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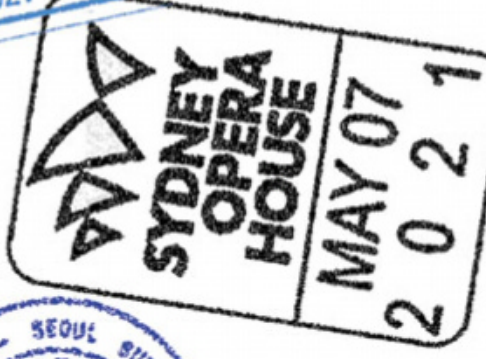
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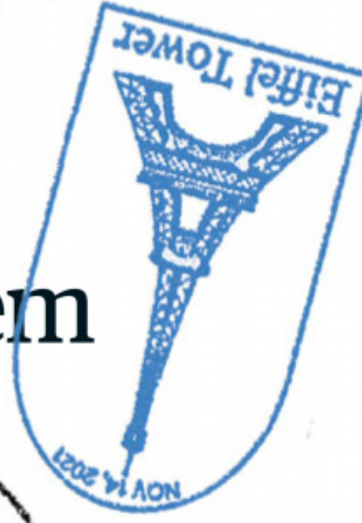
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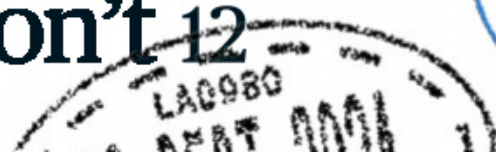
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Passport



It will be a golden ticket for those who have one, and a problem for those who don't 12



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◀ Volunteers roll out hay to keep the overland portion of Minnesota's Northwest Angle Guest Ice Road passable as temperatures warm

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■ COVER TRAIL

How the cover gets made

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"This week's story is about how lots of countries and companies are considering opening up for people who've been fully vaccinated against Covid."

"How will they do that?"

"There are a few ideas on the table—maybe a code on a smartphone or a stamp. If you have it you can go to theaters and malls. You can travel internationally ..."

"Sort of like a passport visa?"

"Exactly!"

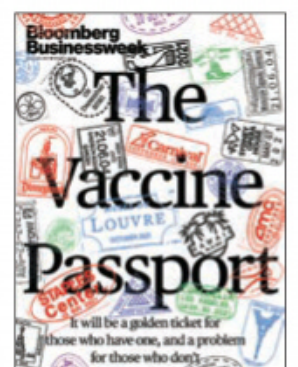
"And if you don't have it?"

"Well, there's the fifth season of *The Wire*. Or maybe you could take up knitting? I'm assuming you've already blown through the sourdough phase by now."

"It's like they say, there are two types of people!"

"Yeah, it's not great. Dividing the post-pandemic world into the haves and the have-nots could have repercussions for—"

"DISNEY WORLD, HERE I COME!!!"



CORRECTION

In "A Buzzkill for Japanese Retirees" (Finance, March 22, 2021), we incorrectly stated that medical marijuana is illegal in Texas. It is legal but highly restricted.

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● Global coronavirus cases passed 124 million, and more than

2.7m

people have died. About 469 million shots have been given, though the slow pace of vaccination and resurging infection rates in much of Europe have forced countries there to postpone reopening plans. ▷ 12

● Turkish President Recep Tayyip Erdogan sacked his third central bank governor, Naci Agbal, in less than two years on March 20 after the bank sharply increased interest rates. Investors reacted by driving the lira down as much as 15%.



● The shootings of eight people in Atlanta on March 16, mostly Asian-American women, sent demonstrators into the streets of New York and other U.S. cities to demand an end to anti-Asian hate crimes, which have spiked during the pandemic.

● Leon Black is stepping down as CEO of Apollo Global Management months ahead of schedule.

Black, who had ties to convicted sex offender Jeffrey Epstein, said he wants to focus on his health and stay out of the public eye for a while.

● European borrowers had already issued **€500b** (\$595 billion) in bonds this year as of March 23, crossing that threshold in record time. Borrowers have seized on assurances by the European Central Bank that rates will stay low and stimulus will continue.

● Some of Wall Street's biggest banks are rethinking work-life balance.



Citigroup CEO Jane Fraser has barred internal video calls on Fridays and is encouraging staff to take vacations.



Goldman Sachs CEO David Solomon vowed that his company would try harder to ensure junior bankers get at least one day off a week, to avoid burnout.

● Canadian Pacific Railway agreed to buy Kansas City Southern for

\$25b

The deal, announced on March 21, would create a 20,000-mile rail network linking the U.S., Canada, and Mexico.

● “This is not and should not be a partisan issue—it is an American issue. We have to act.”

President Biden called for swift action to enact stricter gun laws following a mass shooting at a King Soopers grocery store in Boulder, Colo., on March 22. The attack left 10 people dead, including Eric Talley, the first policeman to arrive on the scene.

● Twitter founder Jack Dorsey's first tweet fetched \$2.9 million at a charity auction.

The tweet, sent on March 21, 2006, said “just setting up my twttr.”



● Elsa Peretti, a fashion model and fixture of New York nightlife who went on to become a celebrated jewelry designer for Tiffany & Co., died on March 18. She was 80.

The Business Case For Creating Covid-19 Vaccine Passports

Once people have been vaccinated against Covid-19, they're safer to dine out, fly on airplanes, attend concerts and movies, work out at the gym, go to the office, and otherwise move about—as long as they wear masks around other people indoors, avoid large groups, and keep their distance. How can they demonstrate that they have this protection? By showing a “vaccine passport,” perhaps in the form of a smartphone app.

The European Union, Israel, the U.K., and other governments are creating such digital documents, as are private organizations. President Biden is assessing whether the U.S. should have them. Yet vaccine passports have met resistance. Critics, including the World Health Organization, worry that they might exacerbate inequality, undermine privacy, or simply not work very well. These concerns ought to be addressed, but they shouldn't veto a useful tool.

First, inequality. “Vaccination is just not available enough around the world and is not available certainly on an equitable basis,” Michael Ryan, head of health emergencies at the WHO, said in March. Vaccine passports, he said, might allow this inequity to be “further branded into the system.”

There's no question that the vaccine rollout needs to be managed with equity in mind, and care must be taken to ensure that passports don't make this task any harder. Proof of vaccination can be provided in ways that don't require a smartphone, for instance. But the main thing is to deliver vaccines as quickly and equitably as possible—within countries and globally. Denying freedom of movement to people who, once vaccinated, pose little danger to themselves or others merely introduces another kind of injustice.

Privacy is another concern. People resist revealing their medical details to strangers. But a vaccine passport can say that someone is free of Covid or protected against it without going into specifics about tests or shots, or any other health characteristics—just as credit cards can be used to buy things without revealing a person's bank account or credit history.

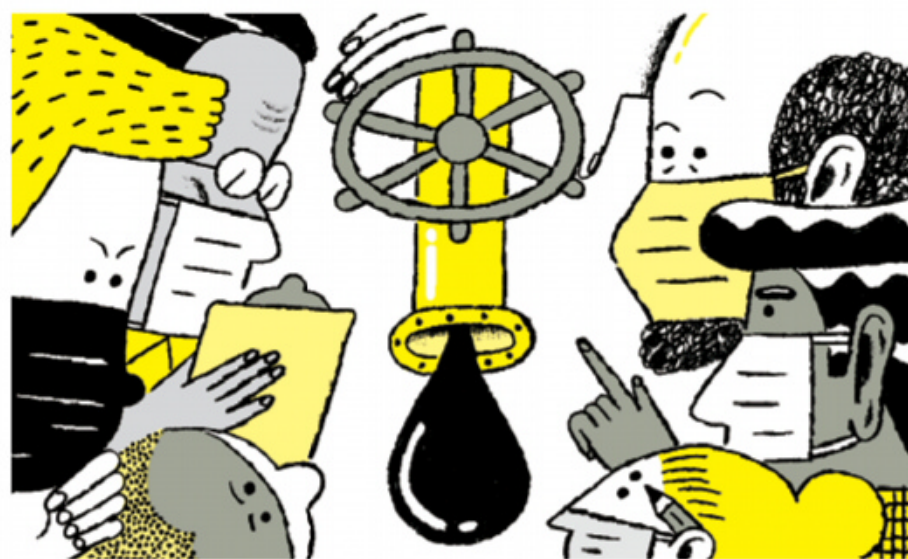
For example, CommonPass, a digital vaccine passport under development by the nonprofit Commons Project and the World Economic Forum, will access users' vaccination records and lab results—to protect against forgery—but use them to validate their inoculation and infection status without revealing details. Passports should be able to provide a simple yes or no answer to this question: Does this person meet this facility's Covid-related entry requirements?

Would the passports work as intended? They certainly couldn't guarantee that someone is virus-free or safe from infection, because tests and vaccines provide less than total protection. Someone infected with the coronavirus may test

negative early on; someone who has been vaccinated retains a small risk of being infected. And medical science doesn't yet know whether vaccinated people can transmit the virus or how long vaccine protection will last. Nevertheless, passports can signify that the bearers are guarded against severe disease and death and are less likely than the unvaccinated to carry the virus and infect other people. In other words, what risks they take and pose to others are tolerably low—if they wear masks and take other precautions that the Centers for Disease Control and Prevention recommend.

Keep in mind, vaccine passports are also meant to be temporary. As populations are more broadly inoculated and Covid-19 fades, the world will be able to again operate without them. In the meantime, they can encourage widespread vaccination and enable airlines, restaurants, offices, and other businesses to come back to life quickly and safely. **B** For more commentary, go to [bloomberg.com/opinion](https://www.bloomberg.com/opinion)

■ AGENDA



► Pump or Pause?

Members of OPEC+ meet on April 1 to set production goals. They must strike a delicate balance: Some countries are reopening and need oil, but others are locking down again.

► Fiat Chrysler, General Motors, Toyota, and other carmakers report first-quarter sales on April 1. The figures are a closely watched gauge of economic demand.

► Bulgaria holds parliamentary elections on April 4. The ruling Gerb party has endured months of anticorruption protests but is likely to eke out another victory.

► IMF Managing Director Kristalina Georgieva discusses the economic outlook and actions to drive a recovery in a March 30 speech to the Council on Foreign Relations.

► Virgin Galactic unveils the third iteration of its SpaceShip craft on March 30. The suborbital spaceplane is designed for commercial tourism, which is scheduled to start in 2022.

► Yogawear maker Lululemon releases its quarterly earnings on March 30. The company has benefited from the rush to buy work-from-home casual clothing.

► Evictions may get easier when an order by the Centers for Disease Control and Prevention expires on March 31. The order bars landlords from kicking out some tardy tenants.

The haystack.

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The End of Tesla's Dominance



May Be Closer Than It Appears

● Volkswagen is going all in on EVs, and other car giants are trying to catch up fast

● By Craig Trudell

He doesn't date a synth-pop star, publicly puff on blunts, or profess to want to die on Mars, but Herbert Diess is starting to look and sound an awful lot like Elon Musk.

The chief executive officer of Volkswagen AG kicked off a March 15 news conference modeled after Tesla Inc.'s "Battery Day"—Diess called his "Power Day"—by declaring that there's

only one way to quickly reduce emissions from transportation: Go electric. Skeptics could be forgiven for raising their eyebrows at that message, coming as it was from the same carmaker that spent years gaslighting the world about "clean diesel." But VW is finally seeing the payoff from its five-year effort to create a standardized platform to underpin dozens of electric models. "Many in the industry questioned our approach," Diess said during the two-hour infomercial he led from VW's headquarters in the German city of Wolfsburg. "Today they are following suit, while we are reaping the fruit."

