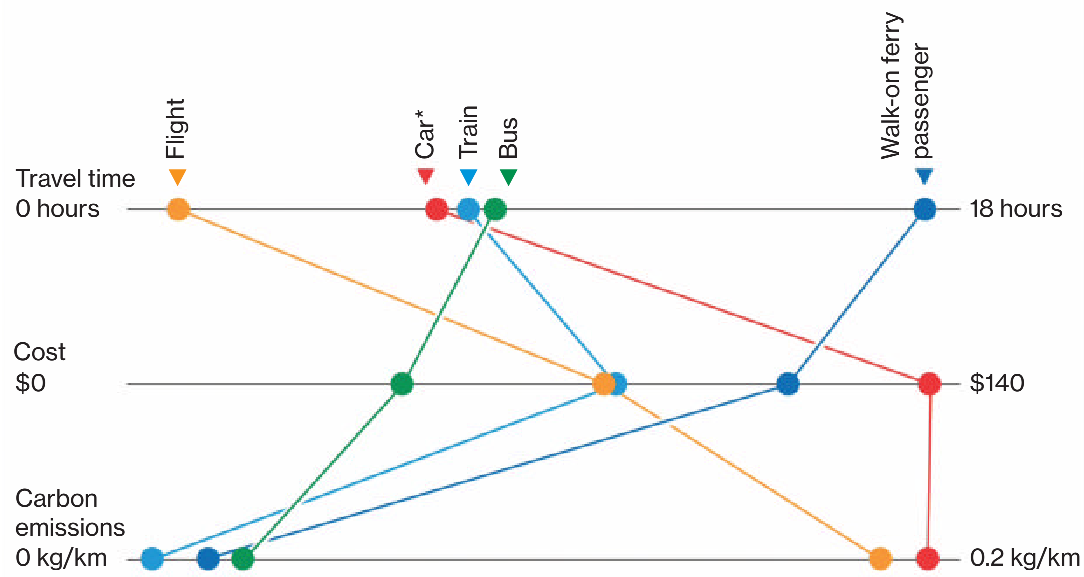
The danger for airlines is growing as companies cut back on business travel. Finland’s Nordea Bank Oyj aims to trim flights 7% this year and plans internal carbon fees to meet that goal. German broadcaster Tele 5 in June said it will no longer pay for domestic flights for its 60 employees. Consulting company PwC and Switzerland’s Zurich Insurance Group AG say they want to reduce carbon emissions per employee by a third or more from 2007 levels, mostly by cutting back on flights. “More of our meetings are taking place in virtual space,” says Alison Martin, Zurich’s chief executive officer for Europe, Africa, and the Middle East. “Flying isn’t a prerequisite for getting business done.”

European carriers are at the greatest risk because they often fly short distances, and high-speed rail is a viable alternative. While it takes more than 19 hours to travel the 800 miles from Chicago to New York on Amtrak, a European can cover a similar distance from London to Marseille in a bit more than six hours. For airlines, the concerns couldn’t come at a worse time: Brexit jitters are hitting consumer confidence in Britain, the region’s biggest aviation market. And more than a half-dozen European carriers have gone bust in the past two years as they grapple with falling fares, slowing economies, rising fuel costs, congested airspace, and extreme weather.

To burnish its green credibility and mitigate concerns about flying shame, KLM Royal Dutch Airlines is even discouraging travelers from boarding its jets—at least sometimes. “Railway or other modes of transportation can be more sustainable than flying, especially for short distances,” the company, which focuses on long-haul flights, said in ads this summer. In August, Deutsche Lufthansa AG CEO Carsten Spohr lashed out at no-frills carriers, telling Bloomberg Television that supercheap fares stoke demand for needless travel and make the industry an easy target for climate campaigners. “I don’t think tickets for €4.99 serve any purpose,” he said. Ryanair soon dispatched an email to customers in Germany, saying Spohr’s remarks highlight its rock-bottom prices—and low emissions per passenger because of its tightly packed planes. “We’re very happy with the comparison,” says Kenny Jacobs, Ryanair’s chief marketing officer.

Getting From Oslo to Copenhagen

Travel statistics per passenger

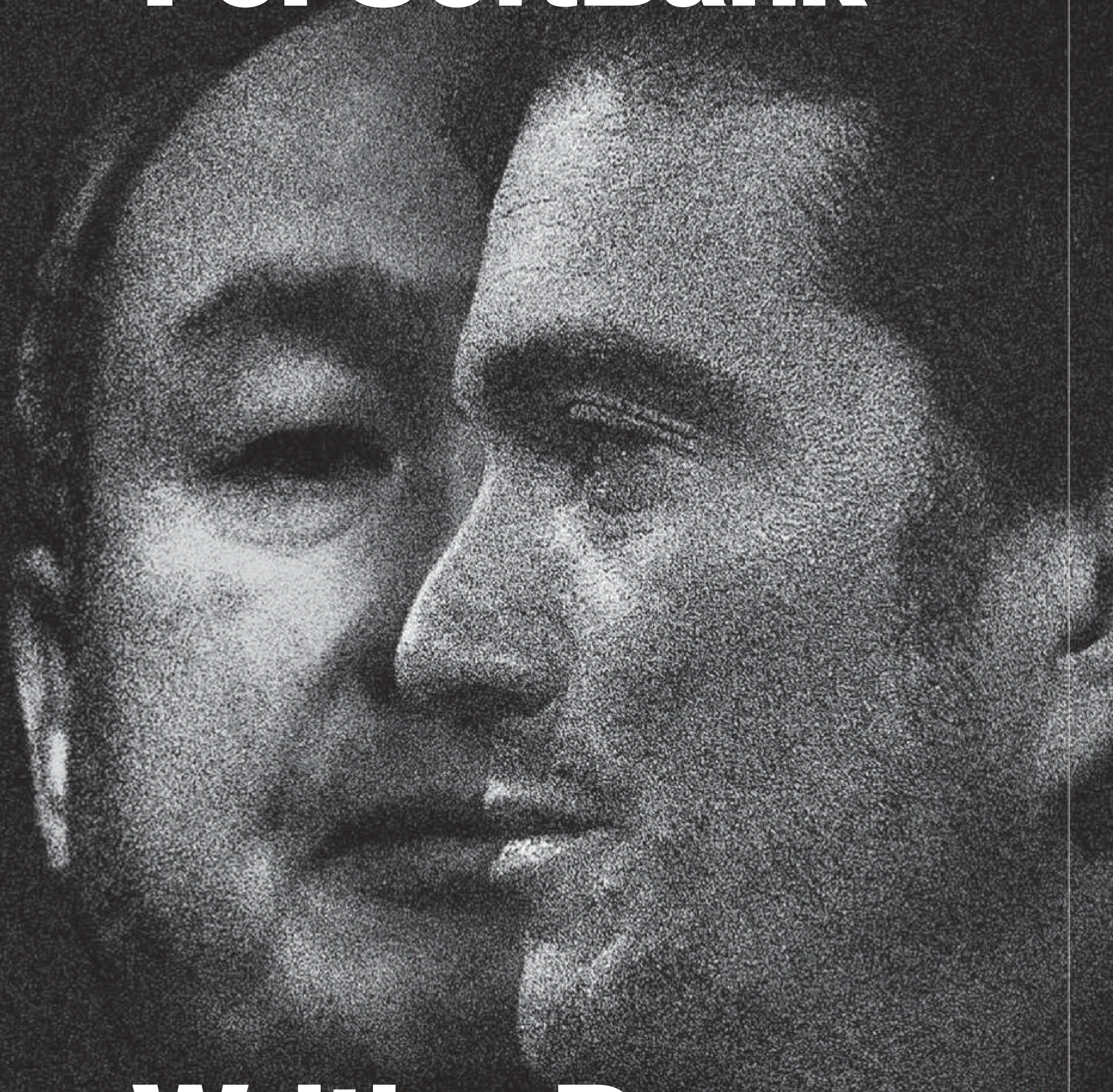


*MIDSIZE GASOLINE-POWERED CAR WITH DRIVER ONLY
FLIGHT CARBON EMISSIONS INCLUDE RADIATIVE FORCING, A MEASURE OF THE ADDITIONAL ENVIRONMENTAL EFFECTS OF AVIATION.
DATA: U.K. GOVERNMENT, VIAMICHELIN, DFDS SEAWAYS, STATENS JARNVAGAR, FLIXBUS, GOOGLE FLIGHTS

It’s hard for airlines to push back, as there’s little they can do to reduce their carbon footprint. While manufacturers have introduced more efficient jets in recent years, CO_2 output per passenger mile remains at least quadruple that for trains. And thousands of older models are in service because planes typically fly for decades before being retired. Carbon offsets—paying someone to plant trees or otherwise reduce or absorb CO_2—can help ease passengers’ conscience, but few people use them, and every flight still creates tons of carbon dioxide. With breakthroughs such as electric or hybrid jets unlikely to see commercial service before the 2030s, a quick technological fix for the CO_2 problem is improbable, says Tim Clark, CEO of Emirates. “In the next couple of decades, we might see some short-haul aircraft” with hybrid engines, he said at a September conference in London. “But with long-haul, it’s much more difficult.” —*William Wilkes, with Stefan Nicola*

THE BOTTOM LINE Airlines have few options as even the newest aircraft emit far more CO_2 than trains, and electric or hybrid jets won’t likely enter commercial service for almost two decades.

The Case For SoftBank



Writing Down WeWork

Masayoshi Son must decide whether to write down SoftBank's 29% stake in the startup

Edited by Rebecca Penty and Dimitra Kessenides

We'll soon find out if SoftBank founder Masayoshi Son is a tech visionary or a genius in financial engineering. He started the $100 billion Vision Fund barely three years ago, and SoftBank is already making good money from asset management. In the fiscal year ended in March, more than half of SoftBank Group Corp.'s operating income came from unrealized valuation gains of investments it made via the Vision Fund, eclipsing earnings from core operations such as its domestic telecommunications.

But now SoftBank has a problem: WeWork. The initial public offering of its parent company, We Co., is being delayed, and when it does occur, the stock market may value the company at as little as $15 billion, about one-third of the $47 billion valuation it had when Son last put money into the company. As the September quarter draws to a close, SoftBank will need to decide whether to write down the value of its 29% stake in WeWork. A representative for SoftBank declined to comment.

Fair-value accounting rules do give venture capital firms a lot of leeway in pricing their investments. There is no true mark-to-market number for WeWork, because its shares aren't publicly traded. There are no publicly listed peers SoftBank can benchmark to, either, because Son's unicorns are all unique. He could use an income-based accounting model to justify his price tag, arguing that WeWork's business outlook hasn't really changed.

But that wouldn't be prudent. WeWork and Uber Technologies Inc. are the two highest-profile unicorns the Vision Fund has bought into, and by now, the whole world knows Son overpaid. SoftBank's books look a bit like the emperor has no clothes. People may think he has something to hide if he doesn't update WeWork's valuation. "Fair value should be affected by a failed IPO," so Son should be preparing for a writedown, says Allen Huang, associate professor of accounting at the Hong Kong University of Science and Technology.

Not to mention that consistency is important in fair-value accounting. In the past, SoftBank has been quick to write up its startups' stakes—even if the so-called fair value was based only on later funding rounds—so it should be responsive with a writedown, too. For example, in the June quarter, SoftBank booked 408.5 billion yen ($3.8 billion) in unrealized gains, partly because of its investment in Indian hotel chain Oyo, whose valuation had doubled from $5 billion in September 2018 to $10 billion. Analysts have already raised eyebrows: The biggest investor at Oyo's latest funding round was its own founder, Ritesh Agarwal, whose share purchase was financed by a group of Japanese banks that also count the debt-laden SoftBank as one of their biggest clients. Refusal to report the valuation loss on WeWork would only raise more concerns about corporate governance.

And embarrassingly, a realistic value for WeWork right now would be even lower than the $15 billion that's floating around on Wall Street. That figure is based on a successful IPO, which would generate $3 billion from share sales and be accompanied by $6 billion in loans that are contingent on a listing. Without an IPO, will SoftBank be able to arrange the $9 billion WeWork needs to reach its full potential? If not, its valuation should be lower. We're staring into billions in losses. Since January 2017, SoftBank, directly and through its Vision Fund, has invested into the startup at an average valuation of $24 billion, according to estimates from Bernstein Research analyst Chris Lane. So if, say, the fair value of WeWork drops to $15 billion, SoftBank could face up to $2.8 billion in writedowns, practically unwinding the unrealized valuation gain it recorded in the quarter ended in June.

Of course, Son could choose to not write down the value at all. But he runs a venture capital fund, and we all understand that not every investment needs to be successful. Fair value of such a fund goes up and comes down. If the Vision Fund's value only rises or is somehow kept eerily stable, then investors may have questions about the credibility of its accounting. —*Shuli Ren, Bloomberg Opinion*

THE BOTTOM LINE Wall Street's shrinking valuation of WeWork is forcing SoftBank to confront the fair valuation of its investment—or face questions about corporate governance.

● WeWork's valuation when Son made his most recent investment

$47b

● What investors are estimating the business is now worth

$15b

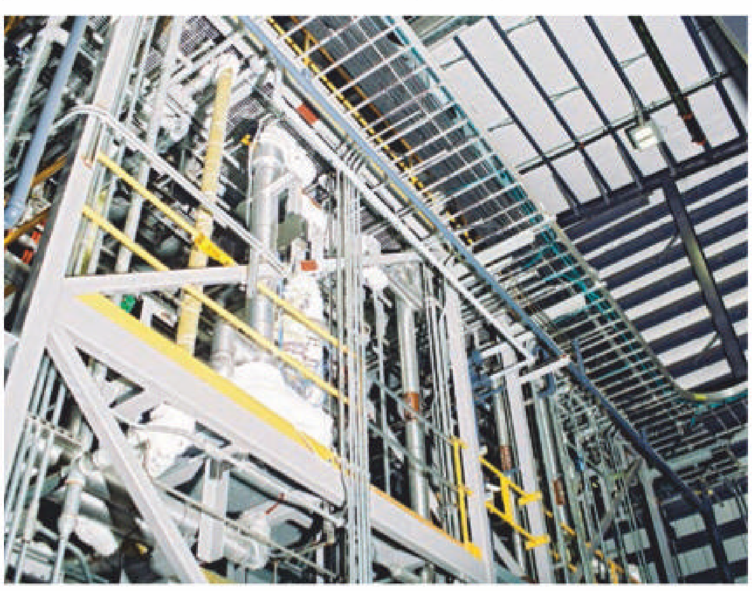
Recycled Plastic You Can Use

● Procter & Gamble has found a way to clean polypropylene so more can be recycled

In the U.S., more than 25 million tons of plastic a year ends up in landfills. Polypropylene—the rigid plastic favored for deodorant containers and shampoo bottles—is one of the biggest culprits. Just 3% of it gets recycled—compared with about 29% for polyethylene terephthalate soda bottles—because of technical problems. Now a scientist at Procter & Gamble Co. thinks he's solved them.

It's difficult and expensive to rid recycled polypropylene of the smell of the product it housed ▶

PHOTO ILLUSTRATION BY 731; PHOTOS: BLOOMBERG, GETTY IMAGES

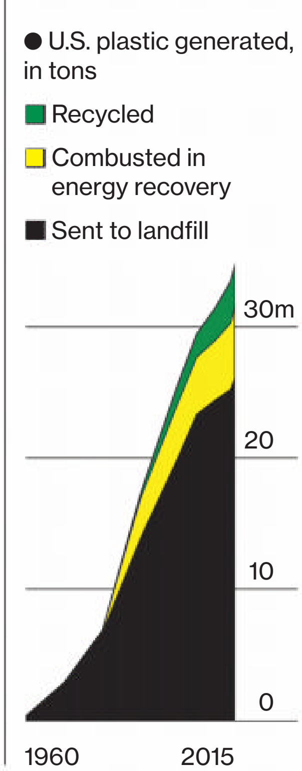


From top: A worker checks finished, clean polypropylene resin; the PureCycle feedstock evaluation unit; bales of old carpet set to be processed

in its first life. Some scents are particularly offensive, such as gasoline or moldy yogurt. And the recycled material ends up black or gray, which makes it tough to reuse in packaging, so it often ends up hidden away from the consumer's eye inside park benches and auto parts. "We really want to maximize the amount of recycled plastic we can use, but there's a psychology to this—we signal to consumers safety and cleanliness with our products, so we can't sell stuff that is in gray or black bottles," says John Layman, a polymer chemist at P&G in Cincinnati who's been working on boosting polypropylene recycling for a decade.

Layman long focused on a sandwiching technology that's allowed P&G to place recycled plastic between layers of virgin plastic in Tide laundry detergent bottles since the 1970s. At best, that technique brings the amount of recycled material in a bottle to about 25%, and it doesn't work if you're trying to make a product in an injection mold—like a toothbrush.

Around 2010, Layman turned his attention to cleaning up the polypropylene. He says he developed a process that purifies the plastic at the molecular level to produce clear, odorless, nontoxic pellets that can be used to make a 100% recycled bottle. The system requires only about



one-seventh of the energy used to make virgin polypropylene.

Procter & Gamble, wanting to get the product to market quickly, licensed Layman's technology to a startup backed by Gregory Wasson, former chief executive officer of Walgreens Boots Alliance Inc. The company, now called PureCycle Technologies, deployed the process at a commercial scale for the first time in July at its $300 million plant in Hanging Rock, Ohio, where it expects to be able to process 119 million pounds of plastic waste a year.

PureCycle has signed contracts with P&G, Milliken, Nestlé, and L'Oreal to produce the plastic and has presold more than 20 years of output from its first plant. PureCycle says it hopes to expand to other cities in the U.S. and Europe in the next few years.

The company has found a way to run almost any product made with polypropylene through the process, so it can use materials most traditional waste haulers won't attempt to recycle. It's run broken hangers, old carpets, and even a disposable diaper through the cleaning process in trials to test how it works with hard-to-recycle products, and found it still produces pristine, clear plastic. The company is focusing on recycling carpets for now. "Part of the reason this waste hasn't been collected before is because there weren't consistent acquirers of that waste stream," says CEO Mike Otworth. "We hope to change that–as long as it's got a high percentage of polypropylene, we'll be able to clean it up." —*Emily Chasan*

THE BOTTOM LINE Consumer giants have struggled to use ugly, smelly recycled polypropylene. Technology developed by Procter & Gamble promises to fix the problem.

Uber Returns to Brazil's Favelas

● The company is tailoring its service for one São Paulo neighborhood with help from local residents

On a hot afternoon in early September, fruit seller Cosmo dos Santos Araujo sits in his usual spot in front of the public hospital in Vila Heliópolis, the largest of São Paulo's *favelas*. He's feeling good about the past five months, when business was better than ever. Sales started to rise almost immediately after Uber in March installed a new pickup point next to his fruit stand. "I've been here for five years, and sales definitively have improved," he says, holding his young daughter as he reaches over to an Uber driver to hand him a slice of watermelon.

Ewelyne Luis Santos Maciel, a cleaning woman, is waiting for a ride home to Vila Moraes four kilometers (2.5 miles) away. Before the pickup location was established, she says, visiting relatives in the neighborhood was much harder.

Uber is making another attempt to set up shop in Brazil's poorest neighborhoods. Getting people like Araujo and Maciel on its side is a crucial part of the effort. In number of rides, São Paulo is Uber Technologies Inc.'s biggest market worldwide, according to the company. Poor neighborhoods and suburbs, including favelas–where transportation options are limited and overcrowded and car ownership rates are low–represent a big opportunity. "Favelas are a giant market, and in Brazil alone $20 billion in revenue circles inside these communities every year," says Pedro Sampaio, Uber's social impact manager in Brazil and head of the Heliópolis project.

But these neighborhoods also present challenges for a company that from its earliest days has grappled with driver and passenger safety problems. Uber first entered Brazil in 2014. Two years later, a wave of attacks against drivers resulted in at least 16 deaths, according to Mike Isaac, author of *Super Pumped: The Battle for Uber*. Uber started blocking favelas as a pickup/dropoff option on its app. That created the perception that it was discriminating against those living and working in the favelas. As great as the opportunity in the favelas is, the company says it had to figure out a better way. Uber declines to comment on the figures reported by Isaac in his book; it acknowledges that neighborhoods with a high percentage of unfinished rides remain blocked, including most of Brazil's slums.

More than 10 million Brazilians live in favelas, where gangs backed by organized crime control large swaths of territory. Armed drug dealers thrive on the favelas' curved streets and in badly lighted alleys. Most of those living in the neighborhoods ▶

PHOTOGRAPHS BY ANDREW SPEAR FOR BLOOMBERG BUSINESSWEEK. DATA: ENVIRONMENTAL PROTECTION AGENCY

◀ are in low-paying jobs as workers in factories, small shops, or services such as housecleaning. Several hundred fill the streets most mornings in Heliópolis, queuing up for public buses and crowding around a subway station.

The pilot is a partnership between Uber and United Central of Favelas, or Cufa, a favela economic development organization. Uber executives, working with local leaders and residents, mapped Heliópolis and identified eight virtual pickup points, including a church and a public school, and a physical spot next to the fruitstand that's outfitted with a bench and a Wi-Fi connection—all deemed safer for drivers and customers.

"Their drivers were afraid," says Cufa President Celso Athayde. "Uber had to go into the favela, talk to the residents." Gathering feedback helped the company "better tailor its service," he says. For example, it created a pared-down version of its app so that it could work on smartphones with less memory. The residents may be poor, Athayde says, but they're willing to spend on things they need, such as transportation, as long as it's affordable and especially if it helps the economy of the favela.

In addition to identifying the pickup locations, posters with the slogan "Tem Uber" ("There's an Uber") were plastered around the community. They feature a "Made in Heliópolis" logo. Local businesses were in charge of developing the marketing campaign. Greater involvement, Athayde advised Uber, would help create more trust and educate residents about the company and its business.

"This wasn't only a mobility project, but a social inclusion one," says Uber's Sampaio. "We also had an 'Uber expo' in the favela with partners such as car rental companies to help attract potential drivers." The company has also sponsored soccer and arts events in the neighborhood.

Drivers say they feel more secure driving to designated pickup spots. "I don't go to certain areas of the favela," says Cezar Nascimento dos Santos, who lives in Heliópolis and has driven for Uber for two years. He also doesn't work on Sunday mornings, he says, when people head home from the *fluxo*—informal parties that bring thousands into the streets of the favelas.

Because each community is unique and the Heliópolis project was so "artisanal," Sampaio says, Uber still hasn't decided how it will replicate the project in other favelas. "It's not like a cake recipe that we can do over and over again." —*Fabiola Moura*

THE BOTTOM LINE Attacks on drivers, resulting in more than a dozen deaths three years ago, led Uber to block service in some favelas. It's now ready to try to tap into that market again.

◀ For more information on the future of transportation, go to Bloomberg.com/hyperdrive

▼ An Uber pickup point in the São Paulo favela Vila Heliópolis

JESSICA NOLTE/BLOOMBERG

The Future of Bond Managers

● Like stockpickers before them, bond fund stars will face tougher competition from indexes

Investors are fleeing actively managed stock funds in favor of index funds. Active bond funds may be next.

Academics have understood for decades that stockpickers are unlikely to beat their benchmark indexes after fees, but investors' reaction was delayed. They kept handing equity managers money. From 1993 to 2007, actively managed stock mutual funds boasted net inflows every year except one, according to Morningstar Inc.'s earliest available numbers.