VW last year became the No. 1 electric-vehicle maker in Europe, where sales of battery-powered cars surged thanks to stricter carbon dioxide limits. After the introduction of the ID.3 hatchback in 2020, the ID.4 crossover—the first global model based on VW's electric platform—is starting to reach

showrooms from Shanghai to Chicago. This year, VW plans to deliver 1 million plug-in hybrid and fully electric vehicles, and Diess aims to surpass Tesla in EV sales no later than 2025. Some analysts predict it will happen much sooner.

In addition to staging splashy events, mixing it up on Twitter, and spewing shameless bombast, Diess has something else in common with Musk lately: a stock price headed into the stratosphere. Sure, Tesla's sky-high valuation means Musk could afford to buy VW tomorrow if he so desired (he doesn't), but VW's common shares have jumped more than 80% this year. Musk has long said that he welcomes EV competition and that Tesla's mission was to accelerate the advent of sustainable energy. He got what he wanted.

EVs are shifting from what seemed like a one-man show to an extravaganza with an increasingly crowded stage. Although VW has as good a chance as anyone to share top billing with Tesla, what's less clear is the rest of the cast. General Motors Co. CEO Mary Barra sent her stock price soaring in January when she said she wanted to phase out gas and diesel cars by 2035. Many Chinese manufacturers are rolling out budget EVs, and Hyundai Motor Co. is planning almost two dozen models. Renault SA had a surprise hit in Europe last year with its Zoe, a battery-powered hatchback. In the U.S., Ford Motor's Mustang Mach-E is hitting showrooms, and Amazon.com-backed Rivian Automotive and Lucid Motors—a Tesla clone that's on track to raise \$4.4 billion in funding—are seeking to replicate Musk's success.

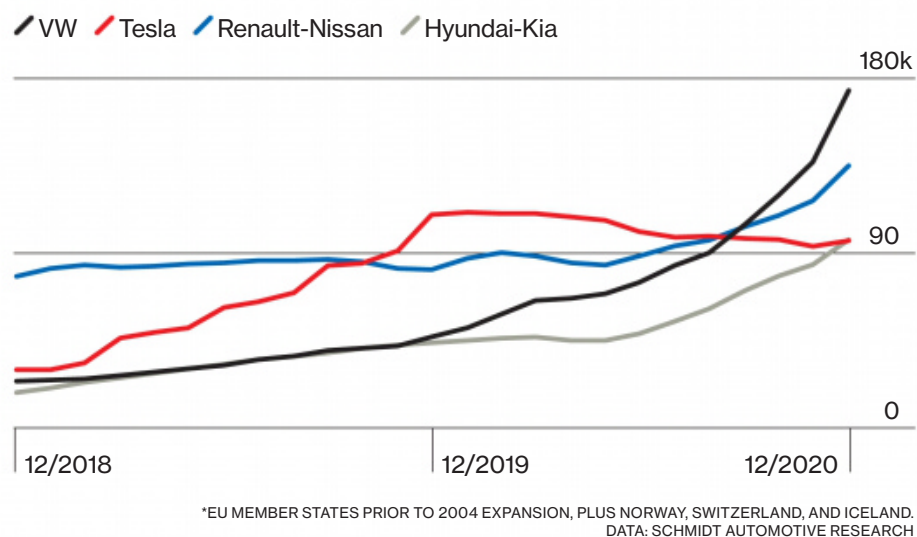
Tesla has done to the auto industry what Netflix Inc. did to cable TV, speeding the shift away from internal combustion in much the same way easy access to *Breaking Bad* and hundreds of other shows spurred consumers to take the scissors to their Comcast contracts. But just as Netflix now sees a growing challenge from parts of the old guard—think Walt Disney Co. and HBO—incumbent automakers are starting to emulate the upstart. (Of course, cable TV companies also face a threat from the likes of Amazon.com Inc., Apple Inc., and Google, which in this analogy are... Amazon, Apple, and Google.)

Even though Disney+ was years behind Netflix, Disney's service has been a runaway success with new fare such as *The Mandalorian* offered alongside its deep catalog of classics like *Pinocchio*, *Toy Story*, and *Mulan*. Similarly, Diess has won over investors by making the case that VW can exploit something Tesla doesn't have much of yet: scale. With a dozen brands that fill every nook and cranny of the auto market—and sales last year of 9.3 million vehicles, compared with a half-million for Tesla—VW is uniquely positioned to pool resources and bear the cost of developing new technologies. By next year, VW will have 27 models based on its standardized platform. “Our transformation will be fast,” Diess said at his event, “bigger than anything the industry has seen in the past century.”

Like Musk, Diess is going big on batteries and charging stations. By 2025, VW and its partners will have more than 35,000 public chargers around the world. And one element of

The EV Space Gets Crowded

New battery-powered passenger car registrations in Western Europe, 12-month rolling average*



its legal agreement with the U.S. and California over cheating on emissions tests was a pledge to spend \$2 billion promoting plug-ins and building charging infrastructure. VW in 2017 set up an affiliate called Electrify America that now boasts the largest fast-charging network in the U.S. Diess is also planning a half-dozen battery factories in Europe, which BloombergNEF estimates will require an investment of almost \$18 billion. The energy researcher says improvements in cell design, battery chemistry, and manufacturing put VW on track to cut the cost of batteries in half by as early as 2025. That could make its EVs cheaper than similarly equipped combustion cars.

Some rivals insist VW's headlong charge into electric cars is imprudent because they remain a sliver of global sales—roughly 3% of vehicles delivered worldwide last year. Toyota Motor Corp., which narrowly surpassed VW as the world's largest automaker in 2020, has long argued hybrids are a more sensible intermediate solution. And BMW AG has embraced flexibility, building many of its models in various versions: gasoline-powered, hybrid, plug-in hybrid, and electric. “We think a one-propulsion strategy could be very dangerous,” CEO Oliver Zipse told Bloomberg Television on March 17. “The likelihood that 150, 160 markets in a very short period of time—and one decade is a very short period of time—will converge fully into one drivetrain is highly unlikely.”

Diess has no plans to hit the brakes. Even as the first models from the current platform start to roll out, VW is furiously developing a separate set of standard components for electric vehicles from Audi, Porsche, and its other upscale brands. That premium platform promises speedier charging times, greater range, and faster acceleration than the first-generation models. By the middle of the decade, VW says it will have a single scalable system to underpin all its battery-powered cars—no matter the brand or segment—as it aims to sell 26 million of them in the next 10 years. “They've got confidence that they can catch up with Tesla,” says Michael Dean, an analyst at Bloomberg Intelligence, who expects VW to take the global EV crown by 2023. “Their foray into electrification is serious.” **B** —With Christoph Rauwald

1

SCISSORS — SUCCESS



Edited by
James E. Ellis,
Benedikt Kammel,
and David Rocks

The Golden Ticket

● Companies and countries that depend on travel or large gatherings are counting on the unproven concept of vaccine passports

In a harbor on the Greek island of Paxos, Panagiotis Mastoras checks over his fleet of pleasure craft and counts down the days to the return of the tourists who fuel the economy of the 8-mile speck in the Ionian Sea. For the rental-boat skipper, the easing of travel curbs imposed as the Covid-19 outbreak swept the world appears tantalizingly close. Greece said it would welcome back visitors starting on May 14, as long as they've had a vaccination, recovered from the coronavirus, or tested negative before flying out. "It's the safest way," says Mastoras, one of 850,000 people working in a holiday sector that accounted for almost a quarter of Greece's gross domestic product before the pandemic, the highest proportion in Europe. "We've reached a point where it can't go on like this."

Greece is at the forefront of a bid to revive travel with the help of so-called vaccine passports—certificates or digital cards testifying to the apparent low-risk status of their holders—which is gaining traction in tourist-reliant economies from the Caribbean to Thailand. Businesses that have suffered a yearlong battering from the pandemic are also coming to view the passes as a route to salvation. The International Air Transport Association estimates the industry could lose \$95 billion in cash in 2021 after the worst year on record. Airlines have supported a number of tech solutions to verify passengers' Covid vaccination or testing results, such as the IATA Travel Pass app or the AOKpass from French travel security company International SOS (page 17).

But a lack of standards could hinder such efforts. "There has been a lot of advocacy, but the execution has been sorely lacking," says Jeffrey Goh, who heads the Star Alliance of 26 carriers. Singapore Airlines has begun a trial of IATA's app, as has Qatar Airways. TUI AG, the world's biggest tour operator, says vaccine passports will be key to resuscitating its business. And Carnival Corp.'s U.K.-based

P&O Cruises has stipulated that no one can board its ships this summer without proof of vaccination.

Once established in the travel sector, such passes could hold the key to the reopening of wider society, allowing business meetings and conventions as well as sports events and concerts. Hyatt Hotels Corp. on March 9 announced it was exploring the use of a pass called VeriFly. Ultimately some gyms, bars, restaurants, and even shops could also rely on vaccination documents to help patrons gain easier access.

Yet the case for handing the newly inoculated pass holders their old life back is far from universally accepted. None of the available shots is 100% effective, meaning travelers with vaccine passports could in theory continue to spread the virus (page 14).

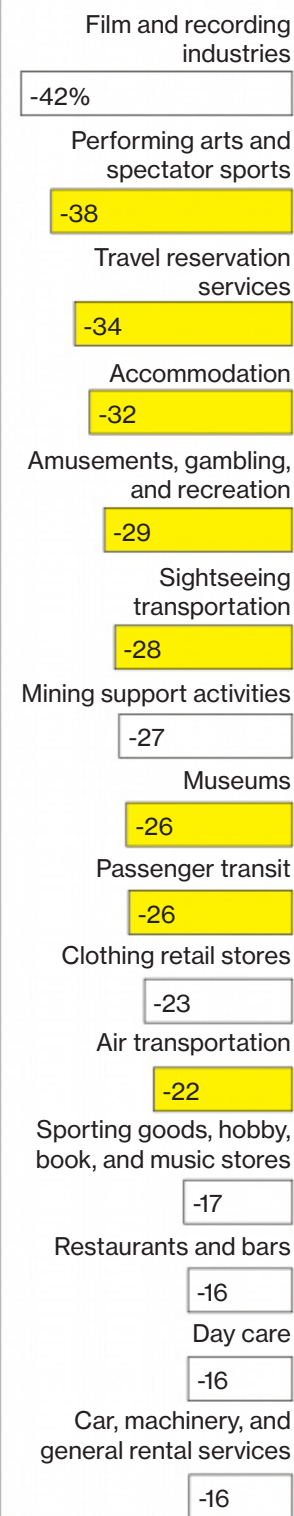
More fundamental are questions surrounding the fairness of vaccine passports, which would inevitably favor the inhabitants of richer nations over poorer ones, where the distribution of shots has barely begun, as well as older people who received shots first (page 18). President Biden is facing pressure to introduce federal standards for vaccine passports. He signed an executive order in January requiring an assessment of how they might be used, but he's yet to act on the request to establish guidelines. Although Americans have a handful of foreign-travel options, including parts of the Caribbean and Mexico, which doesn't require a Covid test or vaccination, the reality is that they will "all be going to Florida" this year because most other top destinations have restrictions, says John Grant, chief analyst at flight-bookings specialist OAG.

Rifts over the role of vaccine passes have shaken the European Union. Nations in the sunnier south are desperate to revive tourism just as others farther north fret over the consequences of permitting travel. On March 17 the EU gave the go-ahead to its own passport, but key questions persist, including when it will be available (an internal memo has suggested in three months) and how long a full reopening of borders will take under a tiered phase-in.

Those hurdles suggest countries such as Cyprus, Greece, and Spain may need to go ahead with plans to admit tourists via bilateral pacts if they're to make the most of the summer season. The U.K. aims to permit international leisure trips starting as early as May 17, and many travel-dependent nations are desperate to snag British vacationers once restrictions are lifted. Britain, along with Germany, is the biggest source of visitors to the Mediterranean.

In Spain's Canary Islands, which normally have a year-round tourist season, hotel manager Jorge Marichal is counting on a May reopening of his lodgings on Tenerife after more than a year. "We're pinning our hopes on the vaccines and the Covid ►

▼ Change in U.S. employment, Feb. 2020-Feb. 2021





◀ Rental-boat skipper Mastoras

◀ pass,” says Marichal. Michael Blandy, chairman of Blandy Group in Madeira, Portugal, which has stakes in 15 hotels, is less upbeat. With inoculation programs moving at different speeds, vaccine passports may help only much later in the year when all of Europe is protected, he says.

Some nations are showing more caution about using proof of inoculation as a basis for reopening to visitors. Thailand, the biggest destination for international tourists in Southeast Asia, plans to shorten the mandatory isolation for vaccinated foreigners by half, to seven days, starting in April. Nonvaccinated travelers will have to quarantine three days longer. The country, dependent on tourism for a fifth of its GDP, won't scrap quarantines completely until October and the start of the high season, Deputy Premier Anutin Charnvirakul said in March.

Bill Barnett, founder of hospitality consultants C9 Hotelworks Co., on the holiday island of Phuket, says there's widespread concern about the risks of letting outsiders back into the country and vaccine passports by themselves won't change that. “It's a case of needing to win over hearts and minds,” he says. “There's still a fear factor out there.”

Economies where tourism is a more marginal activity have narrower ambitions. Australia will grant access to vaccinated travelers from New Zealand and Singapore. Foreign tourists may be able to visit Bali again as soon as June, if they come from nations with successful vaccination programs, Indonesian Tourism Minister Sandiaga Uno said on March 18, though as many as 2 million Bali residents will need to be vaccinated first.

The pace of the return of visitors from China will be a huge factor for Asian tourism. Totaling 155 million outbound tourists in 2019, Chinese are among the biggest foreign visitors to Japan, Thailand, and Vietnam, as well as key customers of luxury retailers in cities as far afield as Paris and Rome.

The reaction to Britain's announcement of a road map for resuming travel starting in mid-May suggests there's burgeoning demand, with TUI reporting a sixfold jump in reservations to Greece, Spain, and Turkey overnight on the news and U.K. discount airline EasyJet Plc saying ticket sales have quadrupled.

On Paxos, Mastoras's bookings surged in the past month, and he's preparing more than 30 craft for the coming season. Vaccine certificates might even help erode the wariness he saw among customers during a brief reopening in July and August. “Families and groups of friends had the opportunity to be together, and it was good,” he says. “But our boat trips didn't work out at all. Strangers didn't feel comfortable mingling.” —*Christopher Jasper, Angus Whitley, and Eleni Chrepa, with Charles Penty, Henrique Almeida, and Mary Schlangenstein*

THE BOTTOM LINE Airlines, which could lose \$95 billion this year because of Covid travel disruptions, are eager for vaccine passports. Sports leagues and concert promoters may not be far behind.

Vaccine Passports' Uncertain Science

● Health professionals are split over using inoculations as get-out-of-jail cards. One reason: a lack of comparative data

Governments from Beijing to Brussels are turning to vaccine passports as a way to safely reopen international travel or provide cover to businesses that require close contact or large gatherings. But given all the uncertainty about the relative efficacy or longevity of competing shots—especially in the face of new variants—the use of vaccination status as a societal get-out-of-jail card remains a leap of faith, medical professionals say. “It may be that the immunity against Covid-19 will differ from vaccine to vaccine, and since we haven't had these vaccines out there for very long, we may not be able to tell for two years,” says Birger Forsberg, a professor of international health at the Karolinska Institutet

in Stockholm. “You can speculate, you can make theoretical or immunological models, and so on, but as it is said, the proof of the pudding is in the eating.”

Few places illustrate the tensions as clearly as the European Union, which is badly trailing the U.S. in its vaccination campaign and relies on free movement of people as a central pillar of its existence. That concept has been under assault during the pandemic, as countries close borders—at times seemingly overnight—for the first time since World War II.

The European Commission in March proposed its Digital Green Certificate, which would be issued to those who have recovered from Covid, recently received a negative test result, or been vaccinated with a shot approved by the European Medicines Agency. For now, that includes vaccines from only Pfizer/BioNTech, Moderna, AstraZeneca, and Johnson & Johnson.

So much for the easy part. EU rules allow individual member states to clear vaccines on their own in emergencies. Some Eastern European countries have done just that, giving nods to shots including Russia’s Sputnik V and China’s Sinopharm. Under the EU’s plan, any country that clears an alternative shot can grant special privileges—say, lifting testing or quarantine measures—to anyone who’s gotten that same shot elsewhere. But other EU countries don’t need to extend those entitlements. That’s upsetting countries like Hungary, where Prime Minister Viktor Orbán received the Sinopharm shot. “A potential Covid passport can’t be discriminatory against anyone,” Hungary Foreign Minister Peter Szijjarto said on March 16. “All vaccines approved by national authorities in accordance with European rules must be recognized in European Covid passports.”

Although the crop of vaccines approved in the U.S. and Europe have demonstrated impressive abilities to prevent mild to severe cases of Covid, it’s unclear how well they stop transmission—or how long that protection lasts. It’s also hard to compare the efficacy of different shots, because their clinical trials took place at different times and locations. The J&J shot underwent trials amid an explosion of more highly transmissible variants such as the one first seen in South Africa; the Pfizer/BioNTech jab did not. And while researchers are studying how well shots perform against existing variants, it’s impossible to say how they’ll fare against strains that emerge later—which suggests that a vaccine passport’s supposed seal of approval for a person’s protection against Covid could fade with time.

There’s also a risk that countries could change their positions on which vaccines they consider reliable. Europe has already changed its mind repeatedly about how safe and effective the AstraZeneca

shot is. Such reversals could cause headaches for people who are far from home. “What happens if I’m sitting in another country and my vaccine is paused?” says Melinda Mills, who recently co-led a report on vaccine passports for the Royal Society. “What is a valid vaccine? It’s a moving target.”

For the foreseeable future, those questions won’t even apply for many people, simply because they won’t have received a Covid shot. That’s certainly true for most children around the world, which raises the question of whether vaccine passports make sense in the near term for family travel.

That’s why the EU includes testing and proof of having recovered from Covid as the two other paths to enjoying the benefits of its proposed passport. Still, these are also imperfect ways to show someone won’t touch off new clusters of infection. There are growing numbers of documented instances in



which people have been reinfected—a threat that will only grow as variants mount. And even though many European countries required negative Covid tests when they loosened border restrictions last year, travel was still found to be a driver in the surge of cases they experienced last summer and fall.

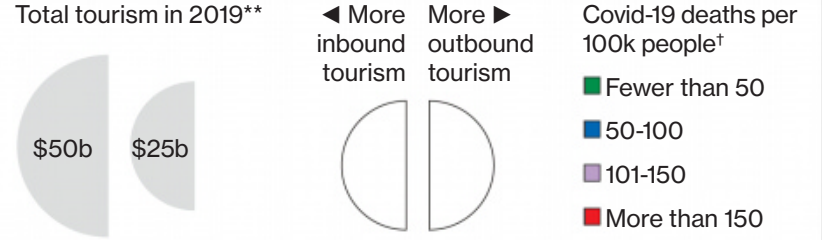
“Addressing the challenges of vaccine passports is like peeling an onion,” says Howard Koh, a professor at the Harvard T.H. Chan School of Public Health and a former assistant secretary at the U.S. Department of Health and Human Services. “There are just many, many layers that you don’t necessarily consider when you start thinking about the issue. There could be many unintended consequences.”

—Tim Loh and Todd Gillespie, with Zoltan Simon

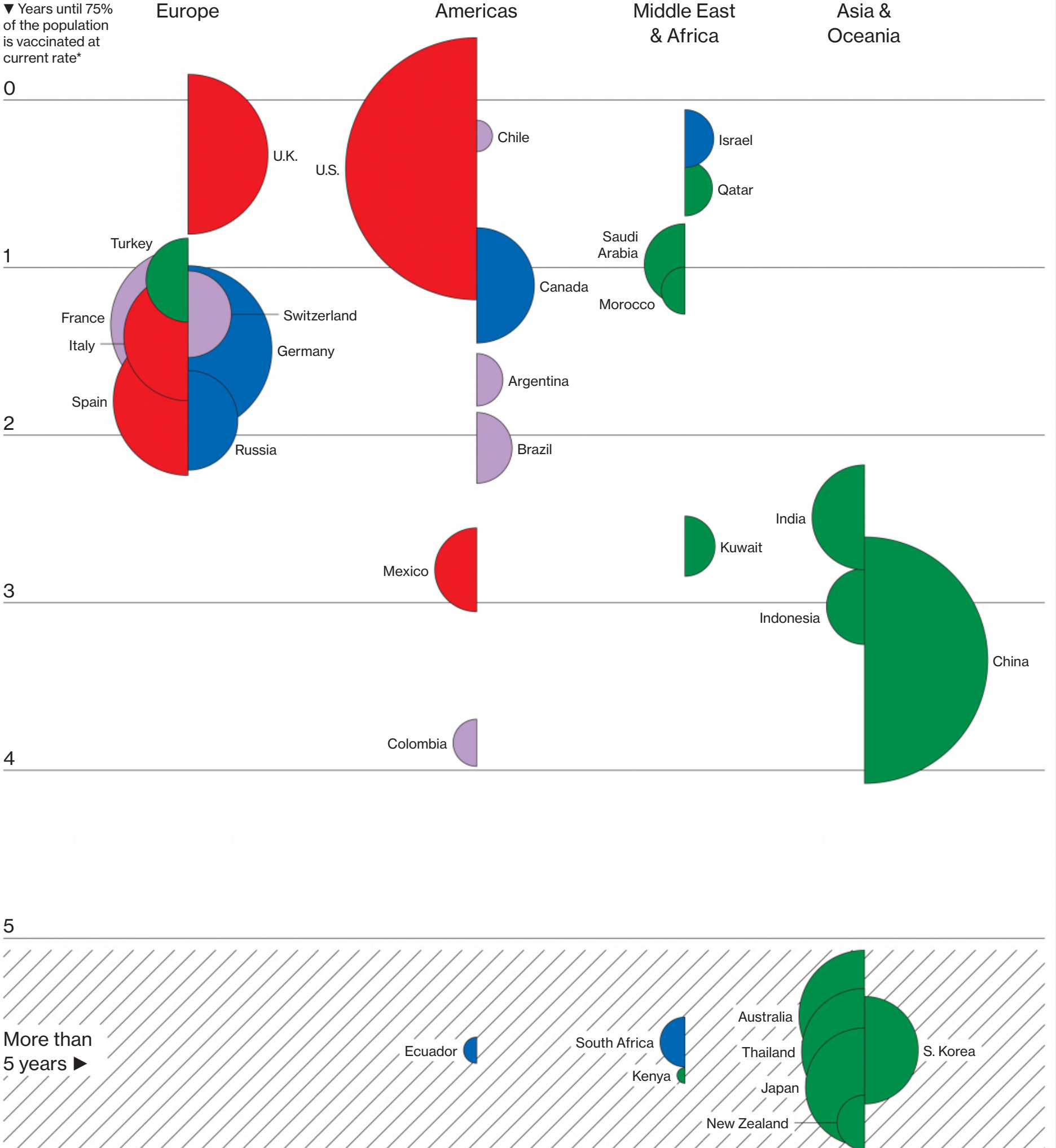
THE BOTTOM LINE Nations are rushing to use vaccination status as an easily understood metric to gauge a person’s vulnerability to transmitting Covid. That approach could be too simplistic.