There were three notable reasons why investors stuck with stockpickers as long as they did. First, the best-known index funds merely tracked the broad market—so investors who wanted exposure to specific styles of stockpicking, such as focusing on hard-luck "value" companies or smaller firms, were drawn to active funds. Second, the mutual fund industry persuaded many investors that stockpickers would better protect their money during downturns than index funds. Third, and perhaps most consequentially, the industry promoted star managers such as Peter Lynch and Jeffrey Vinik of Fidelity Magellan, Bill Miller of Legg Mason Value Trust, and John Neff of Vanguard Windsor. The message was unmistakable: Successful investing came down to hiring hotshot managers.

Then the 2008 financial crisis seemed to change everything. Stockpickers, including some of the brightest lights, suffered as badly as index funds or worse. The stage was set for a revolution, and investors revolted. They've pulled $1.5 trillion from actively managed stock funds since 2008 through July while putting $2.7 trillion in index funds. For the first time ever, there's more money invested in U.S. stock index funds than actively managed ones, after accounting for estimated fund flows in August.

Meanwhile, active bond managers have continued to prosper. Investors have put roughly $160 billion more into actively managed bond funds than into bond index funds since 2008. As of July, active bond managers oversaw $2.2 trillion more than bond index funds did. It's not as if active bond managers stand a better chance of beating their benchmarks than stockpickers. S&P Dow Jones Indices tracks the performance of active managers in its biannual Spiva U.S. Scorecard, and the results are never flattering. The most recent report shows yet again that the overwhelming majority of bond managers failed to keep up with their benchmarks over periods of five years or longer.

So why are investors clinging to active bond managers even as they dump stockpickers? The

PHOTO ILLUSTRATION BY 731. PHOTOS: GETTY IMAGES (2). ALAMY (1). DATA: MORNINGSTAR

Edited by Pat Regnier

reasons are not unlike those that once kept them in active stock funds. The industry has persuaded people they need an active manager to navigate bond markets, many of which are less liquid and more opaque than stock markets—and less well-understood by ordinary investors. And star managers still burn brightly in the bond world.

Those selling points will soon evaporate, however. And it may not take a crash in the bond market. Look more closely at what happened to active stock managers, and you'll see it wasn't just the miserable experience of 2008 that drew investors away from them. A burgeoning industry of exchange-traded funds began to offer investors a wide variety of low-cost index portfolios that approximate popular styles of active management. (I use some of these funds in my own asset-management business.) You have a lot more choice than an S&P 500 fund. You can buy just the value stocks on the S&P. Or the ones with high dividends. Or an index fund that's tilted to stocks with a variety of characteristics that a stockpicker might favor, such as momentum in recent price gains or high-quality earnings.

This allows investors to compare a manager to an index fund that has a similar investing style. Then they can discern how much of the manager's outperformance is attributable to skill and how much to simply being in the right style at the right time. In that light, even the great star managers of the past might look a little more earthbound. Lynch's fondness for buying high-growth companies at a reasonable price, for example, was a winning formula in the 1980s. But what if there had been an index fund for that?

Bond markets are becoming increasingly automated and liquid. That's paving the way for more specialized bond index funds, such as those investing in lower-quality or more esoteric bonds than the ones reflected in broad market benchmarks.

It's telling that some of the best-known and successful bond managers have eclectic styles—it's hard to stand out if you're mainly investing in Treasuries and high-quality bonds like everyone else. Consider Dan Fuss of Loomis Sayles Bond Fund. The fund easily outpaced the return of its benchmark index, the Bloomberg Barclays US Government/Credit Index, from its inception in 1991 through August. But Fuss's benchmark is a poor proxy for his strategy. He has a penchant for junk bonds and occasionally stocks, which are riskier than most bonds. Fuss acknowledges as much—he says existing benchmarks don't capture what the fund aims to do.

Jeffrey Gundlach's DoubleLine Total Return Bond Fund has also beaten its benchmark, the broad-market Bloomberg Barclays U.S. Aggregate Bond Index, by a wide margin since inception in 2010. But that, too, is only part of the story. Gundlach has long specialized in mortgage-related bonds. He tends to invest substantial amounts in non-agency mortgage-backed securities, collateralized mortgage obligations, commercial MBS, and other securitized debt.

Right now, it's not easy to find a single index fund you could compare either manager to. But the more fine-grained passive bond funds get, the more investors will be able to scrutinize managers' performance and take their money elsewhere if managers don't measure up. Some skillful bond managers will still beat the indexes. It's just going to get a lot tougher, and investors will be watching the exit sign more closely. *—Nir Kaissar, a columnist for Bloomberg Opinion, is founder of asset management firm Unison Advisors*

THE BOTTOM LINE Bond indexes are becoming more sophisticated, which will make it easier to evaluate fixed-income managers. Some won't survive the scrutiny.

It's Not That Easy To Be Like Buffett

● Hedge funds have struggled to replicate Berkshire Hathaway's success in reinsurance

Berkshire Hathaway Inc.'s Warren Buffett issued a warning about eight years ago: Reinsurance isn't easy. Still, hedge fund managers—including David Einhorn of Greenlight Capital and Daniel Loeb of Third Point—have borrowed a bit from Buffett's playbook and gone into reinsurance, which provides coverage for other insurers.

Buffett had an advantage. He owned insurance companies within his conglomerate and could invest their "float"—the premiums they take in but don't have to pay out in claims right away. The hedge funds' approach is different. Their managers have set up separate, publicly traded reinsurance companies that invest in the hedge funds. Investors can use the reinsurance stocks as a way to get a taste of the investments of the hedge funds, which then get more money to use and earn fees on.

The trick is to do well in writing insurance policies and investing the portfolio. Einhorn's ▶

◀ Greenlight Capital Re Ltd. and Loeb's Third Point Reinsurance Ltd. have had trouble with both at times. The companies' shares are trading below their initial public offerings. "Investors have really soured on this model because it doesn't seem to work," says Meyer Shields, an analyst at Keefe, Bruyette & Woods Inc. "It's not like it couldn't work. It just hasn't."

Greenlight Re is at a crossroads: Facing criticism from an insurance ratings agency about its underwriting, it announced in May it was reviewing its business. Einhorn said in August that the company had to search for the "best strategic direction," but liquidation wasn't his first option. Third Point Re hasn't posted an annual underwriting profit since at least its 2013 IPO.

The insurance business got crowded. In 2013 the "floodgates" of capital opened and altered the market, says Shields. As new players joined in, it got harder to charge high premiums. Natural disasters in 2017 forced insurers to pay out a record $138 billion, according to Munich Re.

Investment markets haven't always been kind, either. Greenlight Re's portfolio declined 30.3% last year, and Third Point Re's investments managed by the hedge fund fell 10.8%. This year, Greenlight Re's investments are up 7.8% through the end of August, and Third Point Re's hedge fund holdings recorded an estimated net return of 11.4%. As Greenlight Re seeks a new path, it says it will stash a majority of its investments in cash and short-term Treasuries. Third Point Re ended up shifting some bets into fixed-income assets. Greenlight Re and the Greenlight hedge fund declined to comment.

Loeb isn't giving up. He says he'd like to see Third Point Re, which has a market capitalization of about $918 million, become a $5 billion to $10 billion company in the next 5 to 10 years. "I'm fully prepared to put more capital into this business to make strategic acquisitions," he says. The original plan was to seek relative stability while getting upside from Loeb's investment bets. Now the company is working to shift its underwriting strategy to higher-margin types of policies.

Hedge fund reinsurers aren't alone in being scarred by the business. In 2011, Buffett admitted Berkshire didn't really succeed until the arrival of Ajit Jain, now vice chairman for insurance operations. How long did it take Berkshire to find its footing? Fifteen years, Buffett said. —*Katherine Chiglinsky*

THE BOTTOM LINE Hedge funds dove into the reinsurance business, but they found it hard to eke out a profit. Poor returns in their investment portfolios sometimes made things worse.

● Einhorn

● Loeb

Private Equity Bets On a Train to Vegas

● Fortress-backed Virgin Trains USA has built a line in Florida. Now it's headed to the desert

Virgin Trains USA has a big idea: Make train travel a hip, convenient alternative to driving in some of the most autocentric parts of the country. Backed by Fortress Investment Group private equity funds, the company last year launched along Florida's east coast the country's first new privately financed intercity passenger rail in a century. Its Miami hub is a gleaming, citrus-perfumed station where blue-blazered employees stock the VIP lounge with complimentary charcuterie.

Now the company has Las Vegas in its sights. It says it can bring revelers there from the Los Angeles area by electric trains that can reach 150 mph. Wowed by the prospect of jobs and traffic relief, a California state agency in September approved the first step in Virgin Trains' plans to sell as much as $4.2 billion in tax-exempt debt for the $4.8 billion project. The company says construction of the 170-mile line, mainly along the median of Interstate 15, will take three years, and it'll start in 2023.

The hitch: The California terminus isn't in L.A. itself but in the outlying community of Apple Valley, 90 miles northeast of downtown. Virgin Trains will have to persuade Angelenos to pay about $60 each way for a 90-minute train trip—after they've already driven as far as the Mojave Desert.

In pitches to California and Nevada officials, Virgin Trains talks about eventually connecting to Los Angeles, but it doesn't offer a timetable for that. And when executives tout their Florida achievement, they don't mention they're behind ridership projections. It was only in June that the company broke ground for an extension of the line—of about 170 miles—running northwest to tourist-rich

PHOTOS: EINHORN: ALEX FLYNN/BLOOMBERG. LOEB: DAVID PAUL MORRIS/BLOOMBERG. VIRGIN TRAINS: COURTESY BRIGHTLINE

Orlando, which it expects to open in 2022.

There's also no word on when additional stations may open in Tampa and at Walt Disney World. Tapping Disney tourists was an ultimate goal pitched to buyers of the high-yield municipal debt the company sold in April and June for the Orlando expansion. The sales occurred several months after Virgin Trains put its initial public offering on hold. Since then, yields on the unrated bonds suggest the market is skeptical that the Florida train line will work out as well as hoped.

"If I get involved in a project like that, having seen what went on in Florida, I would have to be somewhat suspect of the perfect ending and perfect outcome," says Jim Colby, senior municipal strategist at Van Eck Associates Corp., which holds some of the Florida securities. Virgin Trains executives say their model of serving areas that are "too long to drive, too short to fly" works. "Faster and cheaper in transportation always win," says spokesman Ben Porritt. The company was known as Brightline before a marketing deal last year with Richard Branson's Virgin Group, which also bought a small piece of it. SoftBank Group Corp. owns Fortress.

The prospective station in California is in a part of San Bernardino County that was hit hard by the housing bust. Porritt calls it a "strategic location" for drivers from Los Angeles deciding whether to press on to Vegas. Once they make their way to the Apple Valley station, passengers could drop off their bags. They'd see them again in their hotel rooms after a trip including food and beverage services and free Wi-Fi. "You would be able to essentially start your evening in Las Vegas from the second you jump onto our train," Porritt says.

An economic analysis commissioned by Virgin Trains predicts the project will employ thousands of construction workers and more than 500 people after completion, as well as reduce carbon emissions by taking 4.5 million cars off the freeway. But the train ticket has to compete with direct ways to get to Vegas. Over a mid-October weekend, people can fly there from Los Angeles International Airport for about $200 or rent a midsize car for about $70 a day, according to an online search.

John Miller, co-head of fixed income at Nuveen LLC, which holds a lot of the bonds sold in April for the Florida rail, isn't yet sold on the California project. The location outside of Los Angeles is a "concern," and he wants to see cost details.

The Florida line began running in January 2018. Passengers from Miami sitting in the most expensive cars (about $40) can order complimentary bloody marys until the train pulls into the

◀ Virgin Group's Branson (second from right) at the Florida line's Miami hub

West Palm Beach station an hour and 15 minutes later. The taxpayer-funded station at Orlando International Airport is slated for 2022, and stations in Aventura, Boca Raton, and the Port of Miami will open in 2020.

That would boost ridership. Over the first eight months of this year, 639,373 passengers rode the rail line, making it unlikely the year will end with more than 2 million total customers, which was

Las Vegas by Rail

A proposed new line shortens the drive but doesn't reach L.A.

the expectation in a study distributed to investors. There are 390 million trips taken annually between southeast Florida and Orlando; the company says it needs to provide service to just 2% of that total to succeed.

It's "incredibly optimistic" for the company to seek additional financing with its key Orlando expansion under way, says Nicholos Venditti, a portfolio manager at Thornburg Investment Management. But it's also smart, he says, given today's low interest rates and a bullish environment for bonds. "They're in a world where investors broadly are yield-starved," he says. "They will be able to get it done at kind of unprecedented levels for a project of this size and with this kind of risk." *—Romy Varghese and Nathan Crooks, with Jonathan Levin*

THE BOTTOM LINE A plan backed by Fortress funds would whisk California tourists to Las Vegas at 150 mph. But first they would have to get to a train station 90 miles from downtown L.A.

Europe's Anti-Immigrant Leaders Have a Secret

▼ Indian workers in Sarud, Hungary

● Hungary and Poland are among those quietly importing workers to ease a labor crunch

Satwinder Singh caused quite a stir when he arrived in Sarud, a sleepy Hungarian village, four years ago. He was among a handful of guest workers who'd been brought over from India to work at a dairy farm that was struggling to stay afloat because of a labor shortage. The locals weren't welcoming.

Speaking on a recent morning, he described being pelted with eggs by some townsfolk. Others called him a terrorist. Some of Sarud's residents took their concerns straight to their mayor. "Someone came to me saying the Indians will inject poison into the milk and contaminate the whole country," recalls Istvan Tilcsik. "Then people saw they just came to work and never had run-ins with the law. Things have settled down now."

Hungary's prime minister would probably prefer that Singh and his compatriots go unnoticed. Viktor Orban heads an anti-immigrant vanguard inside the European Union, which he claims to protect from "invaders." He's erected barbed-wire fences to keep out refugees and withheld food from some housed in detention centers. U.S. President Donald Trump says he's like a "twin brother."

Yet Hungary and other nearby nations with an anti-immigrant bent are quietly nudging open a back door to foreigners. Central and Eastern Europe are the fastest-growing part of the EU, and with declining birth rates and the departure of millions of workers to Europe's richer west, homegrown labor forces can't fill companies' demands.

AKOS STILLER/BLOOMBERG

Edited by Cristina Lindblad

In recent years governments have been willing to admit white, Christian workers from places such as Ukraine and Belarus. But that supply is drying up. Now migrants from far-flung corners of the world have begun to arrive, challenging the notion that this corner of the continent can remain sheltered from Western-style multiculturalism.

The labor force of the 21 countries between the Baltic Sea and the Balkans will shrink by more than a quarter by 2050, lopping over 1 percentage point a year off economic growth, according to the International Monetary Fund. IMF Deputy Managing Director Tao Zhang told central bankers from the region in July that their countries must start importing workers to help address the issue.

It's already happening. In Hungary, the EU's fastest-growing economy, there were 49,500 work permits held by non-EU citizens in 2018, more than double the previous year's figure. In 2016 there were about 7,300. While Ukrainians held more than half of them, Vietnamese, Indians, and Mongolians are now among the groups growing quickest.

Romania boosted the number of permits for non-EU workers by 50% this year, with Sri Lankans and Indians joining Chinese and Turkish employees at restaurants and construction sites. In Poland, crews of Mongolian women paint newly built Warsaw apartment buildings.

In Belgrade, ethnic Albanians are working alongside locals to turn the Serbian government's vision for a swanky new waterfront complex into reality. On a recent visit, President Aleksandar Vucic expressed amazement at how economic need was trumping a history of ethnic tensions.

South Korea's Hankook Tire & Technology Co. this month delayed a $295 million investment at its factory in Hungary because of difficulties in recruiting employees. About 200 of its existing 3,000 workers at the plant are from Ukraine and Mongolia.

Governments have attempted to lift birth rates by offering generous tax benefits and other perks for would-be parents, yet at a recent demography conference in Budapest, Orban, Vucic, and Czech Prime Minister Andrej Babis conceded they hadn't found the magic formula.

And they don't like talking about their stopgap solution. They continue to beat the anti-immigrant drum without mentioning the new workers from farther afield. Polish Prime Minister Mateusz Morawiecki, who faces elections in October, fired a deputy minister in 2018 for going "way too far" when advocating more foreign workers.

In Hungary, the Orban-controlled media dishes out a daily diet of anti-immigrant news, and the government maintains a state of emergency over mass immigration that, in reality, has plunged. Orban himself touts "ethnic homogeneity" as being good for business, keeping the country safe.

Attitudes among the public may be thawing. In the eastern Croatian town of Petrijevci, the local meat-processing plant hired 17 butchers from Nepal to fill vacant positions. Residents, many of whom had never met someone from so far away, collected clothes for one worker after his luggage was lost in transit.

Back in Sarud, where old ladies sell homegrown fruit and vegetables outside their homes, the Indian workers' appearance has also shifted opinion. Margit Demeter, for one, is starting to doubt what she sees on TV. "We hear a lot of bad things about migrants, but I can't say anything bad about the ones here," says the 66-year-old. "We could just as easily be in their shoes. And what about all the Hungarians who went abroad to live or work? Are we going to say bad things about them, too?" *—By Zoltan Simon, Jasmina Kuzmanovic, and Marek Strzelecki*

THE BOTTOM LINE Eastern European nationalists are quietly opening the door to hundreds of thousands of foreign workers to battle labor shortages that threaten investment and growth.

● World's fastest shrinking populations, 2017-2050

DATA: UNDESA, WORLD POPULATION PROSPECTS 2017

China's Go-Slow Stimulus

● The U.S. and Europe are boosting their economies, but Beijing is wary of debt overload

Donald Trump has called the leaders of the Federal Reserve "boneheads" for not doing enough to juice U.S. economic growth—even though the Fed has already cut interest rates twice this year. Meantime, the European Central Bank says it's ready to buy as much debt as it takes to reflate the euro area. That leaves China as the only one of the world's big three economies that isn't slamming its foot on the growth pedal. It's an extraordinary policy turnaround.

In past cycles, any hint that the Communist Party's lofty growth forecasts were under threat led to all-in stimulus. This time around, even with the Chinese economy headed for the slowest ▶

◀ expansion in almost three decades—and with more space to cut interest rates than its global counterparts have—President Xi Jinping is doubling down on his stability-first strategy. There's stimulus, but it's moderate, even minimal, and that has big repercussions for the world economy.

"In the past, just at the first hint of uncertainty they would throw open the credit taps," says Andrew Polk, co-founder of research company Trivium China in Beijing. "Now they realize that an extra percentage point of growth is not worth the damage that they'd do to their economy."

In 2008, when the global financial crisis hit, China unleashed the mother of all stimuli. Five cuts to the benchmark one-year lending rate were accompanied by a 4 trillion yuan ($563 billion) stimulus package that triggered an avalanche of bank lending, most of it to local governments for infrastructure investment.

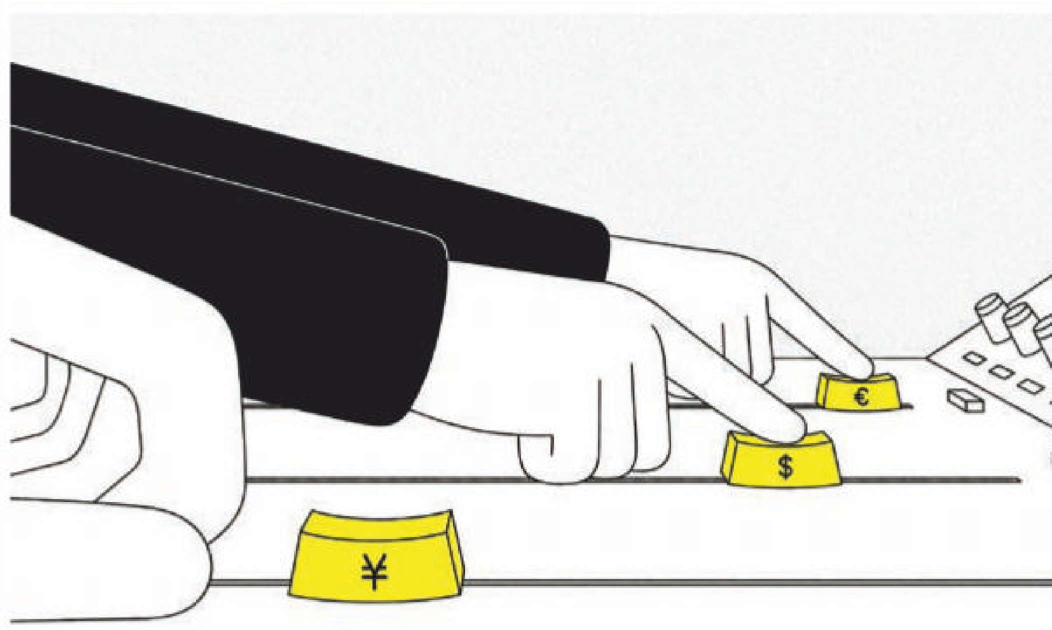
That set in motion one of the fastest accumulations of debt in human history, and that debt is still a weight on the nation's economy.

Analysts date the policy shift to May 2016, when an article written by "an authoritative person" in the *People's Daily*, the Communist Party's mouthpiece, called levels of debt the "original sin." The "fantasy" of stimulating the economy through easy monetary policy had created problems including an emerging property bubble, excess industrial capacity, and rising nonperforming loans, according to the article, widely said to have been written by Vice Premier Liu He, President Xi's top economic adviser. It signaled a new path that leaders have largely stuck to even amid the uncertainty of an escalating trade and technology war with the U.S.

Instead of making more credit available, policymakers are striving to redirect lending away from deadbeat state-owned enterprises to smaller, more efficient private companies. They've also sought to reduce systemic risk by strengthening the regulatory system. People's Bank of China Governor Yi Gang reiterated the policy at a press briefing in Beijing on Sept. 24: "We are not in a rush to roll out massive rate cuts or QE, like some other central banks."

The result is an inevitable drag on growth. Industrial production in August grew at the slowest pace for a single month since 2002, while a price index of industrial products fell deeper into deflation. All of this means China's slowdown is likely to be a headwind for global economic growth this year and next, Polk says. "The rest of the world will need to get accustomed to the idea that China will not offer a quick fix to its current growth malaise," says Frederic Neumann, co-head of Asian economics research at HSBC Holdings Plc in Hong Kong.

China is taking some steps to keep growth humming. The amount of cash banks must hold as reserves was cut this month to the lowest level since 2007, market interest rates have been guided lower, and bond issuance for infrastructure spending has increased. The governmemsg msgnt also has pledged to cut taxes for businesses and households by about 2 trillion yuan ($281 billion) this year in what it described as the largest ever fiscal stimulus plan for the country. "Though it seems as though China is a laggard in policy stimulus, and the narrative proclaims it, the reality is a bit less convincing," says George Magnus, an economist at University of Oxford China Centre and author of *Red Flags: Why Xi's China Is in Jeopardy*.



Compared with past spending binges, this stimulus is more targeted and calibrated. But it's not without risk: The biggest danger is that the economy slows more than policymakers expect, resulting in widespread unemployment and a downturn that becomes hard to reverse. Leaders may then crank up stimulus, bringing about the very financial instability they aimed to avoid.

"In the past, just at the first hint of uncertainty they would throw open the credit taps"

The leadership's resolve may be tested sooner rather than later. With more stubborn trade and financial challenges, growth could tumble to 5.5% without stronger stimulus, says Louis Kuijs, chief Asia economist at Oxford Economics in Hong Kong. "The coming six months are going to be a litmus test," he says. "I personally don't think that China's policymakers are willing to tolerate such a rate of growth, but let's see." —*Kevin Hamlin*

THE BOTTOM LINE While the U.S. and Europe are juicing their economy, China is taking a slower approach. This will be another obstacle to global growth.