The Race to Herd Immunity

Global tourism can't revive until more nations tame Covid-19. But at present vaccination rates, it will take years before many tourism-dependent countries vaccinate 75% of their population—the level at which viral transmission eases. —*Minh-Anh Nguyen*



▼ Years until 75% of the population is vaccinated at current rate*



*FOR A TWO-DOSE VACCINE. BASED ON SEVEN-DAY AVERAGE OF DAILY DOSE-ADMINISTRATION RATE AS OF MARCH 23. **SUM OF INBOUND AND OUTBOUND TOURISM EXPENDITURES, EXCLUDING PASSENGER TRANSPORT COSTS. †AS OF MARCH 23. DATA: BLOOMBERG VACCINE TRACKER, WORLD TOURISM ORGANIZATION, COMPILED BY BLOOMBERG

Building a Covid Pass In the Dark



- There's no standard for how systems protect privacy or talk to each other

When Philippe Srour and his wife, Laurence, took an Air France flight to Paris from San Francisco in mid-March, they were given a novel opportunity to escape some of the madness of pandemic-era travel. In exchange for the promise of less hassle at border and security checks, the couple agreed to use a mobile app to display their Covid-19 test results. The trial wasn't a total success. Srour, an engineer by training, initially couldn't get the app to work, because it wouldn't accept his leap-year birth date: Feb. 29. Although the airport verification steps ultimately went smoothly, the glitch showed that the AOKpass system from travel-security company International SOS "might need a little more attention," Srour said after stepping off his flight in Paris.

Although the Srours uncovered a relatively minor bug in the AOKpass, the incident highlights how the digital vaccination and testing apps being rushed to market remain works in progress. And new ones, from the European Union's planned Digital Green Certificate to the International Air Transport Association's Travel Pass or CommonPass, backed by the World Economic Forum, keep emerging.

In Israel, users of the government's "green pass" mobile app can enter theaters, sporting arenas, hotels, and gyms if they can show they've had their vaccine shots or recovered from the virus. But Orr Dunkelman, a computer science professor at the University of Haifa, and his colleagues found that the app was based on outdated code. If users reported issues with the app, the information was sent to a Ministry of Health employee's personal email account instead of the ministry. And early generations of the QR codes displayed on the app were easily forged. "It was done in a hurry, and they didn't think through everything," Dunkelman says.

Sveta Morag, an official at Israel's Ministry of Health who led the work on the green pass, said that the issues with the email address and the QR code pertained to a test version of the app that was published before public places started accepting the pass and that they've since been fixed.

For the global travel industry, having systems that are able to securely talk to each other—regardless of who designed the apps—is critical. Also, using open source software standards, like the ones that already allow credentials to be verified securely over the web, is important. Otherwise, relying on proprietary systems raises the prospect that a company developing an app may have access to people's data, according to Jenny Wanger, director of programs at Linux Foundation Public Health.

The EU's initial guidance for its Green Certificate to enable quarantine-free travel, released on March 17, didn't anoint a particular app. It does lay out broad ground rules for developers, including that the certificates display secure QR codes and be available in both digital and paper formats. Carriers and border authorities want as much interoperability among competing vaccine verification platforms as possible. "We hope that we get one standard that we can easily read with one app and can use it all over Europe," says Emmanuelle Ferracci, who's leading Air France's AOKpass trial.

The IATA, Covid-19 Credentials Initiative, Vaccination Credential Initiative (which represents health-care organizations and tech companies like Microsoft Corp. and Salesforce.com Inc.), and others are basing their work on so-called open source verifiable credentials, which proponents say could allow people to present evidence of immunization without giving border agents access to broader personal data on central servers. Developers also hope the systems could yield dividends long after the pandemic is over, by logging other immunizations needed for certain travel, such as yellow fever shots, or even kids' school registrations.

Some health credentialing systems, including AOKpass, IBM's Digital Health Pass, and one developed by cybersecurity company Guardtime, are adding layers of security by incorporating blockchain technology. Dunkelman says those measures are "overkill." Simple and safe technology already in widespread use with chip-embedded ►

◀ passports and government ID cards could be used for vaccine certificates, he says. Having authorities digitally sign vaccination information and link it to such an identity card would be enough to prevent forgeries and tampering. “It’s one of the few cases where a simple solution is sufficient,” he says.

Dunkelman’s fix would require vaccine certificates to be cross-checked with ID cards, an added step that could slow down the verification process, particularly in airports if travel were to return to pre-Covid levels, according to Anthony Day, who leads IBM’s efforts in Europe to develop blockchain solutions for clients. “The ability to verify digitally at scale is the challenge we’re facing here,” he says.

Still, the World Health Organization remains wary of requiring Covid vaccine certificates to allow international travel, given the unknowns over whether vaccines can reduce transmission of the disease. “There is a huge hope to get out of this pandemic, and anything that sounds like a silver bullet is sort of embraced,” Roberta Andraghetti, WHO’s regional adviser for international health regulations, said on a webinar in March. “Unfortunately, we see more and more that there are no silver bullets.” —*Tara Patel and Natalia Drozdiak, with Ivan Levingston*

THE BOTTOM LINE Tech companies are creating vaccine passports that can quickly show a person’s vaccine status without revealing too much personal data. But a standard is still evolving.

The Jabs vs. The Jab-Nots

● Vaccine passports risk leaving behind the poorest and most vulnerable

On March 15, Britain’s Parliament turned to the question of the moment: how to reopen pubs, cinemas, and soccer stadiums. Almost half the adult population, after all, has gotten a Covid-19 shot, and Prime Minister Boris Johnson has declared that the end of the crisis “really is in sight.” At the heart of the discussion was the “vaccine passport,” a smartphone app or a slip of paper that would attest to inoculation, granting bearers the freedom to travel, go to concerts and cafes, or even just return to the office. Yet what sounds like a practical solution to an unprecedented problem opens the door to a host of ethical and legal concerns. “It would mean passes for the pub,” Conservative MP Steve Baker

thundered in a parliamentary debate. “I did not think that is the society that we wished to live in.”

Politicians, ethicists, and epidemiologists worldwide are grappling with the same issue. As vaccine rollouts accelerate in the U.K., U.S., and beyond, how do we open up safely, letting people who have protection and are demonstrably Covid-free return to pre-pandemic life without risk to the rest of the population? More important, how do we do that in a way that’s equitable, because passports could easily benefit the wealthy and more fortunate while leaving behind minority groups and the poor. “There’s an important sense that we’re all in this together, and it’s only as a society that we get out, but if you allow some people to have freedoms and privileges but not others, it may erode that sense of solidarity,” says David Archard, chair of the Nuffield Council on Bioethics in London. “There are clear benefits, but I think on balance the potential risks and harms outweigh the gains.”

Providing proof of vaccination isn’t new. Many tropical and subtropical countries require travelers to show they’ve been inoculated against yellow fever, and others demand a polio vaccine certificate from at least some travelers. But a Covid passport program would require unprecedented global coordination, spurring myriad efforts to offer one. The nonprofit Commons Project and the World Economic Forum have talked with officials from 52 countries about the so-called CommonPass, aimed at returning travel and trade to pre-crisis levels. The International Air Transport Association, the airline trade group, is working on a similar idea. The European Union has outlined plans for digital certificates for travelers. U.S. airlines have pushed the White House to set standards for health passes.

Even without government directives, businesses such as restaurants and theaters may take the lead and require customers to show they’ve been vaccinated. But companies that implement measures such as “no jab, no job” policies risk legal challenges, University of Oxford professors Christopher Dye and Melinda Mills wrote on March 19 in the journal *Science*. “Freedom of choice for individual employees, set against a firm’s duty and preference for the care of all staff, might be tested in court,” they wrote.

The biggest concern for many health advocates is access to vaccines. More than three months after the first shots were approved for use in Britain, differences in vaccination rates are stark. Although the U.K. has given at least one dose to more than 40% of its population, and the U.S. to about a quarter, vast swaths of the globe are still waiting, with just 10 countries accounting for three-fourths of all the vaccines administered. “There is a huge

“Vaccine inequity is a huge problem that is potentially made worse by this system”



disparity in availability and access between high-income and low- and middle-income countries,” says Mark Eccleston-Turner, a law and infectious disease specialist at Keele University in England. “If we then attach vaccine passporting to that, we’re going to end up with a very clear two-tier system.”

The lag threatens to leave developing countries even further behind. Without vaccines, those countries risk repeated waves of infection and new variants. The use of passports could exacerbate “vaccine nationalism,” making efforts to strengthen health systems and speed up immunizations even more urgent, says Nicole Hassoun, a professor at Binghamton University in New York. “Vaccine inequity is a huge problem that is potentially made worse by this system,” she says.

In the developed world, the prospect of passports raises the specter of a new generation gap. For most of the past year, young people have been asked to remain socially distanced from friends—for their own health, of course, but even more for that of older, more vulnerable people. Because the elderly have been the first to get vaccinated, they would presumably be among the first to get passports, leaving young people stuck at home while Grandma and Grandpa jet off to Sardinia or Santorini.

Lacking a passport could hinder access to job

and business opportunities, too, particularly for migrants and the young, who aren’t prioritized for vaccines, says Chetan Kapoor, co-founder of Safe Travel Barometer, an Indian company that tracks health and safety measures. For people who have been offered jobs or admitted to universities abroad, he suggests a protocol allowing inoculations in the destination locale. “Younger people in almost all countries are at the bottom of the list,” Kapoor says. “It creates a really binary world between the haves and the have-nots.”

The counterargument is that lockdown measures have also drastically increased inequality as people have lost jobs, struggled with child care, and been forced to live much of their lives virtually. Some form of pass to hasten the return to normal would let many of those people get back on their feet. For now, soaring unemployment and widening socioeconomic gaps mean passes make sense even if they favor some groups over others, says Maya Fried of the Association for Civil Rights in Israel. But longer term, a passport system could become “a breeding ground for civil rights issues.” —James Paton and Suzi Ring, with Alisa Odenheimer

THE BOTTOM LINE Politicians, ethicists, and epidemiologists are trying to figure out how to let people who’ve been vaccinated return to pre-pandemic life while protecting those who haven’t.

The Preteen's Guide to Getting Rich Off YouTube

● Ryan Kaji's video empire makes most of its revenue from merchandise, not ads

Ryan Kaji is one of the most popular YouTube creators in the world, with a main channel that's drawn 29 million subscribers interested in watching the 9-year-old open new toys, exercise, or do crafting projects. For Ryan and his family, that audience has translated into millions of dollars in annual ad revenue, the traditional form of income for YouTube celebrities.

Shion and Loann Kaji, Ryan's parents, have also struck sponsorship and merchandising deals with Walmart and Target and signed on for TV shows with Nickelodeon and Amazon. This year the Kajis are adding a footwear line with Skechers USA Inc. In total, products bearing Ryan's World branding generated more than \$250 million in sales in 2020, according to Chris Williams, whose company PocketWatch Inc. handles the family's licensing business outside YouTube. The Kajis' share of those sales represented 60% to 70% of their \$30 million of annual revenue—making it the first year their licensing business has surpassed their YouTube ad revenue.

For three years running, Ryan has made more than any other YouTuber, according to estimates from *Forbes*. The Kajis' operation, which consists of eight separate channels and the corresponding merchandising business, is serving as a model for others, showing that the most successful YouTube operations see ad revenue as a diminishing proportion of their overall business.

The YouTube influencer merchandising boom has been growing for several years. Early pioneers included Michelle Phan's Ipsy makeup service and PewDiePie's catalog of hoodies, hats, and yo-yos. In just the past few months, video blogger Emma Chamberlain created a cold-brew company, Chamberlain Coffee, and stunt artist MrBeast started a hamburger pop-up, BeastBurger, that's "the most important restaurant chain in the U.S.,"

according to one trade magazine. Influencer Logan Paul recently said his Maverick clothing line brought in \$30 million in its first year.

Ryan first appeared on YouTube at age 3 in informal home videos where he unboxed and reviewed toys. Thanks to his on-screen charisma and the inexplicable logic of YouTube, those videos amassed billions of views. Toy unboxing clips, which got their start partly with Ryan, became their own genre on the site.

Ryan's programming has followed YouTube's shifting trends and his own interests as he ages. "Whenever I was much younger, I liked to play with toys, so we'd do lots of toy videos," the boy says. But now, "I like to do gaming videos, science, arts and crafts, exercising." To ensure their son didn't have to adopt YouTube as a full-time job, Ryan's parents created a host of characters around him, turning a channel originally called Ryan's ToysReview into Ryan's World. Now the slate of animated characters includes Combo Panda and Gus the Gummy Gator—both with more than 1 million of their own subscribers. On his main channel, people watch almost 1 million hours of video each day, according to analytics company Tubular Labs.

In 2017 the Kajis signed on with PocketWatch, Williams's newly created media company. They agreed to make PocketWatch their long-term exclusive partner for Ryan's videos—as well as Combo Panda's and Gus's—and took an equity stake in the company. PocketWatch's other investors include United Talent Agency, ViacomCBS Inc., and Robert Downey Jr.

Williams, a veteran of early YouTube network Maker Studios, put together a franchise plan to turn Ryan's World into a kids' licensing giant like *Frozen* or *SpongeBob Squarepants*, the latter of which at one point made more than \$8 billion a year for Nickelodeon. He reached out to dozens of potential licensing partners and retailers. At that time, YouTube channels had no track record of selling toys or clothing, and most companies were reluctant to sign on.

Walmart Inc. was willing to take a chance on Ryan. As his team rolled out its first products ►



● Ryan

◀ that summer, he had his first meet-and-greet with fans at a store in Bentonville, Ark., to introduce a new line of branded toys. The family did little promotion for the event and didn't expect many people to show up. Instead, Ryan was swamped with young viewers. Footage from the appearance shows him waving to fans from inside a grocery cart, pushed down the aisles by his parents and security guards. "As parents, we were a little bit nervous," Shion says. "We thought it was too much for Ryan to take."

The family hasn't held an in-store promotion since, but the branded toys took off. The Kajis and PocketWatch have now licensed their characters to more than 100 different partners.

It hasn't been an entirely smooth ride. In 2019 the Kajis' main channel was the subject of a complaint by the group Truth in Advertising to the Federal Trade Commission for allegedly failing to disclose promotional content. "Such deceptive ad campaigns are rampant on Ryan ToysReview and are deceiving millions of young children on a daily basis," the group contended. The family declined to comment on the complaint, and the FTC didn't respond to a request for comment.

Legal issues are increasingly common for YouTubers, particularly those marketing to children. Kids' programming accounts for more than half of the 20 most-watched YouTube channels in the U.S., according to Tubular Labs. There are 6-year-olds on the platform who draw larger daily audiences than Tucker Carlson. Advertisements targeted at kids also tend to be more profitable. But at the start of 2020, following a settlement with the government over issues related to privacy, YouTube agreed to pay a \$170 million fine and banned targeted advertisements in videos for children. Immediately after the change, the Kaji family, like many other YouTube stars, saw ad sales drop more than 50%.

In general, YouTube is pleased when its stars branch into commerce. The company has rolled out a series of tools for creators to sell items and paid memberships on its site, and it plans an even bigger online shopping push this year.

Plenty of other YouTube creators are aiming to follow the Kajis' example, diversifying into toy lines and other merchandise. Cocomelon, the most-watched channel on all of YouTube, launched a line of toys in September and has licensed episodes to Netflix Inc., which quickly ranked among the streaming service's 10 most popular shows in the U.S. And Love Diana, another property in the PocketWatch stable, has lined up close to 50 licensees in just a few months.

Dolls depicting Diana as a pop star, doctor, and mermaid are already on sale at Target.

"We've created a whole new category," Williams says. "Before Ryan's World there was no category of global kids' franchises around YouTube intellectual property." Soon, they may be unavoidable. —*Lucas Shaw and Mark Bergen*

THE BOTTOM LINE Ryan Kaji's YouTube empire brought in \$30 million in 2020. Less than half of that came from ads, signaling a turning point in the economics of social media influencers.

How to Grow Better Space Lettuce

● NASA is funding research on a technique that could increase the yields of extraterrestrial crops

The key to better eating on Mars might be a technology whose main commercial use today is enhancing the colors on television screens.

Quantum dots, or QDs, are tiny human-made particles whose properties can be manipulated so they emit specific colors when exposed to light. In consumer electronics, this proves useful for making brighter, more energy-efficient

▼ Lush romaine lettuce grown beneath orange-hued QD film



screens. In agricultural settings, quantum dots can be integrated into films that convert sunlight to orange and red light, colors that boost plants' photosynthetic efficiency.

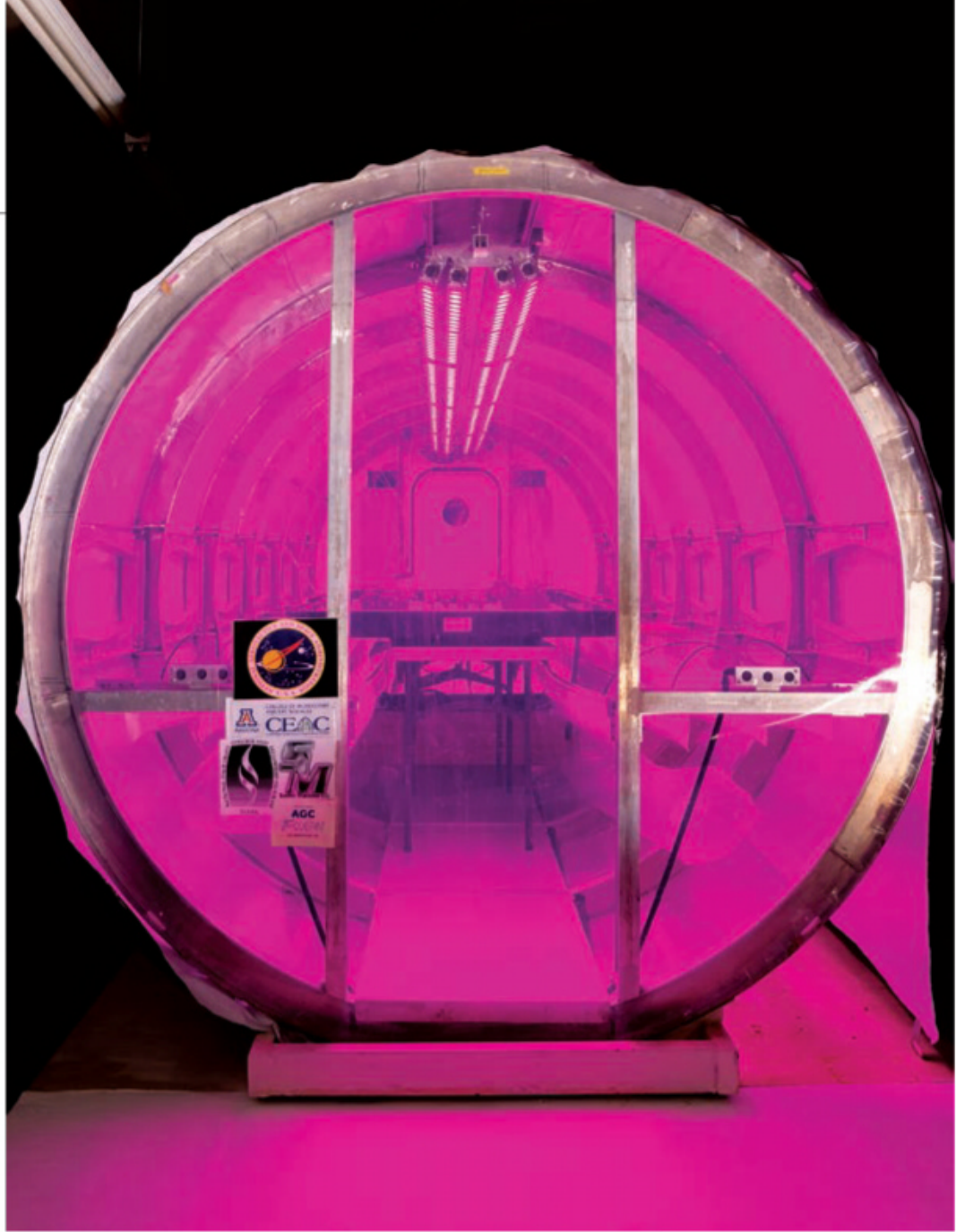
Directing the light from high-intensity lamps through a film coated in quantum dots increased leaf size and yield in romaine lettuce by 13% in a recent study published in the journal *Communications Biology*. (The type of romaine the researchers used is called "Outredgous.") Such films could significantly improve the prospects of extraterrestrial crops, by converting the ultraviolet radiation common in space into light that's nourishing to Earth plants. It puts a new spin on the long-standing assumption that the way to higher yields is more light. Now growers can turn the light they already have into something better.

The NASA-funded study was conducted by the University of Arizona and UbiQD Inc.—pronounced "ubiquity"—a New Mexico-based startup that makes the film. Gene Giacomelli, a professor of horticultural engineering at the university who oversaw the study, says the technique is attractive because it requires no energy to operate, needs only lightweight materials, and can be easily installed. He's confident it could be used to grow food on the moon, where he envisions densely packed rows of lunar lettuce. "They'll grow to a foot tall," he says. If we create a way for people to survive on the moon or Mars, "then I'm quite sure the plants would thrive, grow, and produce."

For now, there aren't enough humans living in space to support a market for salad. Until that happens, UbiQD is primarily selling its films to agricultural clients on Earth. The company has conducted more than 60 trials, including with the largest cucumber grower in North America and a tomato grower in Spain that reported a 20% yield increase in one crop cycle.

UbiQD produces rolls of film that are 4 feet wide, and it's working on a 60-foot-wide version that would be more useful in large-scale agricultural operations. UbiQD, which has partnered with Solvay SA, an industry leader in producing greenhouse films, closed a \$7 million Series A funding round in December. Nanosys Inc., the largest manufacturer of quantum dots, joined the round as a strategic investor.

"I believe that advanced materials underpin every technology advancement in the history of civilization," says Hunter McDaniel, a former materials scientist at New Mexico's Los Alamos National Lab who is UbiQD's founder and chief executive officer. He hopes to use the prospect of space as a way to make quantum dots seem like an essential part of



any serious growing operation. "What's the ultimate in ubiquitous if not going off the planet?" he asks. "You leave the planet, you're in the lead."

It wouldn't be the first time NASA's research affected Earth-bound agriculture. The agency was early in funding tests of LED lights, which have been adopted by vertical farms—indoor facilities with growing trays stacked high on top of one another. Vertical farmers spent more than \$1.2 billion on LED lighting in 2019, according to Emergen Research.