ILLUSTRATION BY WOSHIBAI

The Trade Wars Come To Alabama

● Home to Airbus and Mercedes plants, the state has a lot to lose from a new round of tariffs

Jimmy Lyons ought to be sleeping soundly. Business is good at the port in Mobile, which he oversees as chief executive officer of the Alabama State Port Authority. European aviation giant Airbus SE is expanding a plant nearby that relies on the port for shipments of critical parts. And near Tuscaloosa, a 3½-hour drive north, things are humming at a Mercedes-Benz plant, which is one reason the port authority is building a new auto export facility.

But Lyons has plenty to worry about. Alabama may have avoided the wrath of Hurricane Dorian in September (despite President Trump's forecasts), but the trade wars threaten to bring a severe economic storm down on the state. "The thing that keeps me up at night is a global recession," says Lyons. "I've seen what it can do to our business. It dips very quickly and comes back very slowly."

The conflict with China has already caused a collapse in grain exports from Mobile. A slowdown in the global economy would hit outbound shipments of metallurgical coal that account for 12 million of the 28 million tons of goods that pass through the port annually. But what looms largest in Alabama these days is the possibility that Trump will open a new European front in his global trade wars.

In early October, the Trump administration is expected to roll out tariffs on imports from the European Union. The duties are being authorized by the World Trade Organization, which in 2018 ruled in the U.S.'s favor in a long-running dispute over illegal subsidies for Airbus. (The WTO is expected to announce as soon as Sept. 30 that it will allow the U.S. to apply tariffs on nearly $8 billion in imports from the EU.) Then in November the president faces a self-imposed deadline to decide whether to go ahead with auto tariffs that would target big European carmakers such as Mercedes, which has been making vehicles in Alabama since the 1990s.

Trump has called the EU "worse than China" when it comes to its trade relationship with the U.S. Through July the U.S. had a $103 billion trade deficit in goods with the EU, with cars and auto parts making up a big chunk of that. Duties on Airbus's imports of fuselages, landing gear, and other components made in Europe would also go some way toward addressing the trade imbalance with the EU.

The EU is Alabama's largest foreign investor. German companies alone have spent $8.5 billion since 1999, according to Greg Canfield, the state's secretary of commerce—82 German companies have operations in the state along with 51 French businesses and more than two dozen based in the U.K. "Alabama's economic ties with Europe, and Germany in particular, trace back decades," he says.

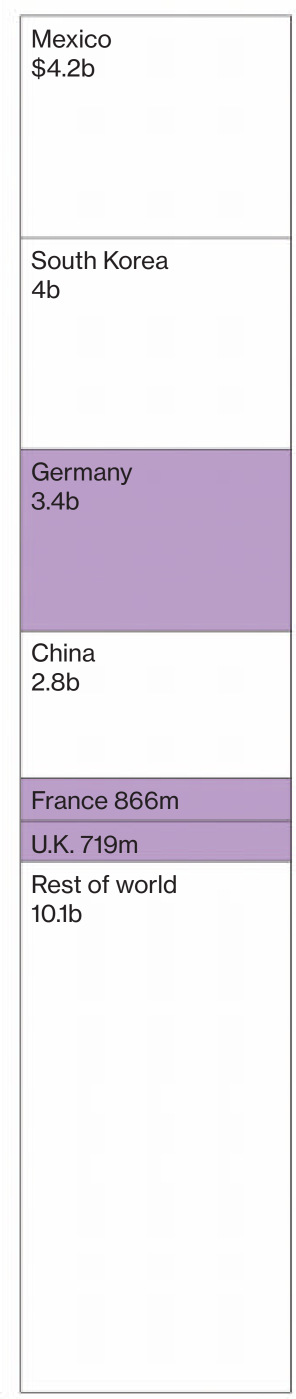
Democratic Senator Doug Jones says the Trump administration's threat of auto duties is already putting a damper on investment. But he's more worried about what would happen in a state that's become home to a growing number of auto assembly plants if they actually were put in place. The tariffs "are not going to cause all these plants to close. But they are not going to be able to expand," he says. "And the same is true with Airbus."

Airbus's plant in Mobile turns out A320 planes at a rate of five a month. Its output is expected to double by 2023 with the addition of a production line for the A220 model, a move that will bring at least 600 jobs with it. If, that is, the trade wars don't get in the way. "Any tariffs applied to major components—fuselages, wings—would see an impact to our business model," says Daryl Taylor, the Airbus executive in charge of manufacturing at the Mobile plant. He says 40% of the cost of the planes made there is spent on avionics, engines, and other parts sourced in the U.S. The Trump administration has already turned down a request from the company to exempt from tariffs sections of the A220 that are made in China.

Mercedes is building a plant near its factory that will one day supply batteries for the electric vehicles the German automaker expects to build there. If Trump goes ahead with his threatened tariffs on auto parts, that could raise the price of myriad imported components beyond batteries, throwing a wrench into Mercedes's manufacturing strategy. Potentially at risk: some of the 8,000 jobs the automaker and its suppliers have brought to Alabama. —*Shawn Donnan*

THE BOTTOM LINE Trump's threat to roll out new tariffs could halt an expansion at an Airbus plant in Alabama and endanger investments at a Mercedes factory in the state.

● Value of Alabama's imports in 2018



DATA: US CENSUS BUREAU

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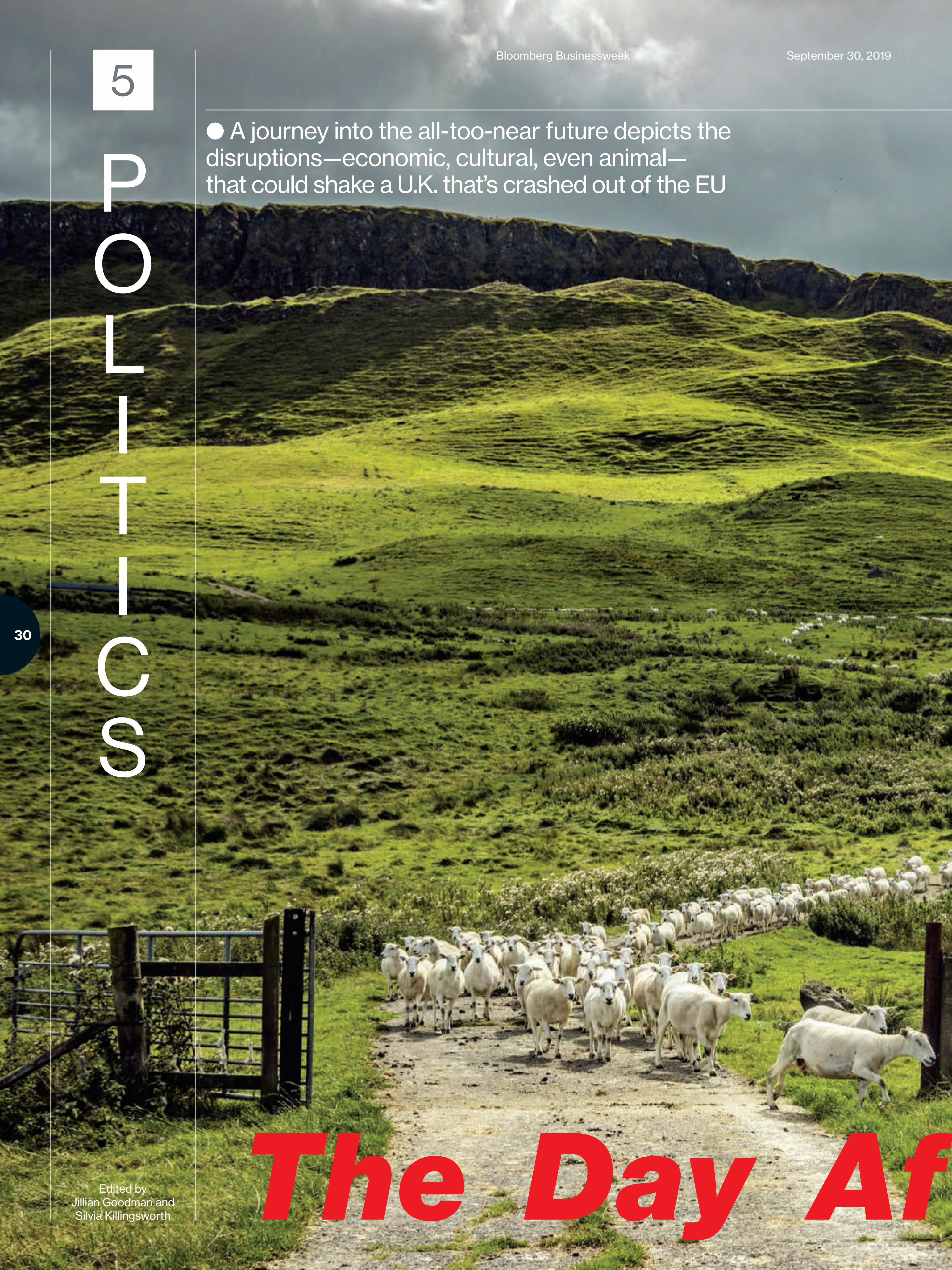
POLITICS



● A journey into the all-too-near future depicts the disruptions—economic, cultural, even animal—that could shake a U.K. that's crashed out of the EU

The Day Af

Edited by
Jillian Goodman and
Silvia Killingsworth

● By Joe Mayes and Alex Morales

● Photographs by Guy Martin

ter No Deal

This account of the first 24 hours of a no-deal Brexit is based on interviews, government documents, and academic research. The people described are real, as are their views on Brexit. Dialogue is real and faithfully rendered from actual interactions but projected into the near future. Brexit might not play out this way. Prime Minister Boris Johnson could reach a deal with the European Union. Parliament's attempts to block a no-deal departure could succeed or delay the inevitable. Johnson could be booted from office. We won't know until we know.

● 11 P.M., OCT. 31, WESTMINSTER, LONDON

The digital Brexit countdown clock in Boris Johnson's office at No. 10 Downing St. reads 00 Days, 00:00:00 in red digits. The U.K. has left the EU.

Even after an astonishing Supreme Court ruling in September that he illegally suspended Parliament, the prime minister ignored a law forcing him to ask the EU for a delay and delivered Brexit anyway. His final pitch to extract concessions at an Oct. 17 summit ended in failure, leaving no alternative: It had to be no-deal. He said it during his leadership campaign, and he meant it—the country would leave the EU on schedule, "do or die."

As the clock strikes zero, the prime minister isn't in his office. Instead, he's at 70 Whitehall, ensconced in a cabinet office briefing room (or Cobra), the British government's nerve center during emergencies. Operation Yellowhammer, the code name for the no-deal Brexit contingency plan, is in full swing.

A deal would've given the U.K. a grace period to prepare for life outside the EU. Instead, the immediate rupture has left the country alone on the world stage for the first time since the early 1970s. It's gone from being the gateway to Europe to an isolated nation stripped of major trading relationships.

The pound is in a dive. Johnson passes an anxious hand through his perpetually untidy blond hair. He dearly wants to avoid chaos and disruption—scenes like the ones unfolding outside. On the bank of screens at one end of the room, a helicopter shot shows anti-Brexit protesters swarming Westminster. Counterprotesters brandish Union Jacks. So far, there's been no significant violence.

● 11:30 P.M., JUST OUTSIDE FOLKESTONE, KENT, SOUTHEAST ENGLAND

A dark blue Mercedes van hurtles down the motorway toward the white cliffs of Dover. The 007 theme blares from a Samsung Galaxy S7. Roger Moore—the 65-year-old driver for courier company JJX Logistics, not the deceased actor known for his license to kill—answers. On the line is his boss, John, calling from the head office in Dudley. "How's it going, Rog?"

"All good, John, no trouble at all. Traffic's completely clear." The roads are quieter than usual, and he's making good time. In the back of the van are wooden crates packed with Airbus plane parts that need to be in Paris by early tomorrow. After he's crossed the channel, Moore will become one of the first Britons in four decades to enter the Continent as a non-EU citizen. About time, too, he thinks: He was among the 17.4 million who voted Leave.

At the Eurotunnel complex, he joins his co-worker Chris and waits to drive onto the train that will carry them through the 31-mile-long Channel Tunnel. Next to the departures monitor, a TV shows a live BBC News *Brexit* special.

"This is gonna make us poorer, this," Chris says, nodding at the screen. He voted Remain.

"No it isn't," Moore says.

"Yes it is."

They go back and forth until their train is called. At Dover, 10 miles to the east, the port's chief executive officer, Doug Bannister, 54, is in the middle of a string of press interviews. "The Port of Dover is 100% ready," Bannister says, gesturing at the flowing traffic. Still, he says, "We're anticipating that there's going to be disruption." The government has set up five inland sites to process trucks and ensure they have correct export paperwork. "Whether they'll be successful or not, we need to see," he says.

The Port of Dover and the Channel Tunnel are two of Britain's most important trade arteries. As many as 10,000 trucks rumble onto ferries every day, carrying a sixth of all trade in goods, while 6,000 lorries per day cross on the undersea rail link. Increasing processing times by just 2 minutes on average could lead to 17-mile-long traffic jams and 60-hour delays.

Moore sips a Starbucks Americano as he approaches the border, where a U.K. official looks at his passport and waves him through. At the French checkpoint, he gives a cheery "*Bonjour!*"

"Bonjour, monsieur," the woman replies, peering at his ID. A lengthy pause. "*Allez-y*"—go ahead.

Every export coming from the U.K. to the EU now needs a declaration form, and JJX's customs agent has handled all the appropriate paperwork. In total, about 200,000 traders need to make export declarations for the first time. Thankfully, Moore came prepared. He rolls his van onto a ramp and then down onto the train.

In 36 minutes he's on French soil. He joins a smooth-moving queue in a "green" lane for compliant freight and starts to exit the port. He notices French customs officials directing other trucks into an "amber" lane, which is filling up.

Strictly speaking, Jazz McDonnell is now a smuggler

▲ Practice is the easy part as Chi-chi Nwanoku preps for a post-Brexit European tour; the paperwork is a nightmare

● 7:30 A.M., NOV. 1, NEWRY, COUNTIES ARMAGH AND DOWN, NORTHERN IRELAND

In the 3 minutes 73-year-old Jazz McDonnell takes to drive back to his sheep farm after his constitutional through the foggy hills, he leaves the EU, enters it, and leaves again. The Irish border is a crooked squiggle, and his land straddles it: 270 acres of lush, hilly farmland in the U.K.'s Northern Ireland, 500 in the EU's Republic of Ireland. Once home, Jazz—christened James—eats some hot porridge before setting out to move some rams. It's mating season.

The McDonnell family has raised sheep here for centuries. But overnight, the animals now face an export tariff to the EU of almost 50%. At the pre-Brexit price of £80 ($99) per head, McDonnell just about broke even. After costs—feed, diesel, rent—he made a profit of £1 a head. With sheep prices about to plummet, and without the EU subsidies that made up about half his income, he'll go out of business.

"Come on, Toby!" McDonnell calls, calling his collie into his van. During the Troubles, as the decades of violence between Northern Ireland and the Republic of Ireland are known, British soldiers blew these roads up to force drivers onto the main routes and through manned checkpoints. Former Prime Minister Theresa May spent 19 months brokering a deal that would keep the border open and peaceful while still delivering Brexit, a process that ultimately failed and put Johnson on course for the job. Ireland's prime minister, Leo Varadkar, is riding out no-deal for now, taking his chances that the U.K. will return to the negotiating table before the EU can punish him for failing to hold down its frontier.

McDonnell arrives at a hillside plot, and Toby scampers up the incline, out of view. Suddenly a herd of rams rushes over the lip. Once they're in the back, McDonnell slams the door behind them and drives down narrow roads to a nearby field, crossing the Irish border.

Strictly speaking, this is now smuggling. Livestock entering the EU from a non-EU country must be checked for health reasons. The thought of going through customs points a dozen or more times every day makes McDonnell shudder. Checks mean infrastructure, people in uniforms: targets for violence. He releases the sheep. If no-deal persists, he'll have to slaughter them all.

● 8 A.M., LONDON

In an office just a few steps from the Monument to the Great Fire of 1666, Mark Hemsley hears the ring of an old-fashioned bell and looks at a wall of screens overhead. Financial markets have opened in Amsterdam and London. He wants this moment to be as boring as possible.

Hemsley is president of the European division of Cboe Global Markets, which runs the world's largest pan-European equities exchange. Matching buyers and sellers from across the globe in split-second transactions worth billions of euros each day is a part of the plumbing of Britain's financial sector, 7% of the nation's economic output.

This year, EU regulators looked like they were going to demand that European shares be traded ▶

◀ Lorry driver Roger Moore waits at the Channel Tunnel

◀ inside the bloc after Brexit, so Cboe set up a hub in Amsterdam. A dozen of Hemsley's staff are now there, poised to liaise with customers, watch markets, and satisfy regulators.

Cboe's readiness for no-deal is matched across the City. Big banks such as HSBC, Deutsche Bank, and JPMorgan Chase triggered Brexit plans long ago, sending bankers to Paris and Frankfurt and setting up EU subsidiaries to ensure continuity. Still, there are some headaches. Listing European shares for trading on both the Dutch and U.K. boards—having two platforms and a split trading volume—may mean less competition, fewer trades, and higher prices. Whether small and midsize firms are as prepared as the big banks is a nagging question. Then there's the £16 trillion in uncleared swaps potentially hanging in regulatory limbo.

Hemsley studies the screens for clues as to what kind of day it's going to be. As long as selling and buying go on, Cboe's preparations are holding. Many people got their Brexit-related business out of the way days ago, once no-deal became unavoidable—which is fine by Mark. He sucks in his breath and waits for flickers of trouble.

● 8:45 A.M., SAINT OUEN L'AUMONE, AN INDUSTRIAL ESTATE NEAR PARIS

The 007 theme blares out again. Moore jolts awake from a nap. It's Ellis Blackham, JJX's 21-year-old logistics account manager. "Hi, Rog, how's it going?"

Like Moore, Blackham voted Leave. He expected Brexit to boost demand for logistics services. So far, he's right: JJX's warehouses are filled with stockpiled goods, from Heineken lager to Nivea skin lotion.

"Still waiting for the goods to come back," Moore replies. "Shouldn't be too much." His drive to Paris went without a hitch. He's bringing more airplane parts on his return.

"Good man," Blackham says. "It's still looking clear back to Calais. You shouldn't have any problems." The situation at Dover is less rosy—queues are forming—but coming the other way should be fine.

"Thanks, mate. Ta-rah." Moore hangs up. Once the fresh crate appears, he gets back on the road and flicks on BBC Radio 4: The pound is falling further; protests and counterprotests continue outside Parliament; queues are forming at the border between Spain and the British territory of Gibraltar.

● 9:30 A.M., NEAR STAFFORD, WEST MIDLANDS, CENTRAL ENGLAND

The smell of melting acrylic fills the factory floor at Goodfish Ltd. Machines whir noisily, pumping hot plastic into moulds to make handles for violin cases, rake heads for golf bunkers, fog-light holders for Mini automobiles.

Owner Greg McDonald is perched on a silver medicine ball in the boardroom, watching a video feed of the operation. Before the Brexit referendum, he wrote a note to his 126 employees about why leaving the EU would be bad for jobs. The majority ignored him, voting for it anyway. Now his staff is down to 96. Goodfish's sales have fallen 20% so far this year. Meanwhile, the weak pound has made his remaining employees' annual holidays more expensive, and they want a raise. He hasn't been obliging.

McDonald pulls out a MacBook Pro and loads the PDF of his Brexit contingency plan. Line item 2 reads, "Push button on investment to CEE"—Central & Eastern Europe. Goodfish's major European customers don't want to risk a production shutdown due to a delay in parts leaving the U.K. or to bear the costs of new tariffs. He knows they're ready to shift supplier contracts to factories on the Continent and wants to preempt the loss of business. Setting up a factory in Slovakia will cost half a million euros, a major outlay when sales are falling.

McDonald closes the laptop and glances back at the monitor. He's already had to cut working hours from 48 hours a week to 40, hitting his employees' take-home pay. He wants to keep jobs in the U.K. if at all possible, but if the calls start coming from his big clients demanding action, he'll have no choice.

● 10:30 A.M., LONDON

Chi-chi Nwanoku wakes up late. In the last few days, she's played concerts in Leicester and Oxford, each about an hour away, and last night she arrived home well past midnight. She picks up her instrument, a double bass made in 1631 by Italian master luthier Nicola Amati, and starts playing part of Samuel Coleridge-Taylor's violin concerto in G minor. Next week, her Chineke! Orchestra, an ensemble of black and other ethnic-minority musicians, is scheduled to perform the piece, along with works by Weber and Brahms, at the Concertgebouw in Bruges, the first Continental stop on its inaugural European tour. Then it's on to Amsterdam, Cologne, and Antwerp.

Or so she hopes. The tour has become a logistical nightmare. Every one of the orchestra's 60 members needs a carnet—a temporary international customs document that costs about £500—to allow their instruments to enter the EU. They may also need separate work permits for every country, each of which has different stipulations. The process could take weeks. For EU citizens coming the other way, there are also headaches. They need to apply for "temporary leave to remain" permits. And the perception that the U.K. is now a hostile destination will make it harder for sectors that rely on lower-skilled EU workers—including the National Health Service, plus large parts of the hospitality and construction industries—to recruit from the Continent.

Nwanoku puts down her double bass and opens her e-mails, scanning for news on the permits.

● 12:30 P.M., CALAIS, NORTHERN FRANCE

Moore drives up to the first customs checkpoint. A lady with long, curly brown hair wearing sunglasses approaches his window. She asks to see his paperwork and studies it closely.

"*C'est quoi?*" she asks. What is it?

"One box. Aircraft parts," Moore says, putting on a slight French accent.

"Cigarettes, alcohol, tobacco?" the woman asks.

"Nothing. Zero." Moore says.

With that, Moore rolls forward and his vehicle is weighed.

Across the channel in Dover, Bannister is in his office at Harbour House, with views of the white cliffs. It's been a busy morning. He's updated Cobra, and he's spoken by phone with counterparts in Calais and Dunkirk, with Kent Police, Highways England, the harbor master and Her Majesty's Revenue and Customs. Opposite his desk is a framed letter from 1941 in which wartime Prime Minister Winston Churchill commends "the courage and resourcefulness" of the people of Dover. It's a reminder the town has weathered far worse times.

● 3:30 P.M., ISLE OF MULL, SCOTLAND

The final batch of the 100,000 lemon melt shortbreads Joe Reade's biscuit factory produces each day are turning gold in his industrial oven. A dozen white-coated, hair-netted workers, including Poles and Romanians, mix Irish butter, Sicilian lemon oil, Brazilian sugar, and British flour. They bake the resulting dough at 200C before dipping the biscuits in Belgian white chocolate. Then they wrap the treats in cream-colored packets bearing the Island Bakery name in dark-blue lettering.

Come 4 p.m., the production line stops. Boxes of shortbreads are loaded onto trucks, to be taken by ferry to the Scottish mainland, then on to Germany and the Netherlands. British Airways is one of Reade's biggest customers, but in all, 25% of his sales come from exports to the EU.

There'll be no exporting to Europe today. The license certifying his biscuits as an organic food—he also heats his oven with renewable wood and generates his own electricity from a wind turbine—is no longer valid. He'll need a new one from the EU to sell his product there, and its rules prevented him from applying for it until the U.K. had actually left. It could be months before the permit is approved.

"This is total madness," Reade mutters under his breath. He took precautionary measures, encouraging his European customers to bring forward orders to beat the Brexit deadline. He doesn't need to ship to the Continent for a few weeks, but then ▶

By now, traffic going the other direction is backed up into Kent—headlights stretch for miles

▼ Working on moulds at Goodfish

◀ the pain will start. Reade wants Scotland to break away from the U.K. and rejoin the EU. Recent opinion polls suggest a majority of Scots agree.

● 3:45 P.M., CALAIS

Moore rolls his van onto the ferry. Ninety minutes later, he's in the U.K. again. Six floors above him in the port's control tower, Bannister surveys the now packed facilities. Customs spaces have filled up at Calais, causing trucks to back up in Dover. A queue of vehicles snakes past the tower, through passport and police checks, before being sorted into 250 lanes lined up in front of six ferry berths. One hundred and fifty trucks and a few passenger cars are waved onto the now empty ferry. One of Bannister's controllers is on the phone to Kent Police, who've activated Phase 1 of Operation Brock, their traffic management plan. She tells them to release another 150 freight trucks from a holding area on the A20 road approaching Dover.

After clearing the port, Moore steers past the spot where a Banksy mural once showed an EU flag being chipped away. It's been painted over. By now, traffic going the other direction is backed up into Kent—headlights stretch for miles. It's not as bad yet as the worst of the doomsday scenarios; still, he's not looking forward to his next trip. The *Express* jubilantly declares, "Finally! No deal, no problem." The *Mail* is more measured, with the tagline "Britain braces for no-deal disruption." He tries the puzzles in the *Mirror* before turning in, shortly after 11 p.m.

● EPILOGUE

It's at least a few days before most Britons notice the effects of no-deal. Retailer stockpiles prevent any immediate shortages. A government plan to transport critical supplies of medicines, chemicals, and fuel on extra ferries is effective, bypassing the severest border logjams and limiting disruption.

In the morning Brexit meetings of companies in the U.K.'s service industries, the major worry is enforcement. CEOs ask heads of legal departments if the EU will punish routine cross-border activities such as transferring data or providing basic services. Risk officers repeatedly refresh the U.K. government and European Commission websites, anxious for answers. Smaller companies chance it, either believing they won't be pulled up or unwilling to pay the extra cost of compliance. Much of the economy is in a legal limbo.

As holdups at the ports continue in the following days, supermarket inventories dwindle. Fresh strawberries and tomatoes run out, and prices for lettuce and cucumbers rise. Social media pictures of empty shelves go viral, sparking panic-buying. Factories schedule production shutdowns. Continued confusion at the ports hits supplies of medicines.

For Johnson, his Churchill moment has come. He gives nightly speeches from No. 10, urging calm. Brexit will be worth it in the long run, he says. "Britain," he says for the thousandth time, "is taking back control." —*With Silla Brush*

▲ McDonnell says Brexit's tariffs and red tape may force him to slaughter all of his sheep

Retail

It Really Pops

Flash stores grow from attention-grabbing stunts to sales boosters

The next time you sink into a modular couch at Costco—use your imagination—know that you're sitting in the middle of a retail paradigm shift. This fall, 700 Lovesac pop-up stores will appear inside the warehouses across the U.S. for 10 days, selling the adaptable sectionals the company is known for. "We have 200-square-foot branded environments with our own trained demo expert ready to sell you a $2,000 to $3,000 couch set," says Chief Executive Officer Shawn Nelson. Yet those simple set-ups, which Lovesac has ramped up, starting with 200 in 2017 and 500 last year, "bring in very high revenues," Nelson says. In fact, 10% of Lovesac Co.'s annual sales come from pop-ups.

Just three years ago, pop-ups were mostly used for three purposes: experiential marketing exploits, fashion-week stunts, or e-brands making the leap to brick-and-mortar. The latter filled empty storefronts in New York's SoHo district and downtown Los Angeles, selling then-unknown brands such as U.K. clothing retailer Boohoo.com Plc and dog food delivery service Ollie. The staff often included the founder. "I would get calls from a lot of emerging brands that were on Etsy and barely had their own website, and they wanted to do a one-off holiday pop-up for two weeks," says Melissa Gonzalez, of the pop-up architecture company Lion'esque Group.

Today, Gonzalez fields calls from such established companies as Amazon.com Inc. and Nordstrom Inc. or direct-to-consumer brands looking for 3- to 12-month installations. They want to "test the viability of stores in certain markets," she says.

Mohamed Haouache, CEO of The-Storefront.com, which runs a large pop-up space listing, says a shift occurred about 18 months ago. Storefront's bookings were previously funded by marketing and media budgets, he says, aimed at generating social media noise. Now the goal is to sell as much as possible in a short time. Budgets have mushroomed accordingly, and Storefront's bookings and revenue have grown by triple digits for each of the past three years, Haouache says, while declining to give specific figures. It now has more than 10,000 spaces.

Pop-ups have even become something of a bragging point. At Lululemon Athletica Inc.'s analyst day in April, Executive Vice President Celeste Burgoyne highlighted its 60 "seasonal stores" opened in North America in the previous year. More than 35% of the shoppers in those outlets were new, she said, and the locations will inform Lululemon's choices about where to expand.

Part of pop-ups' appeal is that they represent little risk. Executives can commit to eight weeks and see how it goes. Why launch a collection nationwide or bet the farm on a 10-year lease when anything can be tested in the short term: new collections, new locations, new concepts.

Edited by
Dimitra Kessenides and
David Rocks

"There's definitely a lot of 'let's learn and iterate' mentality, which is in parallel to what you see in Silicon Valley as you're growing a startup," Gonzalez says.

Experiential marketing has become increasingly intertwined with sales and location testing. Glossier Inc., the makeup e-tailer with more than $100 million in revenue and permanent stores in New York and L.A., has gone all-in on pop-ups. In 2017 the startup ran three week-long flash stores in three cities. Glossier attracted ample media attention in 2019 with six- to eight-week pop-ups in London, Boston, Seattle, and Miami; it has one more planned—for Austin this fall. The Seattle pop-up featured green plant mounds with bursts of pink and purple, designed by landscape artist Lily Kwong. Boston's was an eight-hut pop-up village, with a different shopping experience in each hut: One focused on brows; another delivered orders while customers gabbed. ("It's very pink," wrote the *Boston Globe*.)

Gonzalez and Haouache have seen plenty of failures, mostly with companies that don't have the manpower to expand to a store. "Brands have to have the operational infrastructure to handle the growth of their e-commerce and also have a store, or else it becomes a very big hit to their bandwidth," says Gonzalez.

Social media engagement is essential. "Booking a space with high foot traffic is not enough," says Haouache. A store should have a lot of followers. Celebrities and influencers with just that have joined the game, including Taylor Swift. She opened a flash store in New York in August for her fashion line with Stella McCartney.

When it's well-executed, a pop-up—or pop-in, as shops installed with another retailer are sometimes called—persuades customers to return in person, beating back the long-prophesied domination of e-commerce. Online shopping accounts for 14% of all U.S. retail sales, according to a 2019 analysis by Internet Retailer, and roughly half of retail growth.

The first floors of four Bloomingdale's locations in New York, L.A., and San Francisco feature the Carousel, a 1,500-square-foot pop-in. The merchandise and design are switched every two months. The latest theme is Window Into Seoul, with a couple dozen Korean brands on hand and a K-pop aesthetic. "One of our big focuses is to create these ever-changing and very exciting elements to continue to drive customers to our stores," says Justin Berkowitz, men's fashion director for Bloomingdale's Inc. "I really think that for the future of retail," he says, it's important to make "brick-and-mortar a place where the customer really wants to come." —*Arianne Cohen*

THE BOTTOM LINE In the past two years, pop-up stores have evolved from their marketing roots into a key driver of sales and location testing for big and small retailers alike.

ILLUSTRATIONS BY XAVIER LALANNE-TAUZIA

Sundays in the *Supermarché*

French unions hate extended store hours. So shop owners are opening without workers

For decades, French unions have fought extended opening times for stores, defending laws that forbid everything from corner groceries to warehouse-size hypermarkets from making staffers stock shelves or sit behind cash registers in the wee hours and on Sunday afternoons. Such rules, the unions say, ensure that workers get needed time off and protect them from exploitation. Two French retail chains have come up with a way around those regulations: opening sans employees.

Grocery group Casino Guichard Perrachon is leaving 200 outlets open after employees go home, with self-checkout machines in their stead. Rival Carrefour SA in May began testing a similar idea in Paris's posh 7th arrondissement with a market that's open 24/7. The stores lock their liquor cabinets and close meat counters and cheese-cutting stations, but shoppers can select what they want from other departments then proceed to the automated checkout. Security guards, typically outside contractors, keep an eye out for shoplifters. "We're responding to customer demand," says Alexandre de Palmas, director of Carrefour's convenience store division. He says hundreds of shoppers show up during the late-night hours, and there's more traffic earlier in the evening "because people aren't worried the shop will be closed when they get there."

French retailers say they need longer hours to remain competitive. In the largely stagnant market, the only way to grow is by taking share from a rival, and today there are more entrants than ever, with low-cost chains such as E.Leclerc, Lidl, and Aldi expanding across France and e-tailers taking a greater share of sales. "The internet has changed the game, and we have to adapt," says Sebastien Corrado, marketing director for the Casino group, which launched its program last December. "We're finding a way for physical retail to compete."

Unions call the strategy risky: Late-night partygoers and messy shoppers could wreak havoc. Worse, they say, the stores are normalizing the idea that consumers ▶

◀ should be able to shop at any hour, letting companies require employees to work undesirable shifts. "Sunday should be for rest, for spending time with friends and family," says Joanny Poncet, a union representative at Casino's Franprix chain. "There's no reason consumers can't plan ahead and shop another time."

Grocers have long been allowed to open on Sunday mornings, but the afternoons had remained sacrosanct. Owners say they're giving customers what they want and insist self-checkout machines haven't spurred job losses. If anything, Casino says, it means more staff on Sunday mornings to stock stores so they're ready to go when workers leave for the day. The company says a hypermarket in Angers, two hours west of Paris by train, now sees more than 1,000 customers on a typical Sunday afternoon, about as many as during the morning shift staffed by clerks. But France had 195,000 checkout clerks in 2014, down from 220,000 in 2005, and the shift to automated checkouts threatens to accelerate the decline.

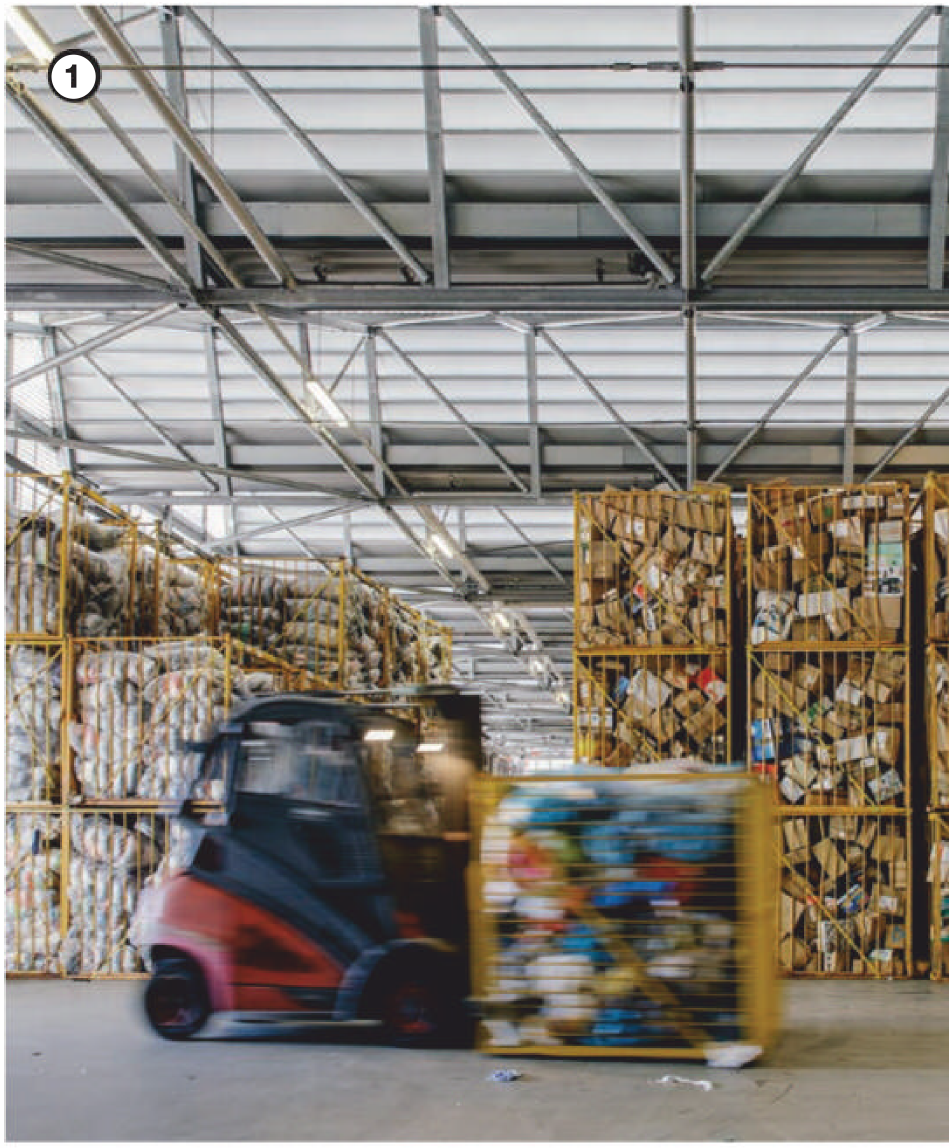
The trend toward longer hours got a big push in 2015 when Emmanuel Macron, economy minister at the time, tweaked the rules to allow shops in tourist zones to remain open all day on Sundays. Now, Macron's government is trying to make it easier for stores to stay open late into the evening by reducing the number of hours they're required to be closed overnight. But the French state doesn't always move in sync: Agnes Pannier-Runacher, a junior economy minister, suggested in an August radio interview that the late-night shops might be violating the spirit, if not the letter, of the law.

Cedric Lecasble, an analyst at MainFirst Bank AG, says France is simply following a practice that's been widely adopted in Japan, South Korea, and the U.S. While France's unions will put up a fight, he says more automation is inevitable, whatever a store's opening hours. "As consumers get used to making smaller, more frequent purchases and with e-commerce making it so they can shop whenever they wish," Lecasble says, "it's hard to envision that the unions will be able to block this forever."

On a recent Sunday at a Casino outlet in Les Lilas, a suburb just east of Paris, a security guard at the door tells customers there's no alcohol available. The shelves are less well-stocked than usual, but no one complains. Line Niget, a chiropractor, says she prefers to shop during regular hours, but the convenience is hard to resist. "If you offer a service, people are going to come," she says. Lucas Ghosn, a student, says even when clerks are present, he tends to choose the self-checkout. "I buy just a few items," he says. "The regular registers are usually full of people making bigger purchases." —*Robert Williams*

THE BOTTOM LINE French store owners say extended hours serve customers and won't spur job cuts. Unions say the trend will increase pressure on workers to take undesirable shifts.

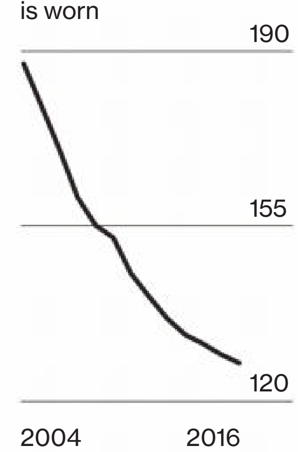
Sustainability



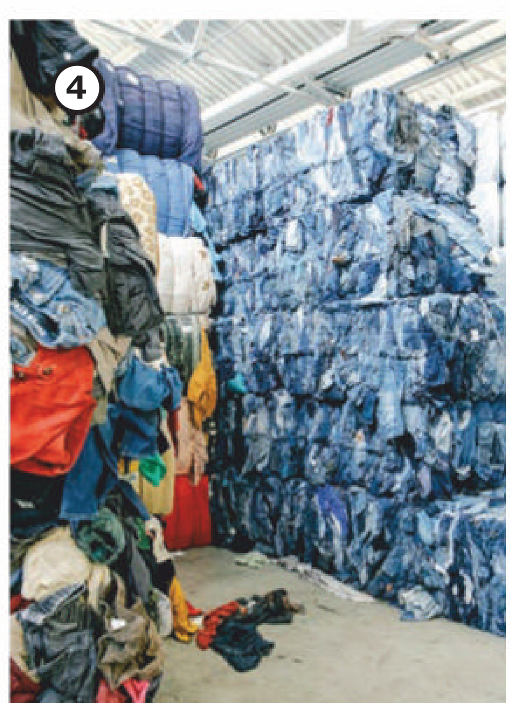
Everything Worn Is New Again

Retailers, especially fast-fashion chains such as H&M, are under pressure to lead the way on sustainability. And consumers want to know more about the life cycle of their purchases. H&M started collecting used garments from its customers in 2013, partnering with I:Collect, a Swiss reuse and recycling logistics company that picks up clothing and shoes in more than 60 countries. H&M moves the items to distribution centers. I:CO buys the merchandise and transports it to a partner recycling facility. —*Photographs by Felix Brüggemann*

● Average number of times a new garment is worn



❶ Unloading goods at SOEX, a recycling facility in Wolfen, Germany; the warehouse, one of several that I:CO works with, takes in about 300 tons of clothing daily ❷ Items are organized into categories, including shoes, apparel, and home goods ❸ Workers sort every item by hand, based on about 350 criteria ❹ Stored denim garments ❺ Some clothing is shredded and turned into a fiber mix, then sold to clients, including the retailers that first collected the garments, to be used in new textile products



DATA: ELLEN MACARTHUR FOUNDATION

I'M LOV

CEO STEVE EASTE
MCDONALD'S INTO

By Thomas Buckley and Leslie Patton
Photographs by Evan Jenkins

VIN' I.T.

RBROOK IS LEADING THE AGE OF CODE

Three years ago, Steve Easterbrook ran out of patience. Before flying home to Chicago for the Christmas holidays, he stopped in Madrid to meet with Spanish executives from McDonald's. In a conference room at the company's local office off the A6 highway, the mood soured as managers lamented heavy losses on the evenings when FC Barcelona and Real Madrid C.F. competed. Diners were staying home and ordering from archrival Burger King for delivery—a service McDonald's didn't offer.

Conceding to Burger King in any circumstance is an indignity, but losing hundreds of thousands of customers to the enemy's modernized tactics during one of Spain's most important weekly fixtures was the final straw. It represented everything that was defective at the business Easterbrook had been running for 22 months—McDonald's Corp. was just too analog. A week before he was named chief executive officer, the company announced it had suffered one of its worst years in decades as dejected U.S. customers abandoned the brand for Chipotle burritos and Chick-fil-A sandwiches. In the U.K. hundreds of artisanal burger competitors had appeared seemingly overnight on the food-delivery mobile app Deliveroo, which indulged the couch potato demographic with an unprecedented ease of access that felled the appeal of McDonald's drive-thrus. The time had come to address a weakness that stretched far beyond the company's Iberian territories.

"He looked at me and said, 'We're not going to go through the traditional market pilot and study delivery for six months. We're just going to do it,'" says Lucy Brady, who oversees McDonald's global strategy and business development teams. He instructed her to get every country manager on a conference call on Monday morning.

Brady cautioned him that it might be difficult to reach some managers who'd already left for the holiday; Easterbrook said everyone could spare a half-hour. He would command each manager to nominate their best executive to the task of building an online delivery business that would aim to be fully operational by the beginning of January—in two weeks' time. When Brady suggested they target delivery from 3,000 restaurants by July 1, he told her he would be disappointed if they didn't get to 18,000—about half of McDonald's locations around the globe.

Management's compensation would be tied to the speed and breadth of the rollout, and the only limiting factor Easterbrook would accept would be the number of couriers in cars, on bikes, and on foot that their delivery partners could supply. For the widest possible deployment, McDonald's teamed with Uber Eats. The partnership was so significant that Uber Technologies Inc. devoted two full pages to its then-exclusive delivery agreement with McDonald's in a roadshow prospectus ahead of Uber's initial public offering in May. Easterbrook now regularly uses the service while traveling on business to gauge its quality.

"I'm a Quarter Pounder guy," he says with a calculated slowness not unlike Daniel Day-Lewis's "I'm an oil man" in *There Will Be Blood*. The 52-year-old British CEO has the tall, broad frame of a rugby player, with thick waves of black hair and piercing blue eyes. He's described as an inscrutable blend of mild manners and obsessive competition by members of his fresh-faced leadership team. (Upon taking the top job in 2015, Easterbrook fired or let go 11 of the 14 most senior executives he inherited.) He expects the delivery business to account for about $4 billion in sales by the end of this year.

Catching up to Burger King on delivery would be the first item on a long list of improvements Easterbrook already had in mind for McDonald's. Broadly, he wants to reconfigure his restaurants into enormous data processors, complete with machine learning and mobile technology, essentially building the Amazon of excess sodium. Franchisees have balked at the costs of implementing his vision, which includes drive-thrus equipped with license-plate scanners (the better to recall one's previous purchases) and touchscreen kiosks that could ultimately suggest menu items based on the weather.

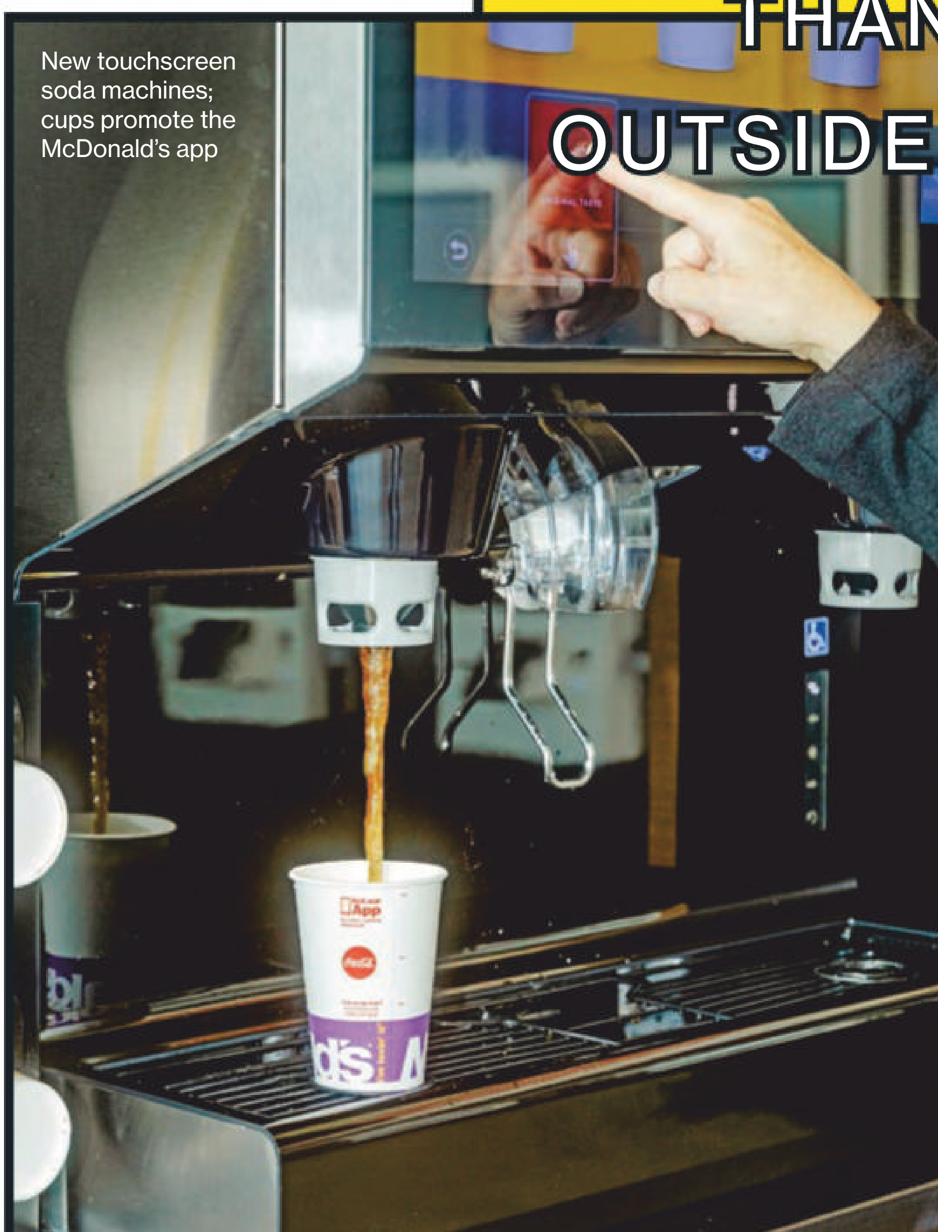
So far, the strategy has proved compelling: Only a handful of other companies in the S&P 500, almost all of them California technology suppliers such as semiconductor giant Advanced Micro Devices and chipmaker Nvidia, have outperformed McDonald's returns since 2015. The gains have generously rewarded institutional investors like BlackRock Inc. and Vanguard Group Inc., who've long been among the chain's largest backers. Easterbrook wants to reclaim the company's image as a beacon of innovation, a designation McDonald's hasn't enjoyed since roughly the Truman administration.