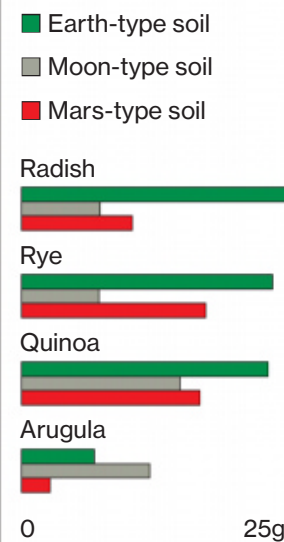
Margins in farming are very low, so any technique that can squeeze additional yield is attractive. But many operations are wary of new capital expenses. UbiQD's film costs about \$3 a square foot and has no operational costs. McDaniel says most customers can earn back their investment within two years, though more profitable crops, such as cannabis, may do so in a single season.

Although persuading a traditionally conservative industry to invest in QDs has been slow going, UbiQD thinks the market could be significant. For his part, Giacomelli is halfway through a study for NASA testing varieties of light specifically tuned for different crop types. "There's going to be a recipe for every plant, every variety, and every age," he says. —Larissa Zimmeroff

THE BOTTOM LINE Quantum dots have been shown to increase photosynthetic efficiency, a technique that could prove useful in space and on Earth.

▲ The University of Arizona's Mars lunar greenhouse

▼ Crop growth, as measured in dry biomass production in a controlled experiment



Don't Trust Anyone

● A once-mocked approach to cybersecurity is having a resurgence

Researcher John Kindervag published a paper about a decade ago arguing that it wasn't enough for administrators of sensitive computer networks to try to keep out bad guys. They also had to put strict limits on the people already inside, regardless of their titles, an approach dubbed "zero trust."

"People told me I was crazy," he says. But the cybersecurity approach has slowly gained followers over the years, and it may be having its moment in the wake of two massive cyberattacks that exposed glaring deficiencies in U.S. defenses. In February the National Security Agency issued guidance urging the owners of networks related to national security to adopt zero trust, and now some experts say it may be the only way forward.

Many computer networks now use what some cybersecurity experts describe as a "castle and moat." They protect perimeter security by investing in firewalls, proxy servers, and other intrusion-prevention tools, then assume activity inside the castle walls is mostly safe, allowing users to move around freely and access information once they've logged in to the system. Zero trust assumes that anyone logging on is suspicious, requiring them to authenticate their credentials for each additional connection.

The government has been down this road before. After the 2015 discovery that Chinese hackers had breached the U.S. Office of Personnel Management, a congressional report called for the adoption of zero trust. But bureaucratic bottlenecks stymied implementation.

Five years later the government fell victim to a cyber-espionage operation of stunning scale: the hack on SolarWinds Corp. revealed in December. While zero trust might not have prevented those attacks, it would have at least given the U.S. a chance to detect the attackers' movements sooner and limit the scope of the damage, experts say.

At a March 18 hearing, Federal Chief Information Security Officer Chris DeRusha said he was working with U.S. government agencies to implement zero trust, because it "prevents adversaries from the kind of privilege escalation that was demonstrated in the SolarWinds incident." In addition, Microsoft Corp., which has advocated for zero trust, found that targeted victims in the SolarWinds attack whose systems had embraced the model were more resilient afterward, according to Alex Weinert, the company's director of identity security.

Adopting a zero-trust model can be costly and time-consuming, because in extreme cases it may require organizations to rip out existing computer equipment and replace it to make certain there isn't any remaining malware. "If U.S. government investigators can't pinpoint each agency's exposure to the malware, it may be forced to assume that most every department within the federal government has been compromised. This scenario would produce the daunting, perhaps impossible task of purging all malware from federal networks," says John Bambenek, a cybersecurity investigator.

The U.S. government may not have years to find a fix. As a result, it might just add zero trust where possible and rely on less drastic cybersecurity fixes elsewhere. "'Zero trust' is the buzzword du jour," says



James Lewis, director of the strategic technologies program at the Center for Strategic and International Studies. But he adds that ripping out and replacing networks shouldn't come before considering easier measures. "We haven't done the basics. So why immediately go to the nuclear option?"

Kindervag, who now works at the cybersecurity company ON2IT, which describes itself as "zero-trust innovators," has continued to promote his approach across the public and private sector. But he, too, recommends moving gradually. "You don't secure a road by ripping out a road and putting a new road in," he says. "You figure out how to put stoplights in, or you figure out how to change the exit ramps." —Alyza Sebenius and Kartikay Mehrotra

"We haven't done the basics. So why immediately go to the nuclear option?"

THE BOTTOM LINE The zero-trust security model may help protect networks against a wave of sophisticated hacks, but putting it in place is tricky.

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This Watchdog Looks Feisty Again

Under new management, the CFPB is knocking on banks' doors and asking questions

3

F I N A N C E

PHOTO ILLUSTRATION BY 731 WATCHDOG, GETTY IMAGES



America's personal-money watchdog is beginning to stir once again.

The Consumer Financial Protection Bureau was created in the wake of the 2008 mortgage crisis. Its mandate: to make sure financial products such as loans aren't designed to trick people into onerous debt or high fees. The CFPB was hobbled by its own leaders during the Trump years, to the glee of many in the financial industry, who argued that the agency had been given too much unaccountable power.

President Biden's nominee to lead the CFPB, Rohit Chopra, is expected to win Senate confirmation within weeks. But the regulator is already sending a message that it's getting tougher. On-site examinations are up, banking executives tell consultants. Student lending, subprime auto loans, debt collection, mortgage services, and payday loans are all expected to come under renewed scrutiny, analysts say.

For a time during the Trump administration, the CFPB's acting director was Mick Mulvaney, who'd previously described the agency as a "sick, sad" joke. Over the past four years the bureau has generated about \$2.3 billion in consumer relief through enforcement actions, compared with more than \$10 billion in the prior four years. Chopra is likely to be more in tune with the original activist mission of the CFPB. He was the bureau's assistant director under Obama-era chief Richard Cordray and is an ally of Senator Elizabeth Warren, the Massachusetts Democrat credited with conceiving of the CFPB and helping to set it up.

Chopra took a Federal Trade Commission seat in 2018. He marked the decade since passage of the Dodd-Frank Act that created the CFPB with a July statement saying "gullible and passive regulators also share responsibility" for the financial crisis, along with "greedy and abusive" financial companies. Chopra said he saw firsthand in his early years at the CFPB that the public must ensure that regulators use every available tool "to rein in firms that abuse their power and break the law." He also has used his FTC perch to take on Big Business, employing similarly tough language. In February, Amazon.com Inc. agreed to pay \$62 million to settle FTC allegations that it withheld tips to delivery drivers. Company executives tried to "mislead its drivers and conceal its theft," Chopra said in a statement at the time. (Amazon disputed the FTC's allegations and said that its pay policies had been clear.)

"My expectation is, once Chopra is confirmed, he's going to want to come fast out of the gate,"

says Ed Mills, a Washington-based policy analyst at Raymond James Financial Inc. "Several bank management teams have told us informally that they had seen a noticeable change from the CFPB in the last month or two after not hearing from them for the last several years. It seems like a switch has been flipped."

Representative Patrick McHenry of North Carolina, the top Republican on the House Financial Services Committee, said in a statement that recent moves by the bureau show it's "backsliding" to over-regulation. "Unfortunately, I expect this is just the start of the CFPB's snap-back to bad policy, abuse of power, and the political tactics we experienced during the Cordray era," he said.

The agency wields an almost \$600 million budget and has nearly 1,600 employees overseeing everything from mortgage lenders to student-loan servicers to credit card issuers. In the weeks since Dave Uejio took over as the CFPB's acting director after Trump appointee Kathy Kraninger resigned at Biden's request, banks have been fielding more requests from the agency, according to people familiar with the discussions, who asked not to be identified discussing confidential regulatory matters. Executives expect more aggressive oversight and enforcement, including higher penalties.

"We are planning to rescind public statements conveying a relaxed approach to enforcement of the laws in our care," Uejio said in a message to the staff after taking over. "We will also be reversing policies of the last administration that weakened enforcement and supervision." In an emailed statement to *Bloomberg Businessweek*, Uejio said the agency wanted to address issues made urgent by Covid—such as keeping people in housing—as well as discrimination and racial inequities.

Uejio also has begun a recruiting drive to hire attorneys he says can help hold companies accountable for hurting consumers. "You're only hiring attorneys to do enforcement actions, so they've put their cards on the table," says Edwin Groshans, an analyst at Height Capital Markets. "We're having a sharp turn in the direction of the CFPB."

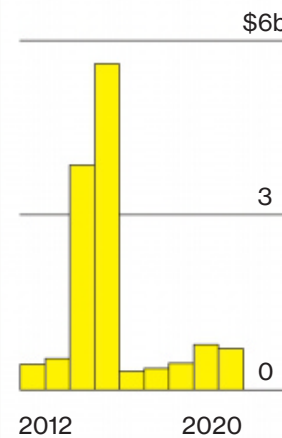
Big banks aren't the only businesses likely to get more attention. Groshans sees the CFPB as likely to scrutinize private student lenders and loan servicers. He also finds that Chopra's citing car repossessions and loan defaults in his confirmation testimony is a signal that he may target subprime auto lenders.

On March 11 the agency rescinded self-imposed, Trump-era restrictions on its ability to collect civil penalties and disgorgement from banks and



● Chopra

▼ Consumer relief ordered in CFPB public-enforcement actions



financial companies for abusive acts and practices. That gives the CFPB an additional tool to bring actions against lenders and consumer finance companies, according to Jaret Seiberg, an analyst at Cowen Inc. “As importantly, we believe the CFPB wants to develop case law on the definition of abusive practice,” he wrote in a note. By setting precedents for what counts as abusive, the agency could make it harder for future regulators to take a more forgiving view. —*Jeff Kearns and Hannah Levitt*

THE BOTTOM LINE After years under an administration that diminished its authority, the U.S. regulator for consumer finance is about to get a new leader with an activist bent.

Swapping Links For Logistics

● Warehouse developers are snapping up underused acres of greens

Golf has enjoyed a minor renaissance in the U.S. during the pandemic—after all, it’s an outdoor sport, and it’s relatively easy to keep socially distant while playing. But it’s still not as hot as the warehouse boom.

As investors hunt for industrial properties tethered to e-commerce, developers are buying golf courses and converting them into space for warehouses. A languishing course is often the largest tract of unbuilt land for miles around, and there are plenty of them. As the jump in golf’s popularity driven by Tiger Woods in the early 2000s fades, scores of courses are closing each year. “When Tiger came on the scene, everybody started building golf courses,” says Chris Gary, executive vice president at real estate firm NAI Hiffman, who built a golf facility in the Chicago area earlier in his career. “There was a surge in interest, and they basically overbuilt.”

Although the number of rounds played in the U.S. last year rose almost 14%, the sport has been in decline over the past 15 years. Today there are about 5 million fewer players than there were in 2005. And roughly 2,400 courses have closed since 2006, according to data from Pellucid Corp. and the Internet Golf Database.