In 1940 brothers Dick and Mac McDonald redesigned and rebuilt their modest hot dog drive-in, in the shadows of California's San Bernardino mountain range, into McDonald's Bar-B-Q, which sold 25 items. By 1948 they dropped "Bar-B-Q" from the name and streamlined the menu to offer only the most profitable foods: hamburgers, cheeseburgers, potato chips, coffee, soft drinks, and apple pie. The restaurant seated about a dozen customers on outdoor stools and sold 15¢ hamburgers, which were bagged within 30 seconds of being ordered thanks to the pioneering Speedee service system.

The system had begun with the brothers sketching out life-size kitchen blueprints on a tennis court with chalk and having employees act out cooking and serving tasks. After settling on the fastest method, they contracted kitchen equipment companies to build machinery to support the choreography. Breakthroughs included custom-made saucing guns for the buns and curved steel ramps on which burgers would slide down into cashiers' hands to pass on to diners. At the time, only a handful of burger chains were using similarly bespoke hardware.

No one was as passionate about McDonald's potential for expansion as Ray Kroc, a struggling milkshake machine salesman from Illinois who met Dick and Mac at their restaurant in 1954 on a business trip. McDonald's had by far the most efficient kitchen he'd ever seen, and he immediately lobbied the brothers to let him franchise the business. In 1961 he bought out the co-founders for $2.7 million, and in 1965 he took the company public. Today, McDonald's is the world's most recognizable restaurant empire and a formidable real estate venture—its franchising model has earned the company a fortune by acquiring and subsequently leasing the land beneath stores to their operators.

For a half-century, McDonald's greased its way onto every continent except Antarctica. It stayed ahead of scores of copycats, but the baby boomer loyalty that propped it up has steadily waned. It's also become something of a cultural laggard. The suitability of McDonald's in a looming Age of Kale was aggressively pondered in *Super Size Me*, the 2004 documentary film in which director Morgan Spurlock attempts to subsist on the restaurant chain's food for a month. He cast the company as an abhorrent peddler of heartburn and substandard bowel movements. There's also the inevitable discomfort of being one of the world's largest purchasers of beef and poultry. Younger generations concerned about the environmental cost of industrialized meat are opting for plant-based alternatives such as Beyond Meat and the Impossible Burger, which is now available at Burger King. Animal-rights activists regularly erect giant inflatable chickens with bereaved expressions on the sidewalk outside McDonald's new head office in downtown Chicago.



New touchscreen soda machines; cups promote the McDonald's app

The company boasts a market valuation of $159 billion and an immense global reach, feeding about 1% of the human population daily. But even in the fast-food realm it dominates, its share of the U.S. market has shrunk to 13.7% from 15.6% in 2013, according to data from Euromonitor International, ceding ground to Pret a Manger and Panera Bread Co. In the burger wars, it's been besieged by cooler competitors with cult followings, including Shake Shack, Five Guys, and In-N-Out. Earnings began to stagnate at McDonald's in 2013 and crashed by almost a fifth, to $4.7 billion, the following year as diners deserted. Four months before stepping down in March 2015, Don Thompson, Easterbrook's predecessor, lamented that the company had failed to evolve "at the same rate as our customers' eating-out expectations." As insurgents claimed an ever-growing share of the market McDonald's had created, the morale at the old headquarters in Oak Brook—a tranquil if uninspiring 1970s amalgam of gray cubicles set in a parkland in Illinois—began to sap. The company's strategic quagmire took on a superstitious quality when the estate itself became a hive of bad omens, with parts of the office complex flooding on an annual basis.

"It was pretty obvious we were operating and moving slower than the outside world"

Easterbrook became global chief brand officer in 2013. The following year, he traveled to Cupertino, Calif., to sit down with Tim Cook, Apple Inc.'s CEO, to discuss being a launch partner for the Apple Pay mobile payment system. The card readers McDonald's used lacked the necessary technology, so Easterbrook had a digital add-on installed on every machine at its 14,000 locations in the U.S.

Easterbrook first joined McDonald's in the finance department in London in 1993, and spent the majority of his career there. After graduating with a natural sciences degree from Durham University, where he played competitive cricket alongside the future England captain, he worked as an accountant for the partnership that would become PwC. He later worked as a restaurant manager for McDonald's before being named to head its U.K. division, which he turned around in the 2000s after years of waning sales. In that role, he mounted a defense against fast-food critics by debating them on live television. He revitalized the company's image as a family-friendly outlet by introducing organic milk, cutting the fries' salt content, and offering free Wi-Fi. He also tried unsuccessfully to get the *Oxford English Dictionary* to amend its definition ▶

A shield at Chicago headquarters features one fry for each continent

◀ of "McJob," a slang term used since at least 1986 that denoted "an unstimulating, low-paid job."

In the fall of 2014, McDonald's went public with "Experience of the Future," an initiative Easterbrook had been shepherding. It reimagined the store entirely, from how orders were placed to what services were offered. In the upgraded restaurants, diners can use touchscreen kiosks to customize their burgers into millions of permutations, such as adding extra sauce and bacon to a Big Mac. The thinking was that giving customers more say over their orders would result in them paying more for tailored items. Some franchisees have benefited so much that their restaurants' sales are now growing at a double-digit rate. But others have banded together in open rebellion and forced the company to slow the program's full rollout two years past its original target. They object to the enormous costs of the project, which, for owners of several locations, can run into tens of millions of dollars, even with McDonald's offering to subsidize 55% of the capital for the remodels.

From a business perspective, the enhancements are achieving what they set out to do—annual profits have inched higher since Easterbrook's appointment, and McDonald's posted its fastest global sales gain in seven years last quarter. Initiatives such as all-day breakfast, which includes the staple McMuffin, and new products like doughnut sticks are also credited with bringing customers back even as the expanded menu hampers the classic McDonald brothers' efficiency.

The company has also introduced a curbside pickup system. An order placed through the McDonald's app automatically appears on the store's order list when the diner's phone is within 300 feet of the property. The food is prepared and delivered to the curb by floor employees. The workers and franchisees who've long complained about low hourly wages and poor working conditions in campaigns such as Fight for $15 have generally taken a dim view of Easterbrook's overhaul. Westley Williams, a Floridian in his early 40s, says the initiatives and the chaos caused by mobile app orders, new items, and self-order kiosks riddled him with so much anxiety that he defected to nearby burger chain Checkers. "It's more stressful now," said Williams, who added that he didn't get a raise for doing more work. "When we mess up a little bit because we're getting used to something new, we get yelled at."

Concerns about staff welfare have become a major issue for McDonald's in the U.S., where the median pay for food and beverage service workers is $10.45 an hour. Accusations of coercion soared this year after workers filed a total of 25 claims and lawsuits alleging endemic sexual harassment. The complaints have since become a national conversation and part of the political fabric: In June a group of eight senators led by Democrat Tammy Duckworth of Illinois and including 2020 Democratic presidential candidates Bernie Sanders of Vermont, Elizabeth Warren of Massachusetts, Kamala Harris of California, and Amy Klobuchar of Minnesota sent a letter to Easterbrook decrying "unsafe and intolerable" conditions and "unacceptable" behavior in the chain's restaurants.

Carlos Mateos Jr., whose family owns 21 stores near Washington, D.C., says Easterbrook's modernization has succeeded in attracting new customers to his restaurants, but revamping everything simultaneously was a burden. About a quarter of his franchises still need to be remodeled. "There's training that's involved. We have to get the employees ready for it—mobile order and pay and Uber Eats and kiosks. All these different things are happening at the same time, and it really took a toll on us."

Adding an Uber Eats counter for delivery, touchscreen kiosks, modern furniture, and power outlets to charge mobile phones means franchisees incur additional costs from $160,000 to $750,000 per restaurant, McDonald's has said. Blake Casper, a Tampa-based franchisee who operates more than 60 McDonald's and founded the National Owners Association last fall to resist Easterbrook's amelioration plan, would theoretically have to fork over at least $5 million to make the CEO's dream a reality.

"I would like to make the kitchen as stress-free as it possibly can be," says Eli Asfaw, who operates seven franchises in the Denver area. For a start, scaling back rollouts mandated by the company, such as all-day breakfast, would "make it easier for us to keep people and make our people happy." Asfaw also says the remodeling plan has heaped pressure on owners, from financial headwinds to the tight window in which the company wants the upgrades to be completed.

The resistance from a faction of franchisees to Easterbrook's mandated remodels—in some cases drastic enough to require a restaurant to be razed and rebuilt—reached a breaking point in January. The National Owners Association wrote in a letter to its 400 members then (it now counts more than 1,200) that the changes should be halted amid concerns about eroding profits and the costs of implementing Experience of the Future. "To put it bluntly," the letter read, "stop everything that is not currently in the works."

Easterbrook concedes his rollout hasn't been perfect. "We were just going so hard at it, it proved to be a bit of a handful," he says of introducing the features in the U.S., many of which had already been phased in years before in France and Australia. While franchisees were right to put off remodeling to ensure they weren't distracted from efficiently running their restaurants, the domestic business was in dire need of a significant revamp, he says. The number of customers visiting U.S. stores had been declining in the last half of his predecessor's tenure. "It was pretty obvious we were operating and moving slower than the outside world, and customers were voting with their feet."

In November, McDonald's said it was slowing the pace of remodels in the U.S. The conversations are often fraught. When Easterbrook invited eight franchisees to break bread with a group of McDonald's executives at a steakhouse in Washington, D.C., in April, one operator accused him of saddling stores with impossible demands. For longtime managers who back Easterbrook's goal and enjoy the internal energy it's created, the prospect that his plans could fall through is unthinkable.

"When they ask a question that's a bit of an attack, I sit there and get a little pissed, because I'm ready to lean in," says Charlie Strong, a 66-year-old McDonald's executive who oversees more than 5,700 restaurants across the western U.S. He affixes a lapel pin of the letter "M" in the style of the golden arches logo to a navy Brooks Brothers blazer, and his right pinkie is weighed down by a 14-karat yellow gold ring inset with five diamonds, onyx, and the golden arches. The company gave it to him to celebrate his 25th anniversary with McDonald's. He expects to receive another for his 50th in two years.

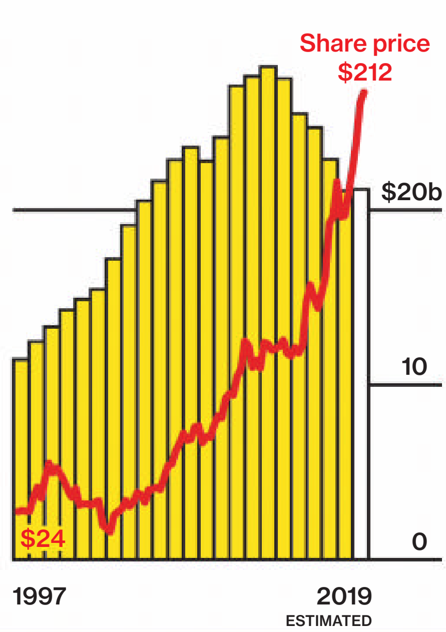
Strong says one of Easterbrook's key qualities is that he doesn't take any criticism of his strategy personally. "He just rolls with it and swings it back to what's important about the business, what's important about the vision, and to not get bogged down with these little things along the way."

Easterbrook's strategy so far has been vindicated by the numbers. That tailwind is breathing new life into the business. Strong drives 40 miles from his home in Aurora, Ill., every morning to be at his desk by 6 a.m., where he and a handful of other masochistic early risers blast rousing tunes by Journey or Adele on a Bose sound system to get the day going. It's a routine they began after moving into the new head office, a $250 million building replete with sofa pods in the red and yellow McDonald's color scheme, an amphitheater, rooftop terraces, and thousands of antique and modern Happy Meal toys locked inside cased glass like priceless museum specimens. Easterbrook opened the office in June of last year in a bid to attract young, tech-forward talent.

In March, McDonald's acquired artificial intelligence startup Dynamic Yield, headquartered in New York and Tel Aviv, for $300 million—the company's largest acquisition in 20 years. The burger chain had been testing the machine learning software on drive-thrus at four restaurants in Florida, where screens automatically updated with different items based on the time of day, restaurant traffic, weather, and trending purchases at comparable locations. That technology has been deployed at 8,000 McDonald's and counting, with plans to be in almost all drive-thrus in the U.S. and Australia by the end of the year, Easterbrook says. The deal signaled an ambition to align the chain with the same predictive algorithms that power impulsive purchasing on Amazon.com or streaming preferences on Netflix. In April, McDonald's acquired a minority stake in New Zealand-based mobile app vendor Plexure Group Ltd., which helps restaurants engage with diners on their phone with tailored offerings and loyalty programs. The effort falls into the consumer-goods industry's wider trend toward micromarketing, which has proved effective in driving sales.

In early September, McDonald's said it was buying Silicon Valley startup Apprente Inc., a developer of voice-recognition technology. The idea is to help speed up lines by eventually having a machine, instead of a person, on the other side of the intercom to relay orders to kitchen staff. The deal for Apprente is McDonald's third such investment in a technology business in the past six months as the company shakes off a tamer takeover strategy that for decades had focused on buying and selling restaurants from or to operators. McDonald's is pursuing this new business model even as the latest burger trends steal the buzz from its offerings. Beyond fashionable vegan patties, a new and daunting foe is the fried chicken sandwich at Popeyes Louisiana Kitchen (a Miami-based chain owned by the same company that controls Burger King), which became a national obsession when it was introduced in the U.S. in August.

McDonald's revenue



McDonald's has leased space in a discreet industrial complex more than an hour away from headquarters, where a gray building about the size of an aircraft hangar, with a single column painted yellow and dotted with sesame-seed stencils, has become a testing ground for putting Easterbrook's thoughts into practice. But for all the technological breakthroughs, the deals, and the jousting with franchisees, the company's guiding light has barely changed. Inside a room beyond a corridor stamped with the word "innovate" in block capital letters, the hum of computers and data processing towers is drowned out by a cacophony of test-kitchen staff running trials on secret processes that aim to shave seconds off a Big Mac's assembly, much like in the old days, when McDonald's first upended the food industry. "In old-school business logic, the big eats the small," Easterbrook says. "In the modern day, the fast eats the slow." Ⓑ

DATA: COMPILED BY BLOOMBERG

For one week on the *Celebrity Solstice*, listeners of a podcast devoted to rebutting the Nobel Prize-winning economist get to be with their own kind By Lizzie O'Leary

The Anti-Krugman

A cruise ship, by its very nature, is a floating monument to capitalism. Thousands of passengers are paying thousands of dollars for the chance to be upsold. Special dinner? Excursion ashore? Botox? All available for a price. Cruises offer distinct fare classes, staff primed to cater to any impulse, and all-day ice cream buffets.

This particular ship, the *Celebrity Solstice*, bound for Alaska's Inside Passage, holds about 2,800 patrons and looks like the offspring of a jet-age airport and a Las Vegas casino, lightly dosed on acid. Up in the top-floor Sky Observation Lounge, 111 passengers, all varying flavors of libertarian, are assembled for the fourth annual Contra Krugman Cruise, a weeklong meetup for like-minded listeners of the eponymous podcast. As its moniker implies, the show is dedicated to rebutting the Nobel Prize-winning economist Paul Krugman's weekly *New York Times* column. Its hosts, Tom Woods and Bob Murphy, dissect Keynesian dogma and revel in finding reversals in Krugman's positions and in plain old partisanship.

But neither podcast nor cruise is really about Krugman, per se. Sure, the podcast's introduction calls him a "destroyer of nations," but the man himself is merely an avatar—intellectual shorthand for people who see the state as the solution and regulation as the answer. (Woods's taste runs more to Murray Rothbard, a theorist who once called the state "a parasitic institution that lives off the labor of its subjects.") For the crowd in the Sky Lounge, the true point is one another. "Being a libertarian tends to be lonely," says Adam Haman, a gregarious 51-year-old poker player from Las Vegas who's been on every Contra Cruise. A week with these people is his ideological safe space. A place to be in the majority, instead of the fringes. His way to be around "people who think that libertarianism is the right way to have a civil society."

For one brief week, Contra Cruisegoers would get that civil society at sea. Here's a community of people who believe that aggression is wrong, that taxes are tantamount to theft, and that most big societal institutions are rigged. They are largely, though not entirely, white, and they are generally open to home-schooling their children. Woods and Murphy are to be their pied pipers, leading them through a week of economic seminars, libertarian party games, and Oxford-style debate on topics such as the merits of pacifism, with bonding and dad jokes to spare.

In his Sky Lounge welcome talk, Woods obliquely compares Murphy's bulky frame to a whale's. When Murphy later takes the mic, he begins in whale song. The crowd, having spent some time at the open bar, absolutely loses it.

Libertarians at Sea

Woods and Murphy got to know each other when they were both lecturers at the Mises Institute for Austrian Economics, a libertarian think tank in Auburn, Ala. It champions the work of Ludwig von Mises and the school of Austrian economics: the belief that market forces can and should determine the price of everything, even money itself. The institute is also the fruit of a rather famous libertarian schism: Rothbard co-founded it in 1982, after leaving the Cato Institute, which he'd also co-founded, and accusing the Koch brothers, Charles and David, of watering down libertarianism. (Rothbard, who died in 1995, argued for "right-wing populism" in support of neo-Nazi David Duke, and his work has been embraced by some members of the alt-right.)

Some Mises followers, including several who are on the cruise, identify as "AnCaps," or anarcho-capitalists, meaning they'd happily get rid of the state and let society self-regulate through the free market. Woods is among them, a 47-year-old AnCap historian who lives in Florida and has written 12 books and also hosts another podcast, *The Tom Woods Show*. It's less econ-focused than *Contra Krugman*, with Woods and his ideologically compatible guests often critiquing political correctness, which they call "allowable opinion." Inclined toward neoconservatism in college, he changed his mind and began to question interventionist foreign policy after the first Gulf War. He was an early member of the League of the South, which he says was formed to study Southern history and Jeffersonian democracy. It's since been designated a hate group by the Southern Poverty Law Center, and Woods calls its latest turn "off the rails" and abhorrent.

In conversation, he's direct, at times confrontational. He says he expects this story to be negative. "If you trash us, that helps us. Anybody who is driven away from our cruise by an article like this was never going to spend thousands of dollars with us anyway."

Murphy is far more laid-back, with a rumpled-professor mien that disguises a darkly comic sensibility. He's 43, an economist specializing in climate change at the Institute for Energy Research, a nonprofit in Washington that promotes free markets and has received funding from conservative donors. Murphy discovered Austrian economics in high school and chose Hillsdale College in Michigan, which is famous in conservative circles for rejecting federal funding. The draw for the budding economist, though, was the school's library, which held Mises' archive.

Some 20 years and a lot of scholarship later, he found himself being pitched by his Mises Institute colleague on a joint podcast. Woods was struck by how much of Murphy's ▶

PHOTO ILLUSTRATION BY 731; PHOTOS: GETTY IMAGES (4); BLOOMBERG (1); COURTESY CELEBRITY CRUISES (1)

◀ writing on the 2008 financial crisis cast Krugman as his mainstream foil. The two libertarians were friends, but Murphy was initially unconvinced. "I'm going to become known as the economist who disagrees with Krugman," he recalls thinking. "It's going to be a negative." But he enjoys deconstructing opposing ideas. Plus, he has a remarkable memory, especially where Krugman is concerned.

The show's format is straightforward. Woods, the snarky showman, summarizes and reads part of a Krugman column, setting up a deadpan disquisition on Austrian economics from Murphy. Woods won't reveal audience numbers, but he says his personal show has almost 50,000 weekly listeners and that many of them overlap. *Contra Krugman* will sometimes take on Democrats, socialism, the mainstream press, political correctness, and even Donald Trump, but Krugman remains its animating force. Episode 170 dissects a 2018 column in which Krugman argues that partisanship overrides even the most die-hard monetary hawk and that Republicans who objected to prime rate cuts by the Federal Reserve under President Obama were hypocritically changing their stripes under Trump. In response, Murphy rattles off Krugman's reversals on debt and deficits over the years. In the George W. Bush years, he says, they mattered so much that Krugman changed his mortgage. In the Obama years, decidedly less so. Come Trump, deficits matter again. "So clearly," Murphy says, "he was a hypocrite there." (It's worth noting that macreconomic conditions have also varied significantly.) Krugman was unavailable for comment.

Episode 178 is based on a February column that lauded Elizabeth Warren's child-care plan. "Don't worry," Murphy says. "Krugman assures us it's not going to be too expensive. It's only $70 billion per year!" The idea that government and regulation might help is almost ludicrous to Murphy. His flat Rochester, N.Y., accent gives way to sarcasm, cranking higher. "That's why health care is so affordable to everybody. Because the government has gone into those two areas, regulated the heck out of it. And subsidized it. And that's why the two areas of American society that everyone agrees are great and efficient are education and health care."

When Matt and Becky Jones were en route to the cruise from Omaha, she worried the week would be a real-life version of a squabbling libertarian Facebook group. Instead, the couple found two kindred spirits, Noah and Liz Boren from Indiana. (The cruise has its share of single men—a libertarian stereotype—but more than half the passengers are in couples.)

Matt and Becky, both in their 30s, are two-time Obama voters who grew disillusioned by forever wars in Iraq and Afghanistan and frustrated by the Democratic Party, which they think is consumed by hysteria over every action by Trump. "There are people dying in Yemen right now because we are funding the Saudis," Becky says. "I don't give a shit what Trump tweeted from the toilet this morning."

The two couples repeatedly stay up until the early morning,


Murphy


Woods

bonding and sharing their libertarian conversion stories and the isolation they felt when explaining their new politics to friends and family. (More than once they roll into the morning seminars hungover.) "We told his mom about the whole idea of libertarianism," Becky says over dinner one night. "And she was like, 'Oh, so you just want kids to starve in the street?' And we were like, 'Jesus Christ, when about free markets and not being taxed to death did you get we want kids to starve in the street, Pam?' " Across the table, the Borens dissolve into knowing laughter. This was a budding friendship that would last beyond the cruise.