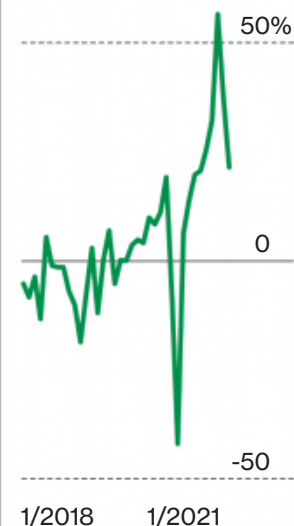
That’s left thousands of acres ripe for takeover. In May, Onondaga County in New York announced Amazon.com Inc. was building a \$350 million

distribution center in the town of Clay. The 3.8 million-square-foot facility will sit on 111 acres of land formerly occupied by the Liverpool Public Golf and Country Club, a course that closed in March 2020 after 72 years in business. Amazon has also unveiled plans to build a fulfillment center on a portion of a former course in Alcoa, Tenn.

United Parcel Service Inc. plans to build a million-square-foot warehouse and distribution center in Philadelphia on land that was most recently a course. The defunct Broadmoor Golf Course in Portland, Ore., which was built in the 1930s and also closed last year, will be the site of a 345,000-square-foot industrial building that Prologis Inc. plans to erect. “With golf you’re just limited to the income of the ongoing business concern,” says Keith Cubba, national director of Colliers’ Golf Course Advisory Services. “There’s going to be a much higher yield on 200 acres of residential or commercial.”

That doesn’t mean conversion is always easy. Golf courses are often zoned as commercial, recreational, or open space—designations that can present challenges for industrial developers. Local opposition can also be an issue, with community leaders and nearby residents objecting to the ▶

▼ Year-over-year change in rounds of golf played



▼ Courses in Clay, N.Y., (left) and Alcoa, Tenn., are becoming Amazon.com centers



◀ increased noise and vehicle traffic that come with a new warehouse.

Still, developers are taking their chances. Thanks to online shopping, warehouses are booming, while other areas of the commercial real estate market have struggled during the pandemic. KKR, Blackstone Group, and Cerberus are among big investors pouring money into logistics acquisitions, betting that demand will remain strong even as lockdowns and restrictions ease. “I’ve been in the business for over 30 years, and finally our asset class is the most popular in the world,” says Jack Fraker, head of industrial investments for CBRE Group Inc.

One reason for analysts’ optimism is that the trend was in place even before Covid. Golf’s

pandemic resurgence may prove more temporary as other entertainment and sports options open up. Even popular courses can attract conversion interest, because that signals the surrounding area has strong economic potential, according to Cubba. If there are people able to pay membership fees, it’s likely there are also plenty of businesses and affluent consumers nearby. “When a course is doing well and has the population to support it and is in a good location with great demographics, there’s higher demand for other uses,” he says. “Right now it’s not a bad time to be in my business.” —*Alex Wittenberg*

THE BOTTOM LINE The golf boom spurred by Tiger Woods led to overbuilding of courses, but land for warehouses and logistics hubs is in short supply.

Fear of a Digital Dollar

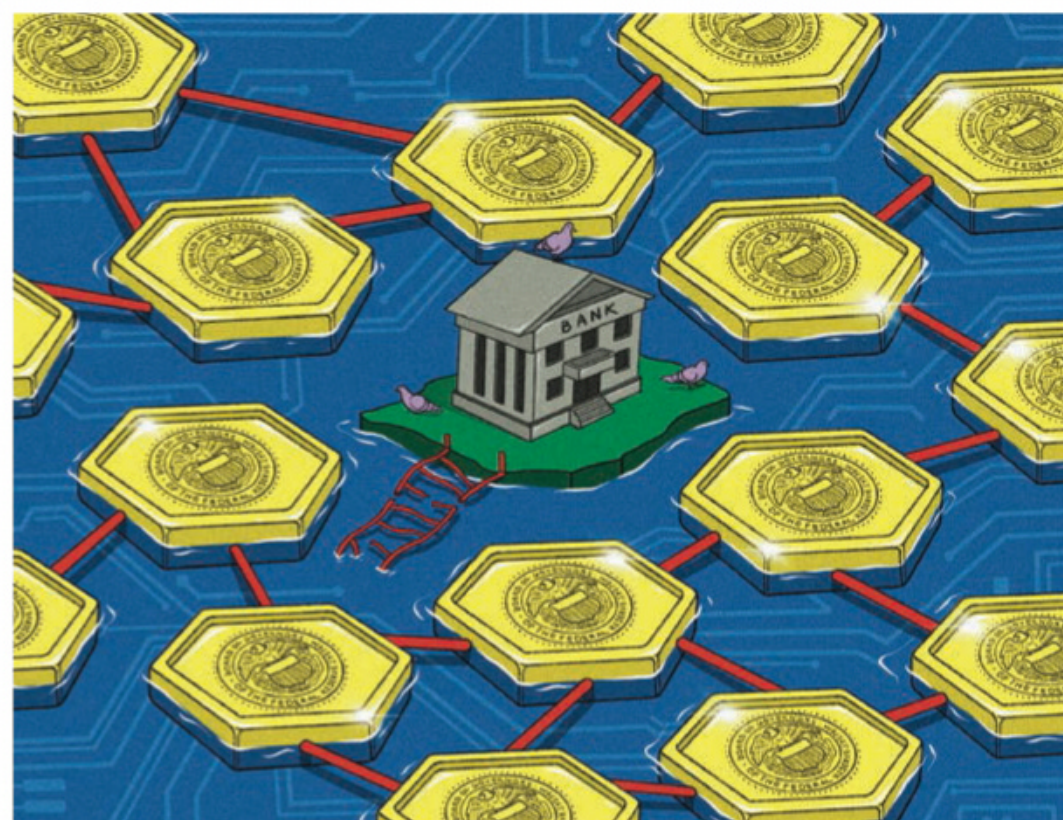
● Central bankers are looking at virtual currencies that could work without banks

The world is about to get an early glimpse at the Federal Reserve’s work on a new digital currency. Wall Street is not thrilled.

Banks, credit card companies, and digital payments processors are carefully watching the push to create an electronic alternative to the paper bills Americans carry in their wallets. Some call it a digital dollar, and others call it a Fedcoin. As soon as July, researchers at the Federal Reserve Bank of Boston and the Massachusetts Institute of Technology, which have been developing prototypes, plan to unveil their work, says James Cunha, who leads the project for the Boston Fed.

A digital currency could fundamentally change the way Americans use money, leading some financial companies to lobby the Fed and Congress to slow its creation—or at least ensure they’re not cut out. “Everyone is afraid that you could disrupt all the incumbent players with a whole new form of payment,” says Michael Del Grosso, an analyst for Compass Point Research & Trading LLC. The banks’ main trade group has told Congress a digital dollar isn’t needed, while payment companies such as Visa Inc. and Mastercard Inc. are trying to work with central banks to make sure any new currencies can be used on their networks.

A U.S. virtual currency could still be years away. And it’s unclear how a digital dollar would interact



with the existing global payments network. Still, the U.S. and other countries seem committed enough to digitizing their currencies that it’s making financial industry executives nervous. “The fire has been lit,” says Josh Lipsky of the GeoEconomics Center at the Atlantic Council, a think tank. “The world is moving very quickly on these projects.”

The growing popularity of Bitcoin, Ethereum, and other cryptocurrencies, whose market value

has grown to more than \$1 trillion, inspired the projects. Unlike those privately created tokens, the new currencies would be issued by central banks as an alternative to paper bills. Cash wouldn't go away, but its use would likely decline.

Using the currencies could be as simple as holding up the screen of a mobile phone to be scanned. Behind the scenes, the digital cash would move from one account to another. This is similar to how most money already works—the majority of U.S. dollars are just digital entries in bank accounts—but the new currency could potentially avoid the go-between of a commercial bank or credit card network. Vendors would get the money almost immediately without having to worry about fraud.

Cunha says the Boston Fed and MIT hope to unveil in the third quarter at least two prototype software platforms that could transfer and store digital dollars and settle transactions. He wouldn't say if either one uses the blockchain technology that underlies Bitcoin and other cryptocurrencies. Once the prototypes are released, Cunha says, others will be able to see and build on the code.

The Fed's work is meant to show what's possible without taking a stand on major issues that the central bank, U.S. Treasury, and Congress must address, Cunha says. These include whether the Fed itself should host customer accounts, whether to allow anonymity, and what protections consumers would have in case of a cyberbreach or mistaken transaction. "We think it's important that we not wait for the policy debate, because then we'll be a year or so behind," Cunha says. "This will take significant outreach to the industry and serious debate."

The U.S. effort got an extra push in February, when Treasury Secretary Janet Yellen said such a project could help Americans who don't have access to the banking system. Federal Reserve Chair Jerome Powell has also talked about digital money while striking a cautious note. At a Bank for International Settlements panel on March 22, he said the Fed has "an obligation to be on the cutting edge of understanding the technological challenges" and the costs and benefits of a digital dollar but wouldn't rush the project. Powell also said the Fed wouldn't proceed without support from Congress.

Ohio Democrat Senator Sherrod Brown, the new chairman of the Senate Banking Committee, introduced legislation last year that would have the Fed create accounts for digital dollars. In early March of this year, Brown sent a letter to Powell urging him to speed up the research. "We cannot be left behind," Brown wrote. Among other threats, he pointed to the development by Facebook Inc. and other companies of their own cryptocurrency, once

called Libra. That currency, since renamed Diem, was slated to launch in 2020 but has struggled to win regulatory approval.

One reason for interest in a digital currency is that many banks take days to give consumers access to checks deposited in their accounts and some charge stiff overdraft fees. Those without bank accounts sometimes must pay high fees to cash paychecks or transmit money to relatives. But Brown's plan could threaten the deposits that commercial banks rely on to make mortgages and other loans.

The American Bankers Association, which says it's lobbying Congress on the issue, has called the digital dollar a costly solution in search of a nonexistent problem. "Rushing anything of this potential magnitude could introduce unintended consequences that threaten the stability of the banking system without contributing meaningfully to economic inclusion," says Steve Kenneally, senior vice president of payments at the ABA.

Two lobbyists for a large bank say they're in contact with lawmakers to keep track of the issue. Lobbying should pick up once banks can actually see the Fed's work and how it might affect them, say the lobbyists, who requested anonymity to discuss internal conversations.

Mastercard in February began to issue prepaid debit cards loaded with the Sand Dollar, a digital currency issued by the Bahamas. "We're increasingly having conversations with central banks as they think about designing potential central bank digital currency, CBDC, and we're talking to them about how they think about design," Visa's North America president, Oliver Jenkyn, said at a Morgan Stanley conference in March. "So there's a lot of talking, but there's actually a lot of action alongside it as well."

Other countries are further along. China is running a digital yuan pilot program in several cities. Lipsky says there's a chance its currency could be ready for a broader debut at the 2022 Winter Olympics in Beijing, which he says could cause tensions if U.S. athletes are asked to use a currency that the Chinese government can completely track.

Advocates of existing cryptocurrencies like Bitcoin have mixed feelings about the Fed muscling into the industry. Jerry Brito, who heads Coin Center, a cryptocurrency advocacy group, raises privacy concerns, and says a Fedcoin could compete with Bitcoin as a digital means of exchange. But he says it could also acclimate Americans to the idea of purchasing digital money. —*Joe Light*

THE BOTTOM LINE Digitized money could replace cash for many uses and potentially make it easier for low-income people to access the financial system.

▼ Where some digital currency projects stand

▷ Bahamas
Launched a digital currency called the Sand Dollar in 2020

▷ Brazil
Expecting digital real to enter circulation in 2022

▷ China
Testing digital yuan in major cities with the goal of wider distribution in 2022

▷ Euro zone
Researching a potential digital euro

▷ Sweden
Recently extended a test of its e-krona

▷ Venezuela
Launched the Petro in 2018 backed by oil reserves; the digital currency had design flaws and is considered a failure



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Scamming The Stimulus

Attempts to filter out illicit unemployment claims are contributing to already huge backlogs

President Biden's \$1.9 trillion economic stimulus package will send billions of dollars to America's jobless. It's also a potential bonanza for scammers.