Noah and Liz, who are also in their 30s, host their own fledgling podcast, *When Can I Quit My Job?*, about financial independence and early retirement, and it turns out the Joneses are listeners. "Some nonfamily members!" Liz says, laughing. The Borens started podcasting after learning the how-tos from Woods's website. Indeed, podcasts were integral to their libertarian conversions. While he was on his rounds as a mail carrier in Fort Wayne, Ind., Noah had started listening to comic Joe Rogan's freewheeling and chaotic show, *The Joe Rogan Experience*, which led him to Woods's podcasts. He fell into what he calls a libertarian rabbit hole, increasingly feeling as if neither major political party was the right home for him. He also became disenchanted with working for the government. The shows he was listening to promoted the kind of financial independence he and Liz were seeking; he left the Postal Service and now sells land, and she works in customer service.

There is a sense, especially among the more recent converts aboard the *Celebrity Solstice*, that many of the tenets they'd grown up with had failed. Student debt was an inescapable albatross. Education didn't necessarily get you ahead. Politicians promised things, then lied. If everything felt broken, why not become an individualist who doesn't believe in any system? The election of Trump only solidified their belief that government was a joke. Late one night, Haman, the Las Vegas poker player, says, "He's so bad, he's finally making everyone view the presidency as I always have."

Politics isn't the only arena where skepticism of large institutions is evident on board. Libertarians' distrust of the banking system has made them natural enthusiasts for cryptocurrency, which is independent of the banking system and the Federal Reserve. There are no formal seminars on crypto, but it's a frequent topic of conversation when passengers mingle at the Sky Lounge at night or eat under the giant chandeliers of the ship's Grand Epernay dining room. (Contra Cruise passengers sit separately from the rest of the 2,700 guests, and Murphy and Woods rotate

MURPHY: COURTESY MURPHY. WOODS: GAGE SKIDMORE tables so they can join everyone at least once.)

Musician Dan Hagen was turned on to Bitcoin by another passenger on the Contra Cruise two years ago. He decided to buy some as an experiment in the fall of 2017. "I put $100 down when it was at $7,000," he says. "Instantly it shot up, I liked how it felt, I put in another couple hundred bucks." But he sold off his holdings not long afterward, in part because Bitcoin futures started being listed on the Chicago Mercantile Exchange and that was too mainstream for him. "I didn't trust it. There are powers that be that don't want this to take off," he says.

Tatiana Moroz has her own cryptocurrency, Tatiana Coin. A musician like Hagen, she's performed on multiple Contra Cruises. (The cruise covers their costs, and they sing in the Sky Lounge most nights.) She was once a Dennis Kucinich supporter, until a friend started sending her online documentaries, including one called *America: Freedom to Fascism* that contends that the Internal Revenue Service and Federal Reserve are perpetrating frauds on the public. In 2012 she recorded a folk album, *Love and Liberty*, inspired partly by the antiwar singer-songwriters of the 1960s. Around the same time, she learned about Bitcoin. She'd been managing recording studios in New York, increasingly frustrated that artists were paid only at the end of the chain after record companies and streaming services got their cut. Tatiana Coin seemed like the perfect way to make money and connect with her audience. In practice, Tatiana Coin works more like a digital gift certificate on her website than a true cryptocurrency, but it fits with her independent philosophy. "You have a direct connection with your fans, with no intermediary, and you retain that forever, as long as they hold the coin." Celebrity Cruises, however, still doesn't accept cryptocurrency, so onboard perks, drinks, and excursions ashore have to be paid for the old-fashioned way.

As the *Celebrity Solstice* sails to gold rush-era ports and past the Tongass National Forest, it's impossible not to feel awe and at least some twinge of concern that thousands of visitors are being bused to the edge of a glacier that was a little bigger last year. On one of the cruise's last days, two short horn blasts sound: wildlife on the starboard side! It's a group of harbor seals, gray sausages peering up at the massive ship from a small floe. The passengers hurry over to look.

Alaska's Inside Passage is almost comically stunning—sky and water, bald eagles overhead. At one point, while an episode of *Contra Krugman* is being taped, a few audience members are distracted by leaping humpback whales outside the conference room windows.

The libertarian view on climate change can be a little hard to pin down. For Contra Cruise passengers, it ranges from "caused by solar flares" (disproven) to "actually, we may need governments on this one." Most passengers are somewhere in the middle. Gene Balfour, who's running for Parliament in this fall's Canadian election as a member of the People's Party, a breakaway group founded by a former Conservative cabinet minister, sketches out a theory that questions aspects of human-driven climate change, arguing that there's not enough carbon dioxide in the atmosphere to cause the Earth to warm. (Multiple peer-reviewed studies have found there's enough carbon dioxide and water vapor to trap radiation and create warming.)

Murphy, in a lecture to a full room of about 100 people, offers the thesis that yes, climate change is real, and humans caused "some of the warming," stressing that he's arrived at that conclusion after studying mainstream data from the Intergovernmental Panel on Climate Change and Yale economist and Nobel laureate William Nordhaus. But, he adds, the scientific consensus is overstated, and attempts by governments to mitigate the threat are sure to be a mess and potentially make the world poorer. In a libertarian world, he argues, society would be richer and the costs of mitigation could be borne by individuals and philanthropies instead of governments and taxpayers. "If humanity really does face this problem, there's technological ways to deal with it," Murphy says to the crowd. "And that's kind of the pattern of history. As opposed to just relying on a systematic coordinated effort of governments around the world to do the optimal carbon tax."

After all the morning lectures and debates over dinner, the Contra Cruise was in the end about having good, clean, unregulated fun. In a conference room on the 14th floor, Libertarian Pictionary was under way. One team was laughing deliriously as it tried and failed to draw the Affordable Care Act. (The cardinal rules of Libertarian Pictionary, it became clear, are to maintain a self-aware sense of humor and to guess "Ron Paul!" anytime anyone draws anything.)

At a talent show, Laura Blodgett, a home-schooling mother of seven from Idaho, performed a song called *Krugman, You're So Wrong*, set to the tune of Linda Ronstadt's *You're No Good*. There was even libertarian *Family Feud*, complete with sound effects, projected graphics, and team names such as the Mises Pieces. Murphy was the event's Richard Dawson or Steve Harvey, depending on your vintage.

"Name something," he said into the microphone, "you associate with California."

"Taxes!" shouted one of the contestants. Ding, ding, ding! On to the second contestant.

"Nuts and flakes!"

Wrong, though "insanity" later appeared on the board. Other correct answers: "bad for business," "communism," and "marijuana."

Another question: "If Paul Krugman retires, who should Bob and Tom refute?"

"Alexandra something!"

Close enough. The answer on the board was Alexandria Ocasio-Cortez. Others were Robert Reich, Bernie Sanders, Elizabeth Warren, and Donald Trump. That was the Contra Cruisers: railing against the Left, but almost as angry at the Right. At sea, literally and politically. Unable, and in many cases unwilling, to participate in mainstream politics but thrilled to be part of a floating utopia where everyone agreed.

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A wealthy businessman rides a wave of
concentrates power in his hands, and cozies up

Mongolian President Battulga Khaltmaa ▶

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discontent to the country's highest office, to Putin. This time, though, there are horses

By Matthew Campbell and Terrence Edwards
Photograph by Bat-Orgil Battulga

ONE MORNING IN JULY, MONGOLIA'S PRESIDENT, BATTULGA Khaltmaa, prepared to take the podium at the National Sports Stadium in Ulaanbaatar. He was there to officially open the traditional summer festival of Naadam, during which virtually everyone in the country of 3 million celebrates feats of archery, wrestling, and especially horsemanship. Riding has been central to the national culture since the 13th century, when a tribal leader named Genghis Khan united a disparate group of steppe clans and conquered much of Eurasia.

A champion martial artist in his youth, Battulga is squat and powerful, with a thickly muscled neck and ears slightly squashed from years of grappling. He wore a dark fedora, leather riding boots, and a wine-colored *deel*—a fancy version of a traditional herder's robe—cinched at the waist with a broad sash. As he awaited his turn to speak, two teams of riders in red-and-blue uniforms performed an impressive display of coordinated dismounts. After remounting their steeds in one swift movement, they tore away for a lap around the stadium, a rushing eddy of pointed helmets and bouncing tails.

Battulga stepped to the mic. "Genghis Khan, the great lord and our beloved forefather," he said, "your horses are agile, the strapping wrestlers are adept, and the archers are well-aimed." Naadam, he proclaimed, "is an occasion that makes each and every one of us understand the essence of being a true Mongol."

The great Khan, Mongolia's official national hero and a man Battulga so reveres that he constructed a 130-foot-tall statue of him, was the most feared leader of his era. His forces killed millions, many in mass beheadings, as they tore across the continent. Hardly a model democrat, in other words. Yet for most of the past three decades the country that glorifies him has been considered a star pupil of the West. European and U.S. leaders praise Mongolia as an oasis of liberty and capitalism, blessed with abundant mineral reserves, a young, worldly population, and a fervent desire to chart a path apart from its powerful neighbors, Russia and China.

This perception has elevated Mongolia in the minds of foreign investors, notably Rio Tinto Plc, which is counting on the giant Oyu Tolgoi copper and gold project in the far reaches of the Gobi Desert, one of the world's most ambitious mining developments, for much of its future growth. But though Mongolians have undoubtedly benefited from capitalism—gross domestic product per head has risen tenfold since 1994—polls indicate that many are deeply frustrated, believing their country's mineral wealth has been stolen by outsiders. This sentiment fueled an explosion of anti-establishment anger that brought Battulga, a populist businessman, to power in 2017.

Under him, Mongolia's trajectory has shifted. Battulga has cozied up to Russian President Vladimir Putin, and earlier this year he ignited a political crisis by getting legislation passed that gives him the effective power to fire judges and top law enforcement figures. He promptly used it to remove a range of judicial officials—a move he cast as necessary to fight corruption and preserve the long-term health of the country's democracy. "Mongolians are very loyal to the decision to have a democratic political system," he told *Bloomberg Businessweek*.

Although Mongolia's reserves of copper, gold, iron ore, and rare earths make it an attractive partner for the U.S. and its allies, it's been arguably more important to them as an example. Situated in an otherwise unbroken arc of authoritarianism extending from the South China Sea to Central Europe, the country rebuts the notion that some parts of the world aren't suited to liberal values. As Battulga consolidates his position, though, some Mongolians are asking whether they can remain an exception. Oases do, after all, have a way of drying up.

THE IMMEDIATE FOREBEAR OF MODERN MONGOLIA, THE Mongolian People's Republic, was nominally independent, but in practice it was a Soviet client state. It began collapsing in early 1990, after student protesters thronged the center of Ulaanbaatar. Within months there were multiparty elections, some of the first in the former communist bloc. An economic backwater even by Soviet standards, Mongolia switched to market capitalism virtually overnight, leaving many people disoriented but creating enormous opportunities for those with the instincts or connections to take advantage.

▲ Riders compete during Naadam

INJINAASH BOR

Battulga was among the latter. Raised in a tough neighborhood on the capital's outskirts, he distinguished himself in the 1980s as a competitor in *sambo*, a martial art favored by the Soviet Red Army. Competing abroad gave him opportunities to import luxuries such as denim and VHS cassettes, and when the Iron Curtain fell he parlayed that experience into a thriving business called Genco, after Vito Corleone's olive oil front company in *The Godfather*. Battulga's enterprises gradually grew to include a hotel, a meat plant, a fleet of taxis, and a tour agency, all in Ulaanbaatar.

His most ambitious business project was the statue of Genghis, an hour from the city on a plain nestled between two chains of bald mountains. Banned from public display under Communism, Genghis afterward regained his status as Mongolia's most venerated leader, his name or likeness appearing on its main airport, a popular vodka, and several denominations of its currency, the tugrik. The statue, depicting him on horseback, required 250 tons of stainless steel and became a statement of national pride and an offbeat tourist destination. The museum inside the base features a 30-foot-high riding boot, constructed with leather and 79 gallons of glue.

Battulga was elected to parliament in 2004 and became minister for transportation and construction four years later. The country was about to need both enormously. Chinese demand for copper, coal, and other commodities—Mongolia's only meaningful exports—was soaring, creating a dramatic mining boom. In 2009, Rio Tinto struck a 30-year deal with the government to develop Oyu Tolgoi's vast deposits, becoming Mongolia's largest foreign investor and driving competitors to scour the country for their own finds. The money spent to develop the site helped GDP grow by 17% in 2011, the fastest pace in the world. As investment bankers and mining engineers poured into Ulaanbaatar, the dusty capital began acquiring the trappings of luxury: sushi, Porsches, a Louis Vuitton store. Officials tore down the last Lenin statue and erected one nearby to honor that accomplished Eurasian capitalist Marco Polo.

Then, almost as quickly as it began, the boom was over. Commodity prices collapsed in 2014, and the tugrik plunged, making the imports to which people had grown accustomed unaffordable. Construction jobs, the livelihood for thousands of rural migrants to the capital, disappeared. The Mongolian government had to slash civil servants' pay, cancel infrastructure projects, and seek a bailout from the International Monetary Fund. The Louis Vuitton boutique closed.

Public fury mounted—against allegedly corrupt politicians, the wealthy, Rio Tinto. Battulga, still in parliament, was effective at stoking the mood even though he was one of the country's most successful people and was himself being investigated over suspicions that he'd helped embezzle money from a railway project. (He denied wrongdoing and was never charged.) In 2016 he spoke at a rally called to protest economic injustice. "Our wealth is shipped outside of the country," Battulga complained. "Where is that money going?"

The next year, he ran for president. Although he avoided direct comparisons, there were clear parallels with Donald Trump's presidential campaign. Battulga portrayed himself as an outsider and an aspirational example, packaging his governing program in the MAGA-esque slogan "Mongolia Will Win." Thanks largely to support from the poor, he surprised pollsters by finishing ahead of his main rival in the first-round vote and winning the runoff comfortably.

For the first part of Battulga's term, Mongolia's prime minister, Khurelsukh Ukhnaa, tended to occupy center stage. The prime minister runs day-to-day parliamentary business, while the president handles foreign affairs, oversees judicial appointments, and introduces legislation. The two men were from opposing parties, but that didn't prevent them from cooperating. Mongolia's main factions aren't really split on ideological lines, and Battulga draws much of his parliamentary support from Khurelsukh's party.

Battulga seized the spotlight early this year, when he started publicly pressuring Mongolia's prosecutor general to open a corruption investigation into the previous president, Elbegdorj Tsakhia, a Harvard-educated liberal, claiming Elbegdorj had improperly tried to sell a vast coal deposit to foreign interests. (A spokesman for Elbegdorj denied the allegations.) The prosecutor refused, saying he needed a valid legal justification to open an inquiry. On March 26, Battulga introduced "urgent" legislation to give the National Security Council—consisting of the president, the prime minister, and the speaker of parliament—the power to fire a range of judicial officials. Legislators from Battulga's own party boycotted the vote, criticizing the law as unconstitutional. But it passed in around 24 hours, thanks to support from Khurelsukh-aligned legislators, many of whom were themselves under investigation for graft.

Activists and other critics were apoplectic, but Battulga was unmoved, arguing the changes were needed to break a deep-state cabal protecting "political-economic interest groups." Judges, police, and even spies were all part of a "conspiracy system that shields the illegal activities of these groups," he told parliament.

The day after the law passed, Battulga removed the chief prosecutor who'd resisted him, as well as the chief justice of the Supreme Court. In May, the director and second-in-command of Mongolia's anticorruption agency—the body that had investigated Battulga over the railway project—were also removed. The next month, 17 judges, several of them on the Supreme Court, were stripped of their powers.

BATTULGA WORKS IN THE STATE PALACE, A LEADEN EDIFICE that would seem straight from a Soviet drafting table were it not for a new facade and a statue of Genghis. A huge map of Mongolia dominates the formal meeting room where the president greets visitors, with thumbtacks to represent mineral deposits: yellow for uranium, black for iron ore, and so on.

Battulga is 56, but age has barely diminished his physical presence, and he leaned far forward in his chair while being interviewed, elbows perched on his knees like a coach watching his athletes compete. (Battulga is a past president of the national judo federation, which won Mongolia's first-ever Olympic gold medal during his tenure.) His manner was anything but Trumpian, marked by quiet and careful speech in a gravelly voice.

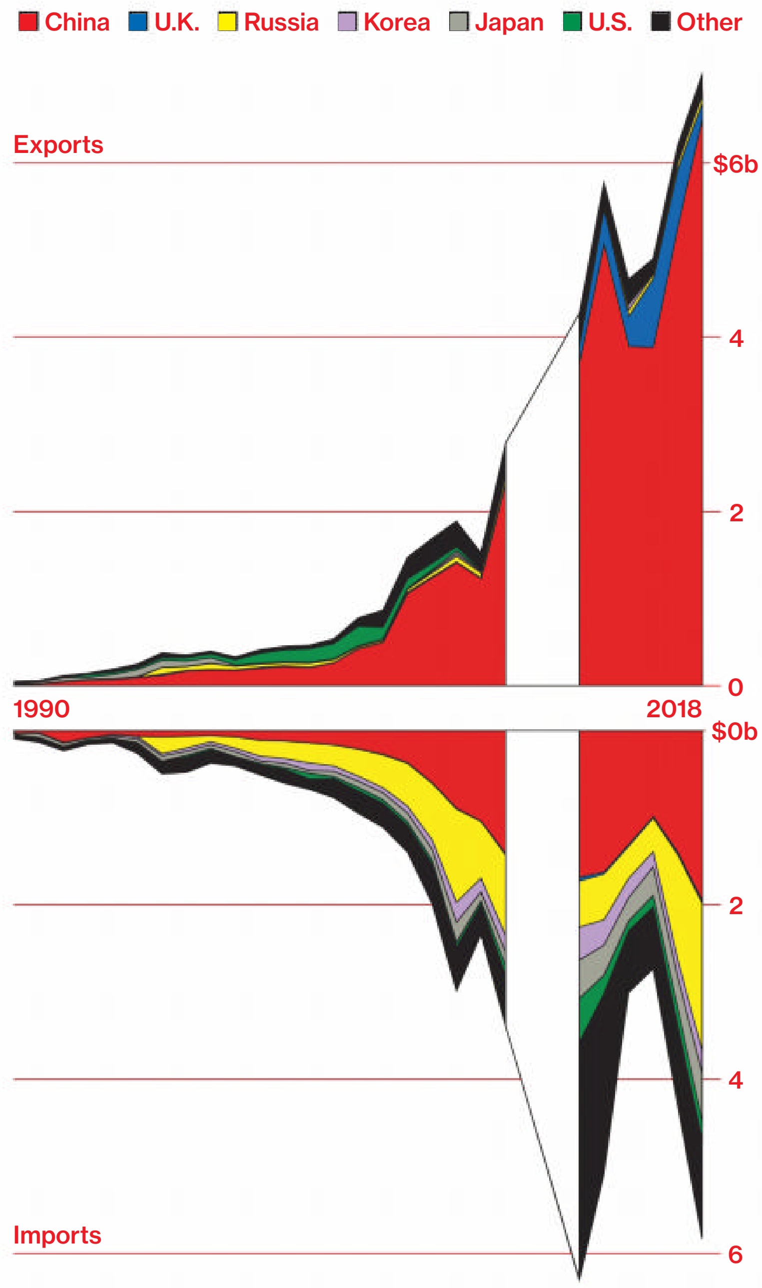
But Battulga presented himself, like Trump, as a man whose success taught him how things really work. "I know all the phases of the Mongolian economic transition well," he said. "I also know that the Mongolian judiciary, prosecution system, and anticorruption agency have become bodies that cover ▶

◀ and work for certain people." If their influence isn't disrupted to allow ordinary citizens to be heard and prosperity to be shared more broadly, he said, "Mongolia may go backwards, to a point where there would be many years of chaos." He defended his law enforcement purge, arguing the three-person security council is an adequate safeguard: "I don't hesitate to say that I made the right decision, and I will always stand by it."

The corruption Battulga argues is rife stems from only one real source: mining. Starting in the 1990s, he said, "parliament members and ministers who had access to information on natural resources and legislation pocketed the money from big mining projects." In an implicit rebuttal to critics who accuse him of dismantling institutional guardrails, he cited one of the world's strongest democracies as a model for Mongolia, saying his government is studying how countries such as Norway "have managed resources for the public good."

Discussions about managing Mongolia's resources tend to turn rapidly to Rio Tinto. The 2009 Oyu Tolgoi deal gave the state a 34% stake in the project, paid for by a loan from its developers. The interest Mongolia must return is substantial, and it won't receive dividends until the debt is covered—currently expected around 2040. Oyu Tolgoi is nevertheless already crucial to the economy, with more workers than any other private employer.

Golden Hoards



Top exports, 2018	
Coal briquettes	$2.8b
Copper ore	2.0b
Crude petroleum	392m
Iron ore	342m
Animal hair	281m
Zinc ore	198m
Fluorospar	190m
Gold	144m
Refined copper	82m
Prepared meat*	79m

*EXCLUDES SAUSAGE

Top imports, 2018	
Refined petroleum	$1.1b
Cars	408m
Delivery trucks	284m
Electricity	143m
Iron structures	137m
Large construction vehicles	133m
Phones	108m
Packaged medicaments	96m
Raw iron bars	84m
Excavation machinery	69m

DATA: UN COMTRADE. NO DATA AVAILABLE FOR 2011-2012

To many Mongolians, foreign ownership of a key national asset is unacceptable. A 2019 survey by the Sant Maral Foundation, the country's most prominent polling outfit, found that 89.9% of respondents wanted "strategic" mines to be majority-owned by Mongolians. Only 0.5% said they should be foreign-controlled. But the costs and challenges of operating such a large and complex mine, in such a remote area, mean Oyu Tolgoi is only viable in the hands of a company such as Rio Tinto. The mine is currently an open pit; a planned underground expansion, necessary to tap the richest deposits, will be even more difficult to execute.

Although Battulga has no formal power over Mongolia's relationship with Rio Tinto, he wields enormous political influence, and he's pushed to revisit the deal. He complained during the interview that Mongolia hadn't fully understood its implications, calling it a "mistake made by an inexperienced country, relatively new to democracy." He favors a partial renegotiation. "If circumstances change, or we realize new things, companies renegotiate," he said. "It's international practice."

Battulga is more measured than lawmakers who want to scrap the agreement and start over, insisting Mongolia must honor its commitments. Revisiting the arrangement would be risky. Oyu Tolgoi is already expected to take longer and cost more than planned, and trying to overhaul the underlying agreements "would threaten the future of the project," Rio Tinto wrote in a statement. The company said that the negotiations were conducted "fairly and in good faith" and that it's working with the government to maximize the mine's benefits.

Battulga and other Mongolian leaders will have to strike a balance between popular sentiment and Rio Tinto's interests if they're to deliver prosperity to the masses. Already, the turmoil has deterred other international miners from investing. The country badly needs their money and expertise; huge swaths of its territory have never been comprehensively surveyed. The first condition for becoming Norway on the steppe is pulling many more resources out of the ground.

Some of Battulga's affinities, however, have Mongolian liberals and foreign observers worrying that his preferred future looks less Scandinavian and more Russian. Chief among their concerns is his bond with Putin. Economic ties between Russia and Mongolia have been limited since the Cold War—Ulaanbaatar is five time zones away from Moscow, and Russian companies have been far less active in Mongolia than their Chinese counterparts. But during his first two years in office, Battulga made a point of reaching out to Putin, meeting with him several times. In early September the Russian leader received a lavish welcome in Ulaanbaatar, where the pair discussed trade deals and having a large Mongolian delegation attend the key event on Moscow's 2020 calendar, a Red Square parade celebrating the 75th anniversary of the Soviet Union's victory in World War II.

Asked if he was tilting Mongolia toward Moscow, Battulga described the countries' connections as both practical and emotional. "We're almost fully dependent on Russia for oil and

▼ A ger district in Ulaanbaatar

INJINAASH BOR

electricity, so we have to cooperate closely," he said. There's also longstanding affection for Russia among Mongolians of Battulga's generation, for whom elite education generally meant studying in the USSR. "Russia and Mongolia," Battulga said, "are closely bonded."

Previous Mongolian leaders concentrated on wooing the U.S., notably by sending troops to Afghanistan and Iraq. (The country's first armed foray to those lands, incidentally, was the 1258 sacking of Baghdad by Genghis's grandson Hulagu Khan, whose horde rolled the city's ruler in a carpet and trampled him to death.) Ties with Washington are the linchpin of the "third neighbor policy," a long-running Mongolian effort to guarantee autonomy by cultivating relationships beyond Russia and China.

U.S. officials have lately been working to keep Mongolia in the West's tent. Then-National Security Adviser John Bolton traveled there in late June, quickly followed by Secretary of Defense Mark Esper. Trump has also welcomed Battulga to the White House, a visit the Mongolian president commemorated by symbolically gifting a horse named Victory to Trump's teenage son Barron. (The horse remained in Mongolia.) Battulga and others lament, however, that Congress hasn't passed the Mongolia Third Neighbor Trade Act, a bill that would remove duties on some Mongolian imports.

To the people responsible for selling international businesses on Mongolia, democracy remains a key competitive advantage. Sumiyabazar Dolgorsuren, the minister of mining, says that for foreign investors, "I think it's better to reach an agreement with a system that can actually clean itself up and right its wrongs."

MANY OF THE PEOPLE BATTULGA SAYS HE WANTS TO HELP live in the *ger* districts, home to more than half of Ulaanbaatar's roughly 1.5 million residents. The districts' existence owes to two peculiarities, one cultural and the other legal. Mongolians were largely nomadic well into the 20th century, and property ownership wasn't really relevant; there was plenty of land to go around. Eager to build a more modern market, post-Communist lawmakers created a system allowing every Mongolian to get a plot of land for free—700 square meters in Ulaanbaatar or as much as 5,000 in rural areas. Since most property nominally belonged to the state, there were few private landowners to object. One unintended consequence of the provision was that, with economic opportunity concentrated in the largest city, many nomadic families claimed a patch of land on its outskirts and never left. Few made enough money to move up the housing ladder, leaving Ulaanbaatar ringed with thousands of gers—traditional tentlike shelters used by nomads for centuries.

On a gray afternoon in a ger district that ascends the foothills north of the city center, it wasn't hard to see why many residents supported a leader claiming he could break the dominance of the wealthy. White gers lined both sides of a rutted dirt track, separated from one another by short wooden stockades. Next to each residence was a tiny outhouse, a particular inconvenience in a country where temperatures can plunge below -30C. Peeking out above the tents were small chimneys for venting smoke from coal stoves. The average ger burns between three and four tons every winter for warmth, the main reason Ulaanbaatar has some of the world's worst air pollution.

To the lee side of a small hill was an angular one-story structure, constructed with a skeleton of blond wood and clad in translucent polycarbonate panels. The building is a makeshift community center, one of several attempts made by a local nonprofit called GerHub, with help from designers at the University of Hong Kong, to improve the districts. Despite promises by successive generations of politicians, no one else has done it. "The government has sort of frozen," said Badruun Gardi, GerHub's founder. Even at the height of the mining boom, "there was this large portion of the country that wasn't benefiting, and in some ways people's lives were getting worse."

You don't have to go far in Ulaanbaatar, though, to find people whose lives have improved dramatically under market democracy. A large cohort of young, tech-savvy Mongolians, many of whom have studied or worked in the West, now form a genuine middle class. The mainstream media is vibrant, with dozens of papers and TV channels, while Twitter and Facebook buzz with passionate political debate. And when Mongolians are dissatisfied with their leaders, they can and do take to the streets, filling the central square no matter the weather.

Even people who helped bring about Mongolia's transition to capitalism express amazement at how far the country has come. Jargalsaikhan Dambadarjaa and Bold Luvsanvandan were pro-democracy activists in 1990, narrowly escaping arrest after they postered Ulaanbaatar's main drag. Now they're part of the establishment: Jargalsaikhan runs a respected think tank, while Bold sits in parliament and leads a political party.

Sitting in the restaurant of the Communist-era Ulaanbaatar Hotel, they remarked on Mongolia's uniquely independent path. Both men share Battulga's stated interest in seeing prosperity shared broadly within the current system. "When a very few people become truly rich," Jargalsaikhan said, "and the masses get pennies, not even toilets, that makes people unhappy." They were nonetheless deeply concerned about Mongolia's direction. "What's happening in Hungary and Poland, similar things are trying to be happening here," Jargalsaikhan said.

"Nobody wants Mongolia to keep democracy," Bold chimed in, alluding to the country's neighbors. "I'm not even sure about Western countries. Dealing with a dictator is much easier." Ⓑ

BIG IN JAPAN

Kanoa Igarashi learned to surf as a boy in California. But he's making huge waves in his parents' homeland
By Jason Clenfield

September 30, 2019

Edited by Chris Rovzar

Businessweek.com

The September sun was starting to set over Tokyo—prime surfing hours at the beaches in nearby Shonan—when Kanoa Igarashi, Japan's most famous wave rider, dragged himself and his entourage into the Harajuku showroom of Quiksilver Inc., one of his sponsors.

It had been a whirlwind 48-hour promotional blitz. He'd flown 5,000 miles from Surf Ranch, the mechanical wave pool that Kelly Slater built in Southern California's inland valley, where Igarashi had spent nine hours getting filmed carving one perfect, machine-made tube after another, then having his blood tested for lactic acid levels.

After touching down in Tokyo at 5 a.m., he climbed into a black SUV headed toward the Prince Park Tower Hotel, where, by 11 a.m., he'd already done a half-dozen interviews with Japanese media. Then there was a photo shoot for *GQ* and a press conference to announce his latest endorsement deal, with cosmetics maker Shiseido Co.

When he arrived at Quiksilver, he was only slightly behind schedule and still looking unruffled in a black T-shirt, black pants, and white sneakers and sporting bleached-blond hair. Igarashi would spend two more hours signing T-shirts and posters and posing for yet more photos. Off to one side was a 6-foot-tall, life-size cardboard cutout of him, equally bronzed and impossibly fit.

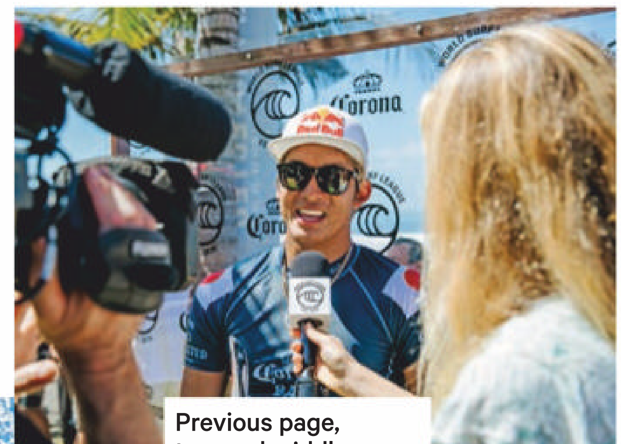
"There's a lot of athletic, gifted surfers but not many as driven as Kanoa," says Derek Rielly, co-founder of the surf website BeachGrit. "He seems to love all the machinations around pro surfing—the companies, the people, the attention, the cameras. He thrives off it."

The sport of surfing is all about timing, and with the possible exception of Slater, nobody ever timed it better than Igarashi's surf-crazed parents, Tsutomu and Misa. Twenty-four years ago, the couple quit their jobs in Tokyo and moved across the Pacific to Huntington Beach, Surf City USA, with the goal of having a baby and raising him or her to be a champion. That California kid grew up to be the youngest surfer to make the professional tour. Now, ranked No. 6 in the world and with earnings of almost $2 million last year, he's one of the sport's highest-paid athletes.

Comparisons are inevitable with tennis prodigies Serena and Venus Williams, whose father, Richard, saw how much money was being handed out to the winner of a tennis match on television and drafted a 78-page plan to turn his yet-to-be-conceived daughters into stars. But Tsutomu, or Tom, still gives off a bohemian vibe, with a long ponytail and thick-rimmed glasses that he sometimes wears around his neck. He introduces himself with jokey business cards, the latest of which describes him as head of the California Research Center, a serious-sounding institution that doesn't exist.

His real business, of course, is managing his son's career, which he's done since he would wake him by 5:20 every morning as a small child so he could be surfing waves by 5:45. (He'd time the sessions so his son could still make it to school on time—second grade.) By age 7, Igarashi had won his first trophy, and he was outsurfing his father by his early teens. In 2016 an 18-year-old Igarashi became the youngest rookie, as well as the first surfer to formally represent Japan on the World Surfing League's Championship Tour. He won the Vans U.S. Open in 2017 and 2018, and last year he broke into the WSL's top 10. In May he scored his first Championship Tour victory, at Keramas Beach in Bali.

Perhaps the most fortuitous timing of all came when the Olympic committee decided to include surfing in the 2020 Summer Games in Tokyo and selected a beach break in Chiba



Previous page, top, and middle: Igarashi at his first Championship Tour victory in Bali in May

Bottom: Igarashi signs a T-shirt at the Quiksilver showroom in Harajuku

PREVIOUS PAGE: RYAN MILLER. THIS PAGE TOP TO BOTTOM: MATT DUNBAR/GETTY IMAGES; RYAN MILLER; TANNER CARNEY FOR BLOOMBERG BUSINESSWEEK

THE SECRETS TO SURFING IN JAPAN

BEACHES TO KNOW
Near Tokyo is **Hebara Beach** in Katsuura. "It's often referred to as the 'Swell Magnet' or the 'Jewel in the Chiba Crown' due to the vast array of breaks and swell directions caused by varying winds," says Dane Gillett, who owns Splash Guest House in Ichinomiya. Thirty minutes north by train is **Tsurigasaki Surfing Beach**, where the Olympics are being held. It's known for having consistent waves because of the shape of the sea bed, but in general they hover in the 2- to 3-foot range. **Kamakura**, an hourlong train ride from Tokyo, sits in the shadow of Mount Fuji, but it can get crowded. Morgan Collett, co-founder of surf-inspired fashion label Saturdays NYC, recommends the **Kaifu River** in Shikoku, a five-hour drive from Tokyo, for the waves that form where the river meets the sea.

WHERE TO STAY
There aren't many four- and five-star resorts in Japan, much less in remote surfing destinations. But in Ago Bay in Mie prefecture is **Amanemu**, which Aman Resorts Group Ltd. manages. It offers a private *onsen* (hot spring) in every villa as well as natural ones on the property. Surf nearby at Ago-no-Matsubara Beach, where swells are strong and consistent. **Halekulani Okinawa**, a resort wrapped around a white sand beach on a secluded peninsula, opened in August. Key spots include the Sunabe Seawall, known for its reef breaks, and Aha Point.

GEAR TO GET
Japanese neoprene, a rubber made from limestone extracted from the mountains, is the wetsuit gold standard. It's more buoyant, durable, and flexible; both Patagonia Inc. and Nineplus Inc. use it. Surf journalist Chas Smith got fitted for a **Rash** wetsuit on a trip and says, "It was more intense than getting a tailored suit." **Glidz Japan** has developed a premium neoprene called Fiber-Light for its custom wetsuits, handmade in a workshop in Chiba. Stock suits take 12 days to make and are almost $500, so expect custom ones to run more than that.

SHAPER TO SWEAR BY
Like guitar makers, surfboard shapers are integral to good performance, and there are several legendary ones in Japan. Among them: **Masao Ogawa** of Dick Brewer Surfboards and YU surfboards' **Yoshinori Ueda**, who's worked with Gerry Lopez, aka Mr. Pipeline, arguably the best-known shaper in the world. **Rio Ueda**, Yoshi's son, has also gone into the family business; find him on Instagram @rioueda_. His boards come in various shapes (long, quad, twin fins) and are often embellished with swirling abstract colors.
——*Maxwell Williams*

prefecture that Igarashi's father surfed endlessly as a young man. With a home-field advantage and his father's inside track on the surf, Igarashi should have a clear edge. "Out of every surfer, I have the best chance," he told me in a quiet moment when we met up for the first time earlier this year. "It shouldn't be me saying it, but just to be direct with you: With everything combined, with it being in Japan, with the rise-up I'm having, I have the best chance of winning the Olympics."

Although he was born and raised in the U.S., Igarashi chose to seek qualification for the games under the Japanese flag. He says it was a way to honor his parents, but it was also an easy business decision. For all of surfing's popularity in Japan—the islands have 18,500 miles of coastline, consistent waves, and, during the fall typhoon season, swells that can rival the best on Earth—he's really the country's only surf star. "In California everyone lives next door to a pro surfer," says Tanner Carney, Igarashi's friend and videographer. "But in Japan, he's it. He's the guy."

Exact numbers are hard to come by, but there are an estimated 2 million surfers out of the 126 million people living in Japan. (The U.S. counts approximately 2.5 million out of a population of 330 million.) Many are concentrated in Kamakura, where "train surfers" who work in Tokyo will take the hourlong ride to hit the water. According to data from Surfline, the most popular online wave resource, there's been a 22% increase in new users from Japan since 2017.

After the Olympics announcement, much of the focus has been on Tsurigasaki Surfing Beach in the town of Ichinomiya (population 500), where the competition will be held. It's 90 minutes by train from Tokyo, and almost 600,000 visitors surf there every year. The waves are consistent but not historically big ones—which just happens to be Igarashi's specialty, according to Matt Warshaw, author of the *Encyclopedia of Surfing*. He anticipates that the conditions there will be at best a 2- to 3-foot surf. "On the other hand," he says, "really bad 2-feet surf is where Kanoa Igarashi is almost unbeatable."

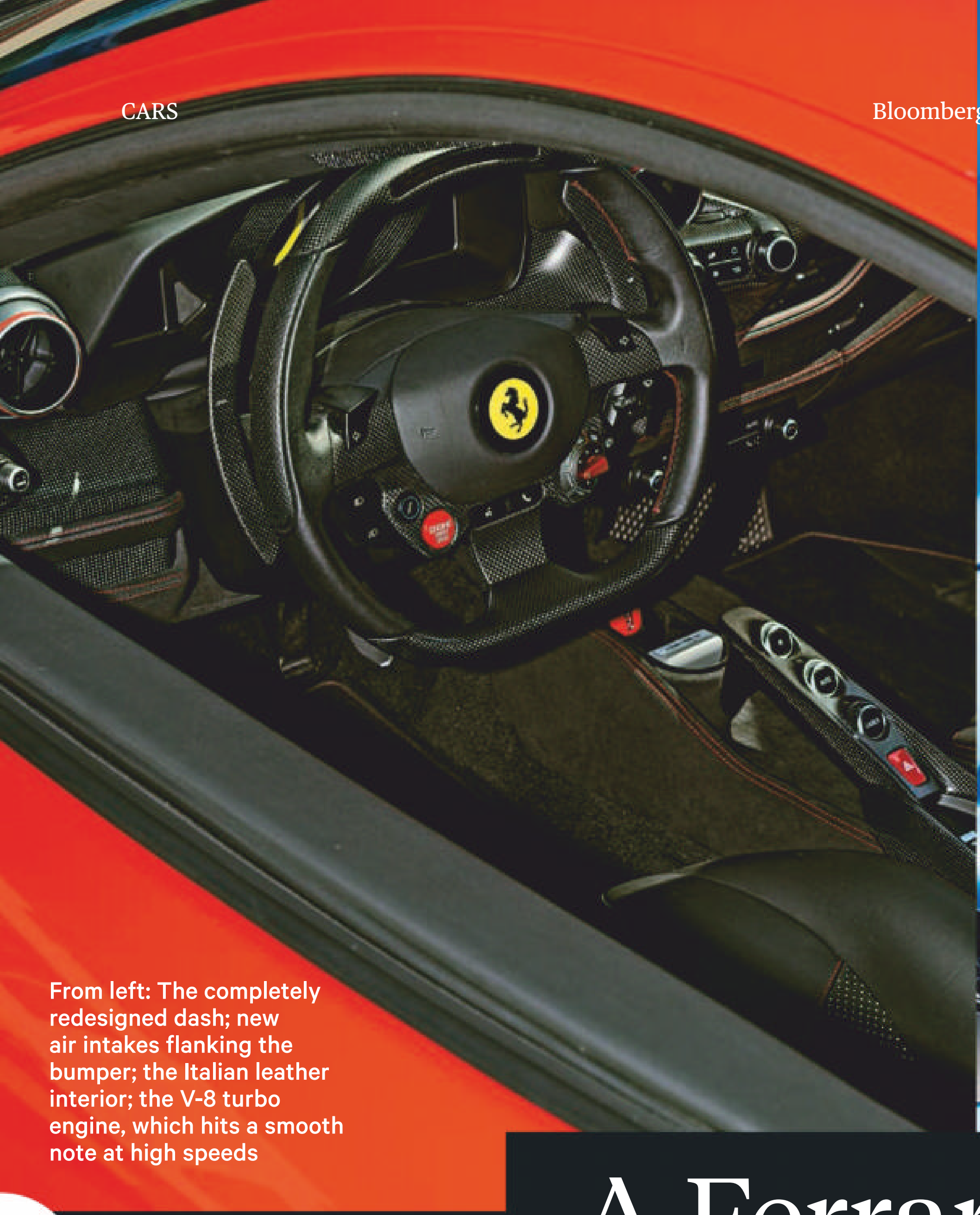
Shuji Kasuya, a former Japanese surf champion who lives in Honolulu, says Igarashi has the potential to transcend the sport in his home country. "He's the first Japanese on the Championship Tour, so there's so much influence not just as a surfer. It's more like he's always on the news, advertisements, commercials," says Kasuya. "He doesn't just do surfing fan magazines, he does fashion magazines. It used to be surfers had long hair and a bad-boy image. But he's clean-cut and speaks like four different languages."

For the moment, Igarashi stands alone in terms of broader fame in surfing-mad Japan. He says he's already "way past" last year's $2 million figure, mostly because of endorsement deals related to the Olympics. Corporate sponsors range from Visa Inc., which has been running an ad on Japanese TV since March that depicts Igarashi riding his surfboard on a wave of the company's cash cards, to a conglomerate called the Kinoshita Group, which makes building materials and operates nursing homes.

A few other potential stars are coming up behind him. Shun Murakami, a goofy-footed 22-year-old, has already earned a provisional qualification for the Olympics. Closer to home, Igarashi's younger brother, Keanu, is also being groomed for surf stardom, and after winning a few amateur contests at the age of 17, he could end up being the Serena to the Igarashis' Venus.

At the Quiksilver shop in Harajuku, however, there was no evidence of those kinds of thoughts. Igarashi was due the next day on the beaches at Miyazaki, a 90-minute flight from Tokyo, where he would compete in the ISA World Surfing Games. After that, he'd go back to Slater's wave pool for the Freshwater Pro tournament.

One last bit of business remained: Igarashi's father was in another room planning a documentary about the family with Japanese TV producers. Afterward, Igarashi, his father, and Carney, all three dressed in black, rode the elevator down to the street. As they headed out into Harajuku's neon-lit night to do some shopping, I was reminded of something Tsutomu told me earlier. "My wife and I were making something," he said. "And we succeeded." Ⓑ



From left: The completely redesigned dash; new air intakes flanking the bumper; the Italian leather interior; the V-8 turbo engine, which hits a smooth note at high speeds

A Ferrari in Full

Drawing on history to shape the F8 Tributo, designers made the most beautiful Ferrari in a decade

By Hannah Elliott Photographs by Federico Ciamei

It's comforting to know that some things never change. Markets may crumble, social media may demolish civil society, but fresh pasta, good wine, and the courtesy of Italian drivers who move over on the A1 when they've got a Ferrari on their tail—these things prevail across generations.

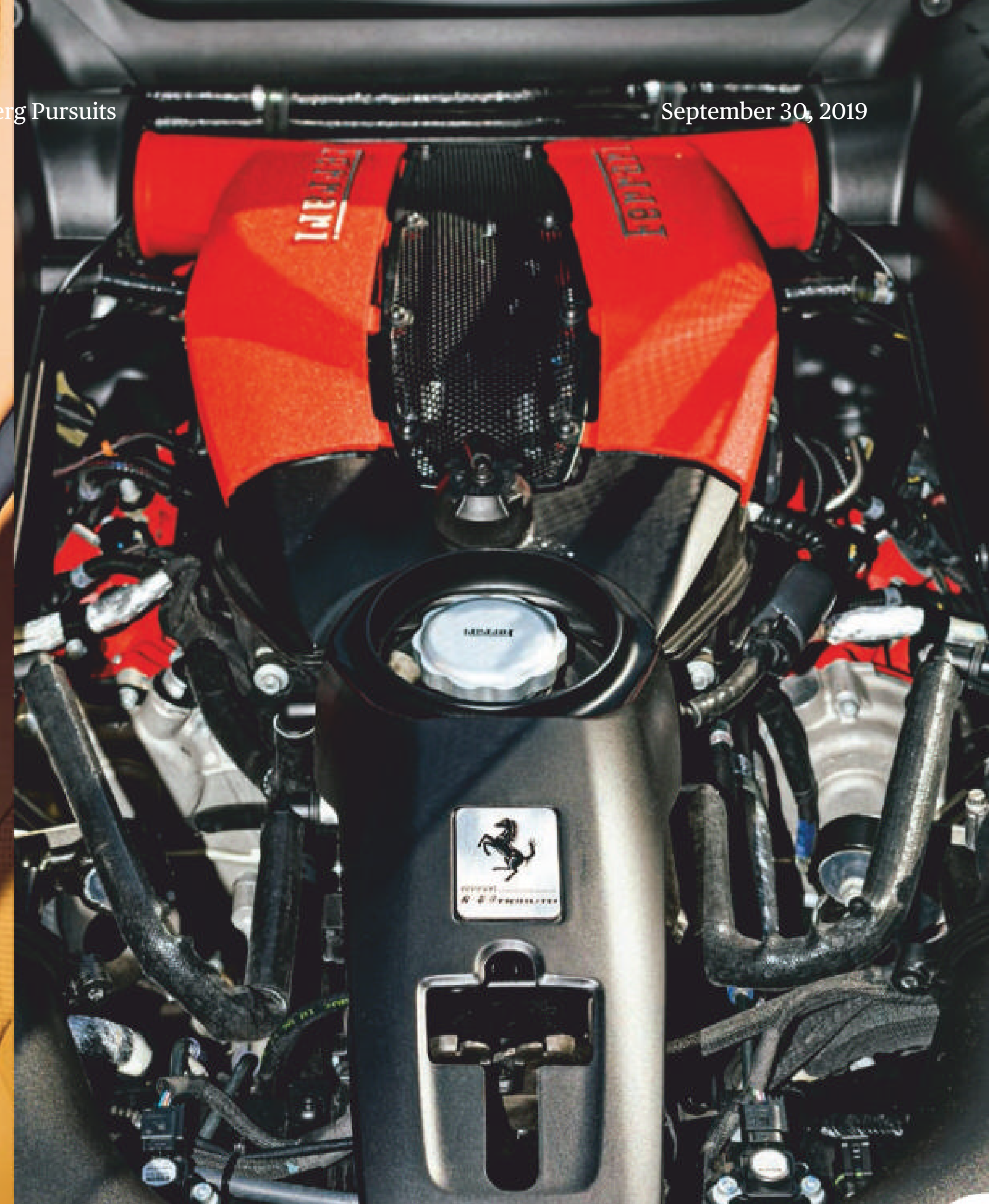
They're like the Colosseum. Or the V-8 turbo engine. That's the throbbing heart inside Ferrari NV's 2020 F8 Tributo, a new offering from the 70-year-old company. As the name suggests, the $270,530 coupe pays tribute to the almost-sacred engines that have powered the automaker's most successful cars since its first mid-engine V-8, in the 1975 Ferrari 308 GTB.

The F8 Tributo is where I found myself in early September—yes, on a sunny section of the A1 that runs from Modena to Milan and caters to the most impatient of sightseers. With a 3.9-liter, 711-horsepower engine, a seven-speed dual-clutch gearbox, and 568 pound-feet of torque, it's more powerful and efficient than its predecessor, the 488 GTB. Turbo lag simply doesn't exist here.

I looked for it, too. But as I navigated the on-ramp at 30 mph and pushed through fifth, sixth, and seventh gears on my way to 120 mph, the F8 Tributo accelerated without hesitation and with absolute control. (Top speed is 211 mph.) Climbing into the craggy Apennine mountains outside Modena, powering around narrow single-lane roads, the car handled with laserlike finesse. My drive was incrementally smoother, more agile, and more refined in all kinds of turns than what I'd experienced with its predecessors. And with a zero to 62 mph sprint time of 2.9 seconds, the car is lethally quick. A new engine note sings a cheery cantata rather than the growls or burps or wheezes of other cars in its class; the F8 Tributo made me feel like a maestro conducting Italy's grandest orchestra.

The method behind the music, as it were, is the F8 Tributo's weight. At just 2,932 pounds, the car is 48 pounds lighter than the 488 GTB. Advanced components derived from Formula 1 technology have shaved off mass: A novel exhaust manifold saves 22 pounds; titanium connecting rods knock off another 17.

I pulled off to take some photos at one point, and within seconds an elderly woman emerged from her bleached-stone home, window shutters laced with old Italian roses. In her skirt and stockings—this is, after all, the old country—she gesticulated energetically. At first, I thought she was yelling at me for parking in front of her home. Then I caught the word



"*bellissima!*" She pointed at the car and kissed her fingers like a chef.

I shouldn't have been so surprised; the F8 Tributo is the most devastatingly beautiful car Ferrari has made in a decade. It combines winning elements from previous models into a new package, pulling from a storied history to make an automobile that's simultaneously familiar, reassuringly elegant, and aggressively modern. To wit: The new dual round rear taillights are like those from the F40 of the late 1980s and early '90s, as are the louvers in the cover atop the legendary V-8 engine. Made from ultralight Lexan, the clear screen has three slits at the center that help extract hot air from the engine compartment and allow for admiration of the engine itself.

Elsewhere, the vertical headlights of the 488 GTB are now brilliant horizontal LEDs and have another practical purpose—to let new brake-cooling intake vents be placed outside the bumper. The air intakes, which were etched on the flanks of other recent Ferraris, have been moved near the spoiler. A single massive engine air intake duct on the hood increases downforce by 15%, redirecting high pressure flowing up from the bumper and passing it over the front of the car. Forged "starburst" wheels are the exclamation mark on the whole thing. The F8 Tributo looks feminine and strong, happily formidable, even playful.

But the car will be serious for Ferrari's bottom line. It's one of a record five model revamps this year, overhauls that will allow it to charge more for most of its cars. The marque is also making more of them; it hopes to ship 10,000 in 2019, up from 9,251 last year, says Chief Executive Officer Louis Camilleri. All this is aimed at higher profits.

With the F8 Tributo, Ferrari has taken its beloved diamond V-8 engine, polished it, and placed it in a new setting. Thank God, some good things remain—though top brass declined to tell me, it may just be the last time we see a nonhybrid engine on a Ferrari of this mettle.

All of Italy pays respect—and moves aside in tribute. Deliveries start in December. Ⓑ

The F8 Tributo succeeds the 488 GT, which Ferrari made from 2015 to 2019

WE TRIED IT

Skin Saviors

Serums do more than moisturizers alone—battling wrinkles, clogged pores, and even pollution's effects

By Aja Mangum

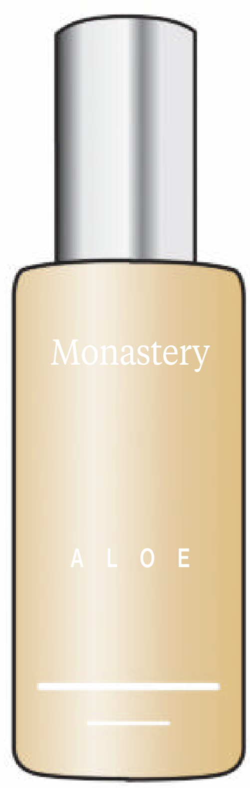
By now you should know what a facial serum is.

Even if you don't believe in the nutrient-packed potions, the half-trillon-dollar skin-care industry has spent years marketing them to those seeking extra help fighting everything from aging to acne. According to beauty consumer data site Poshly.com, 76% of beauty consumers say serum is a regular part of their face-care routine (up from 68% in 2016), and 68% say it's an essential part (up from 55%).

Applied to the face and neck after washing and before moisturizing, serums are often silky or gel-like and contain high doses of ingredients such as hyaluronic acid, retinol (vitamin A), and other vitamins. They're "potent skin-care products," says Massachusetts dermatologist Dr. Joyce Imahiyerobo-Ip. "They are usually comprised of very small molecules that can penetrate the skin and contain high concentrations of their active ingredients."

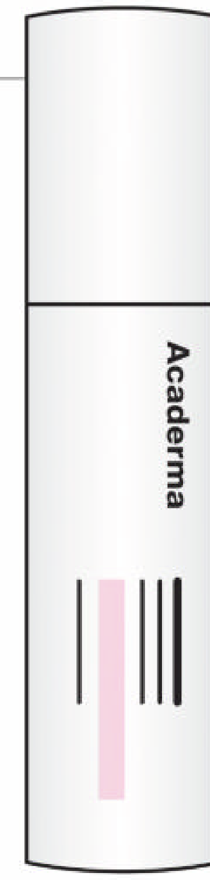
The latest high-performing serums are loaded with trendy retinol alternatives, like plant-based bakuchiol, and innovations such as b-silk protein to preserve the skin's barrier. We assembled a 17-person panel to test the market's latest offerings; here are the most powerful performers. Ⓑ

CARE TIRELESS RETINOID NIGHT SERUM
Made with Granactive retinoid, a retinol gentle enough for daily use on most skin types, it smoothed and tightened skin and even softened wrinkles in the delicate eye area. But it can heighten photosensitivity, so load up on sunscreen or avoid using it in the summer. *$45 for 1 oz.; careskincare.com*



MONASTERY ALOE HYALURONIC MOISTURE BOOST
San Francisco aesthetician Athena Hewett has blended botanicals for her clients for years, and now they're available to the masses. This hyaluronic acid and aloe combo plumps and calms the most sensitive skin. *$79 for 2.03 oz.; monasterymade.com*

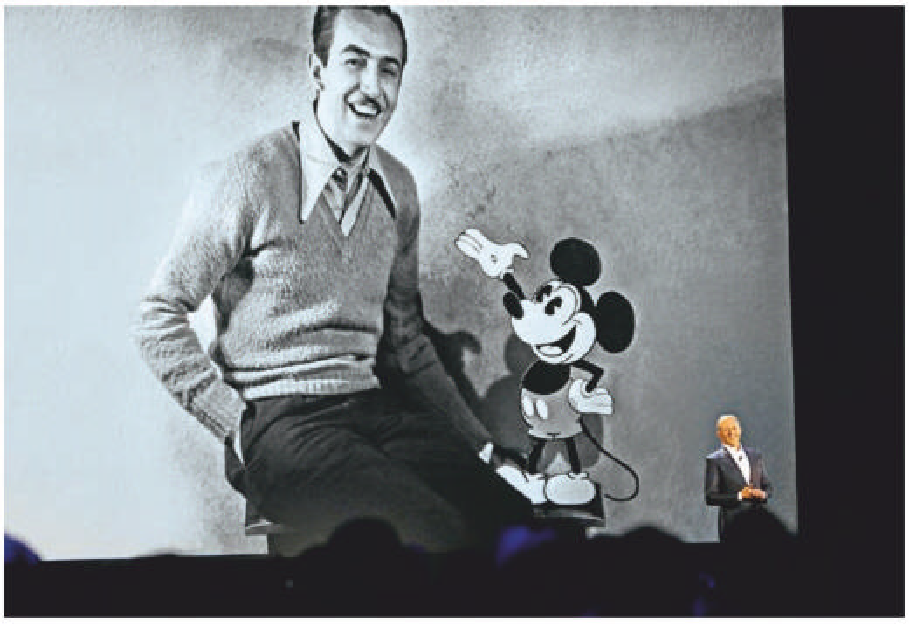
EIGHTEEN B FIRM + REPLENISH SERUM
This geeky biotech brand claims that its b-silk protein, which is fermented in a lab from yeast, sugar, and salt, has restorative properties. Promising to lift, smooth, and firm normal, dry, and combination skin types, it lives up to its word. *$105 for 1 oz.; eighteenb.com*



ACADERMA INVISIBLE SHIELD DEFENSE SERUM
This lightweight treatment uses sesame, peony, and summer snowflake extract to prevent damage caused by pollution and free radicals, and possibly even harm from the blue light of a phone. Once-a-day use resulted in brighter, clearer skin. *$80 for 1 oz.; acaderma.com*

DR. DENNIS GROSS ALPHA BETA PORE PERFECTING & REFINING SERUM
With eight different acids, retinol, and witch hazel, this powerhouse is like Drano for the skin—it unclogs pores and dissolves waxy plugs. After three days of use, skin was dewy and smooth without irritation. *$65 for 1 oz.; drdennisgross.com*

BEAUTYCOUNTER COUNTERTIME MINERAL BOOST HYDRATING ESSENCE
This fresh and fruity essence—a premoisturizer that's lighter than a traditional serum—absorbs rapidly without leaving a sticky film. Its bakuchiol perks up lifeless skin just as quickly. *$59 for 5 oz.; beautycounter.com*



LI YING/REDUX

The Wild Mouse

Disney boss Bob Iger chronicles the dizzying drama behind his biggest deals. *By Devin Leonard*

The title of Bob Iger's new book, *The Ride of a Lifetime: Lessons Learned From 15 Years as CEO of the Walt Disney Company* (Random House, $28), suggests that it will appeal primarily to corporate ladder climbers. But once Iger dispenses with some inspirational evangelizing, he treats readers to a vivid account of his 45-year career, one that might more aptly be titled, *How to Succeed in a Business Full of Prima Donnas and Raging Egomaniacs*.

The broad outline of Iger's saga is well-known—how he toiled for almost a decade in the shadow of his combative predecessor Michael Eisner and took command of the besieged Magic Kingdom in 2005, rejuvenating it with bold acquisitions such as Pixar, Marvel Entertainment, Lucasfilm, and, later, much of 21st Century Fox. As it turns out, there's a lot we didn't know about Iger's maneuvers and, indeed, the man himself.

Determined to do better than his father, a failed advertising executive who gave up a chance to be a big-band trumpeter, he joined ABC in 1974 and became a protégé of Roone Arledge, the mercurial force behind *Monday Night Football* and *Wide World of Sports*. Iger admired Arledge's willingness to rip up shows at the last minute and keep everybody in the editing room until dawn in pursuit of perfection. Less endearing was his proclivity for pitting his underlings against one another, a trait Iger attributes to insecurity.

When Disney bought ABC's parent company in 1996, Iger wanted to position himself as Eisner's No. 2 and possible successor. Instead, Eisner recruited superagent Michael Ovitz, who, Iger writes, spent his time acting like a big shot, interrupting meetings to take calls from Tom Cruise and President Bill Clinton. Ovitz left after little more than a year with a scandalous $140 million severance package.

Eisner announced his resignation plans in 2004, leaving Iger to vie with EBay Inc. Chief Executive Officer Meg Whitman for the top job. He describes this as an often humiliating experience. One of the lowest points came when he had to go to New York to be interviewed by headhunter Gerry Roche, who had lunch brought in during the meeting for himself—but not Iger—then cut things short to catch a plane to a wedding.

Ultimately, Iger prevailed. As CEO, he resuscitated Disney's ailing animation division with the company's $7.4 billion purchase of Pixar. In the process he became unlikely buddies with Pixar's CEO: Steve Jobs. The notoriously brusque Jobs occasionally rankled the diplomatic Disney CEO, calling one of Disney's budget hotels in Orlando "crap" and telling him that *Iron Man 2* "sucked."

Jobs wasn't the only difficult personality with whom Iger had to negotiate. He persuaded Ike Perlmutter, the secretive former Israeli military officer who controlled Marvel Entertainment, to sell his company to Disney in 2009 for $4 billion. Iger let him stick around and run everything at Marvel but the movie division. Even so, Perlmutter's people tried to thwart Disney's efforts to make *Black Panther*, saying that a black superhero wouldn't crush at the box office. "I called Ike and told him to tell his team to stop putting up roadblocks," Iger writes. *Black Panther* went on to make more than $1 billion.

Then there's George Lucas, who had seller's remorse after Iger persuaded him to part with his company in 2012 for $4 billion. Iger writes that Lucas became irate when Disney didn't religiously adhere to his plans for its first *Star Wars* sequel, *The Force Awakens*. Iger tried to smooth things over, inviting Lucas to the premiere and praising him lavishly. Yet in an interview with Charlie Rose, Lucas said that selling his company to Disney felt like turning over his children to "white slavers." He later apologized, but the experience clearly wounded Iger.

Every major player in Hollywood makes an appearance in *The Ride of a Lifetime*. Rupert Murdoch approached Iger in 2017 about selling 21st Century Fox to Disney. Iger writes that Murdoch's idea of an icebreaker at their first chat was to ask, "Are you running for president?" Iger confirms that he had been speaking with prominent Democrats about it, but he wasn't going to tell Murdoch and have him splash it all over Fox News. The acquisition became its own drama as Comcast Corp. also made a play for the company, and in the ensuing bidding war, Disney ended up paying $71 billion.

It's hard to blame Iger if he sounds a little weary in the final section of the book. He's 68. He'd planned to step down in June, but as part of his deal with Murdoch, he's agreed to stick around until 2021. In November, Iger's company is scheduled to launch Disney+, the closely observed streaming service, and its success or failure will color his legacy. If anybody needs inspiration now, it's Bob Iger. His ride isn't over yet. Ⓑ

Wine's Magic Wand

Fruition Sciences makes gadgets that take the guesswork out of grape harvesting. *By Mark Ellwood*

The man wandering through the vineyard looks lost. He's brandishing a handheld sensor that resembles a self-checkout scanner in the supermarket or perhaps a flashlight. He pauses as he walks down the rows of vines, holding the device carefully against bunches of grapes. There's no flash or beep as he does so; inside the grapes, though, beams of shortwave light from the gadget agitate molecules of anthocyanin. The combination of wavelengths is tailor-made to resonate with these color compounds, which indicate a grape's ripeness.

The pigments fluoresce under the beam of the gadget, allowing it to log their presence, like a teacher asking pupils to raise their hand. It's a process that's repeated weekly, starting as the fruit begins to turn in July, with the readings banked to a central server. There, artificial intelligence compares them with historic and theoretical data: Is a given bunch riper now—higher levels of anthocyanins—or is it past peak, with lower levels? How do its current readings compare with parallel data taken the previous week?

This science, which helps determine the best moment to harvest each vine, is already discreetly in use at some of the world's finest vineyards, including Château Latour in Bordeaux and Napa Valley's Ovid. "Without that information, you are very much prone to doing the same thing, year in and year out, because you know that works for sure," says Austin Peterson, winemaker at Ovid. "But you might only be achieving 70% of what you can potentially do." Much-lauded roving winemaker Aaron Pott is also a fan.

Wineries that sign up for Fruition Sciences' 360viti process, which starts at $10,000 for a year, won't rely on just this wand, though. The mad-scientist-like viticulture program features other futuristic elements aimed at finessing winemaking, each customized to the user's location. They might include installing static sensors in key locations or measuring wind speed, light, or atmospheric changes. A winemaker can carry a laser scanner up and down each row in winter, once the leaves have fallen, to measure the size and strength of shoots—cross-referencing the data with past atmospheric readings to see the long-term impact of weather changes on growth. The 360viti might also use readings from sleeves wrapped around selected vines to measure sap flow. Co-founder Thibaut Scholasch says Fruition Sciences looks at a broad range of KPIs, or key performance indicators. "We're establishing a real-time health report," he says, "essentially trying to consider the [entire] vineyard as if it were a living organism, like a human being."

Scholasch, who's from northern France, began his career as a winemaker in Chile and Tasmania, Australia, before developing the research program at Robert Mondavi Winery in Northern California. That's when his interest in this data-based approach began. Once Scholasch had earned a doctorate in viticulture, he began developing what's now 360viti with his co-founder, Sébastien Payen. That was 11 years ago. Since then the company has used cutting-edge technology to achieve twin goals: better wine and lower costs, whether environmental or economic.

To improve a particular vintage, a grower can stratify harvesting, so only the vines currently producing *grand cru*-worthy grapes are picked and crushed together. Reducing costs is often related to water, a precious resource and major expense in drought-prone California. Scholasch's work has helped dispel traditional myths about when to water a vine: It's wrongheaded to simply assume a wilting, droopy plant is thirsty. In fact, as his data have shown, watering in response to such behavior can backfire. "It builds dependency on irrigation and creates junkie-like habits in the plant, always in need of a fix. The plant could just be adjusting to the lack of moisture in the air."

No wonder that Fruition Sciences claims it can reduce water usage per acre by two Olympic-size swimming pools per year; one Napa-based vineyard went from watering every three days to only once every three weeks after signing up for the service. Scholasch and his team have recently concluded a three-year collaboration with the nonprofit Energy Research Institute in Palo Alto, Calif., examining how reduced water use can translate into energy savings—and how its vineyard data could be used on other green spaces.

Scholasch is looking to expand 360viti's reach in another way: How and how well a plant stores carbohydrates can predict its short-term productivity and long-term vigor. Skinnier shoots correlate closely with higher-quality fruit for wine. He describes his mission with the zeal of a healthy-eating advocate. "We're doing this for the sake of plant health, longevity, fruit production, and wine quality." Ⓑ

COURTESY FRUITION SCIENCES

Barely There

Silk pajamas from Olatz Schnabel are the lightest form of loungewear

Photograph by Robin Stein

For years, designer and model Olatz Schnabel attended everything from museum openings to film premieres with her then-husband, the artist Julian Schnabel, who wore his signature pajamas. It inspired her to create an eponymous line of PJs that are light and comfortable, yet durable and attractive enough to wear in a variety of situations. That expanded to robes, shirts, slips, and bedding made in the U.S. from 100% high-grade silk. Almost all Olatz items—for men and women—are made to order, with a painstaking attention to detail. The brand has won fans from Kim Kardashian to Heidi Klum.

THE COMPETITION

• The $120 Gisele pajamas from direct-to-consumer brand Eberjey have a similar piped design and tailored fit. The stretchy jersey material is extremely comfortable—but less elegant.

• Sleeper's $275 cotton PJ set in coal with white piping and a roomier cut is addictive because of its softness and breathability.

• Lingerie purveyor Fleur du Mal makes a piped silk jumpsuit ($595) for women that may not be designed for sleeping but is certainly fashioned to turn heads.

THE CASE

As light as it is, silk isn't for the faint of heart—it can trap heat to a surprising degree. But there's nothing more comfortable than loafing around the house in a well-fitting silk ensemble like this unisex PJ set. Olatz's designs are slimly tailored and chic—tuck the shirt into a pair of jeans or slacks, and you'll have a look that's equally at home behind the kitchen counter as it is out on the town. *$600; olatz.com*

GDI and GDP Paint Different Pictures of Growth

By Justin Fox

The economy has been perhaps the brightest spot of Donald Trump's unconventional presidency. A recession would tarnish this, which is presumably why he gets so worked up about perceived missteps by the Federal Reserve. But by one measure, economic growth is already slower during the Trump era than during Barack Obama's eight years as president.

That measure is gross domestic income. GDI is part of the same quarterly national economic accounting by the U.S. Department of Commerce's Bureau of Economic Analysis that gives us gross domestic product but is released a month later. The two numbers should, in theory, be identical, but they never quite are because of the vagaries of real-world data. In a 2010 paper, economist Jeremy Nalewaik—then at the Fed, now at Morgan Stanley—made the case that "GDI better reflects the business cycle fluctuations in true output growth."

The paper had some consequences. The BEA started giving GDI some attention in its GDP news releases and publishing the average of GDP and GDI. Also, the Federal Reserve Bank of Philadelphia now calculates a statistically smoothed melding of GDP and GDI, devised in part by Nalewaik, that it calls GDPplus. The presidential growth rates admittedly depend a lot on the starting quarter one chooses, especially for Obama, who took office amid the worst recession in 75 years. Also, while growth rates have been about the same or only moderately higher under Trump, people aren't wrong to think the economy is better. More are sharing in growth now because the long expansion has brought workers off the sidelines. Ⓑ

—Fox is a business columnist for Bloomberg Opinion

● BUT WAIT, IT GETS BETTER
Of Americans age 25-54, 80% had jobs in August, according to the Bureau of Labor Statistics, the highest prime-age employment rate in more than a decade and perhaps a better measure of economic health than either GDP or GDI growth.

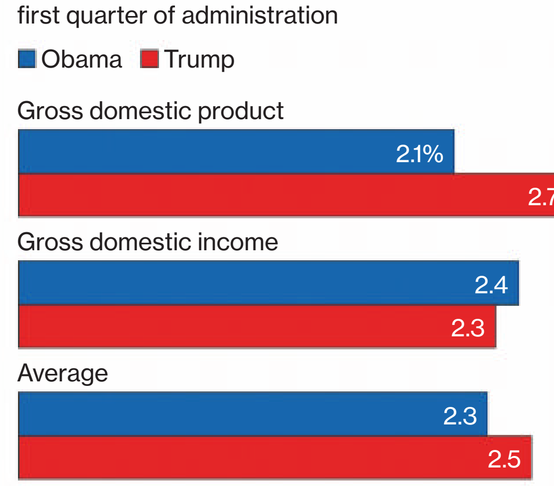
● SMOOTH CALCULATOR
According to BEA data, GDI has grown at a

2.3%

annualized pace since Trump took office, vs. 2.4% during Obama's two terms.

● ON THE JOB
Payroll employment has grown at a 1.5% annual pace during Trump's time in office, faster than the 1% during Obama's entire presidency but slower than the 1.9% of Obama's second term.

Real annualized growth rate since first quarter of administration



● TIMING IS EVERYTHING
If you measure from the quarter before they took office, Trump leads in GDI growth, 2.5% to 2.1%. Measure from the last quarter of the first year in office (because it takes time for policies to have an effect), and it's Trump 2.5% to Obama 2.4%.

ILLUSTRATION BY GEORGE WYLESOL. DATA: BUREAU OF ECONOMIC ANALYSIS

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