Throughout the Covid-19 crisis, unemployment programs have served as a lifeline, channeling more than \$650 billion over the past year to millions of struggling households. But the state-run agencies that distribute the funds have been overwhelmed, making their harried staff as well as their glitchy computer systems easy prey for criminals.

At least \$63 billion in improper payments has been doled out since last year, much of it fraud, according to February estimates from the inspector general for the U.S. Department of Labor. Now states are bracing for an additional surge in fraudulent claims after Congress and the White House extended some unemployment benefits into September.

"We're in a tug of war," says Kristin Richards, acting director of the Illinois Department of Employment Security, which in the year through January has stopped about 1.1 million claims involving identity theft. "We have this public pressure to move quickly with benefits, while at the same time having to really fight fraudsters and make sure that we are being good stewards of benefit programs."

The fraud comes on top of widespread system failures resulting from outdated technology, understaffed government offices, and an unprecedented surge in jobless claims, so that in many instances legitimate claims have been incorrectly flagged as suspicious. As a result, untold numbers of unemployed Americans have faced weekslong delays in getting their checks. And more than 11 million say they haven't been able to access ▶



Edited by
Cristina Lindblad

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any benefits, according to census data.

The problems threaten to undercut the Biden administration's efforts to return the U.S. economy to its pre-pandemic strength. Fraud and backlogs are also distorting data that economists and policy-makers use to track the health of the labor market. "The big issue here is the claims that are incorrectly flagged as fraudulent. Benefits are cut off and then jobless workers are left stranded," says Elizabeth Pancotti, policy director at Employ America, an advocacy group based in Washington, D.C.

The Pandemic Unemployment Assistance (PUA) program, created to help gig workers and others who usually don't qualify for jobless benefits, has been a major target of criminals because applicants don't need an employer to verify their status. About 30% of new claims are incidents of identity theft, according to Blake Hall, chief executive officer of ID.me, a security company that's working with 22 states. Federal inmates and members of organized crime rings, including some in Nigeria, are among those responsible, he says.

There was one case in Nevada last year where more than 1,700 claims shared a single address, according to Mike Schmitt, whose IT company, Clairvoyix, was hired by the state to help manage its backlog. His staff has traced unemployment insurance registrations all the way to Japan, the Middle East, and Africa. In Michigan, a claims examiner and co-conspirator have been charged for their alleged role in absconding with \$1.8 million.

In Texas, the share of suspicious claimants to total claimants was 0.18% in 2019. It's now 6.7%, according to a spokesperson from the state. California reported in late January that about 95% of fraudulent payments were in the PUA program.

States' efforts to filter out large quantities of illicit claims are contributing to already huge backlogs that resulted from pandemic job losses.

It took more than a month for Terri Ashman and her husband, both independent contractors living in Dayton, Ohio, to start collecting their benefits. After they finally did, Ashman's account was flagged for potential fraud, and it took about six weeks to sort out the issues. The couple was eventually evicted by their landlord. "We're homeless, everything we own is in storage," says Ashman, adding that her husband's account was also recently flagged for potential fraud. "I know they try, but I don't have any faith in Ohio's unemployment system."

"We understand that there are eligible claimants that are caught up in the massive influx of fraudulent claims in recent months, and this is certainly regrettable," says Tom Betti, spokesperson for the Ohio Department of Job and Family

Services, noting that the state has fielded almost 230,000 reports of identity theft since mid-January. "We apologize, and are doing everything we can to ensure that Ohioans in need are being served."

Many state unemployment offices have hired security experts to help them beef up their systems. Still, only 11 meet the federal standard of paying out 87% of approved claims within 21 days, according to data from the Century Foundation.

Meantime, scammers are getting more creative. Since some states now require claimants to video chat with an agent to verify their status, thieves have been known to use 3D-printed face masks to pose as the people whose identities they've stolen, says ID.me's Hall.

States are now required to have more rigorous identity-verification procedures in place, and officials are working with law enforcement agencies to investigate fraud. The latest stimulus bill also gives states \$2 billion to address fraud, equitable access, and timely payment of benefits. The Department of Labor launched a website on March 22 to consolidate reporting resources for victims of unemployment identity theft.

But Howard Arp, director of forensic audits and investigative service at the Government Accountability Office, isn't holding out hope that much can be done in the near term given the massive volume of claims. "I would be remiss to think that we'd ever be able to alleviate fraud, particularly when you've got such amounts of funds that are going out to try and help people," he says. —*Olivia Rockeman and Reade Pickert*

THE BOTTOM LINE At least \$63 billion in improper unemployment payments has been doled out in the past year, much of it fraud, according to a government watchdog.

The U.S. Is Thirsty For Russian Oil

● Biden talks tough on Russia while U.S. refineries guzzle its crude

The oil tankers docking at the refinery in Baytown, Texas, look exactly like many others plying the waters of the Houston Ship Channel. But stashed inside their capacious holds is an unusual cargo: Russian petroleum.

The sprawling complex, which belongs to Exxon

● States that meet the federal standard of paying out 87% of unemployment claims within 21 days

11



◀ Exxon's refinery in Baytown, Texas

Mobil Corp., isn't the only U.S. refinery that's been receiving shipments of Russian oil. Chevron Corp.'s plant in Mobile, Ala., and Valero Energy Corp.'s facility in St. Charles, La., are also customers.

Deprived of access to Venezuelan crude by U.S. sanctions on the regime of Nicolás Maduro, and facing reduced shipments from OPEC nations since the cartel cut output, U.S. refiners turned to Russian oil in 2020 to fill the gap. The buying spree, combined with sharply lower Saudi shipments, catapulted Russia into the position of third-largest oil supplier to the U.S. last year. The feat for the Kremlin has been the talk of the oil market, but surprisingly it hasn't been discussed much in diplomatic circles. "Russia's move into third place has not attracted any attention in Washington," says Bob McNally, a former senior White House policy adviser who now runs Rapidan Energy Group, a consulting firm in Washington.

America's increasing reliance on Russian oil is at odds with U.S. energy diplomacy. For the last two years, lawmakers in Washington have been lobbying European countries to abandon Nord Stream 2, a multibillion-dollar pipeline to transport Siberian gas to Germany, fearing it will give the Kremlin further leverage over U.S. allies. (Russian gas accounted for about 45% of Europe's natural gas imports in 2019.) Congress went as far last year as to authorize the use of sanctions against companies involved in the project. The Biden administration hasn't indicated whether it's considering exercising that option.

More important, perhaps, the quiet surge in Russian oil imports shows that the mantra of energy independence championed by former U.S. President Trump is hollow, says Mark Finley, a former oil analyst at the CIA who's now a fellow at Rice University's Baker Institute in Houston. Campaigning last year in Texas, Trump boasted that the U.S. was the "No. 1 energy superpower" and the country would never again have to depend on "hostile" foreign suppliers. "So much for energy dominance," Finley says.

In February of last year, the Trump administration blacklisted a trading subsidiary of state-run Rosneft, the largest Russian oil company, saying it

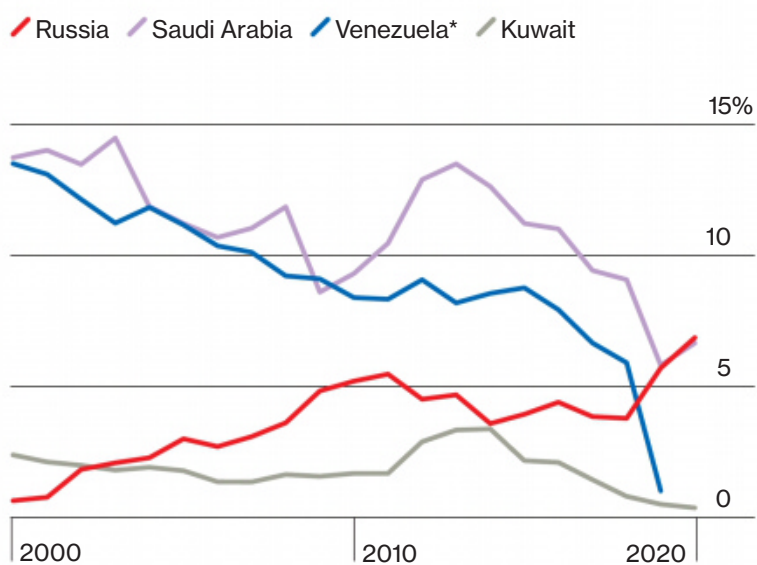
provided a financial lifeline to Maduro's government. But no other Russian entities were targeted, meaning U.S. companies could carry on buying Russian crude and refined products.

The path for Russia to become a key oil supplier to the U.S. was paved with market savvy, luck, and the Kremlin's proven ability to turn Washington's policies to its favor. After years of accounting for less than 0.5% of annual U.S. imports of oil and refined products, Russia steadily increased its share over the last decade, reaching an all-time high of 7% last year, according to Bloomberg News calculations. U.S. imports from Russia averaged 538,000 barrels a day in 2020—more than the 522,000-barrel-a-day average from Saudi Arabia.

The country's gains came in large part at the expense of Venezuela. Exxon's refinery in Baytown is one of several in the U.S. outfitted with special cokers designed to break down dense, sulfurous

Trading Places

U.S. imports of crude oil and petroleum products, by country



*FIGURES FOR VENEZUELA END IN 2019. DATA: U.S. ENERGY INFORMATION ADMINISTRATION

crude oils like those Venezuela produces. When the Trump administration targeted Petróleos de Venezuela S.A. with sanctions in 2019, the refineries' supply chains were disrupted. "U.S. refineries in the Gulf of Mexico are some of the most sophisticated plants in the world," says Adi Imsirovic, a fellow at the Oxford Institute for Energy Studies and former global head of oil trading at Russian giant Gazprom. "Having lost Venezuelan crude and facing less and more expensive feedstock from the traditional OPEC suppliers, they have become a major customer for Russian fuel oil as a substitute."

What U.S. refiners have been buying from Russia isn't mostly crude, but a semirefined fuel oil known as Mazut 100 that has a gooey consistency. A relic of the Soviet system, at home it's largely burned to generate heat. But in the U.S., it fed the cokers ►

◀ to produce gasoline. The top U.S. importer of Russian petroleum last year was Valero, with almost 55 million barrels, followed by Exxon, with almost 50 million barrels. The companies together accounted for almost 50% of total U.S. imports of Russian oil, according to customs data.

The supply issues caused by the shortage of Venezuelan crude have been compounded by cuts in OPEC output, in particular Saudi Arabia's decision last year to slash shipments to the U.S. to their lowest level since 1985 in an effort to reduce the overhang of crude oil that built up during the pandemic.

Consultants, analysts, and lobbyists working for the oil refining industry say they haven't detected any concern in Washington about the increase in Russian imports. That may change. In March, President Biden called Russian President Vladimir

Putin a "killer" and warned he would pay a price for meddling in U.S. elections. McNally says the White House could weigh a ban on Russian oil imports as part of a larger review of Russia sanctions later this summer, though few in the industry see that as a real possibility.

If Saudi Arabia increases its production in the next few months, as many expect, its barrels could potentially displace the Russian ones. So could oil from Kuwait and Iraq. Otherwise, American refiners would still need to find some dense crude to feed their cokers. Crude from Canada's oil sands is an option; but U.S. refiners are probably already buying as much as is available. —*Javier Blas*

THE BOTTOM LINE The U.S. is lecturing its European allies about their dependence on Russian energy exports at a time when Russia's share of U.S. petroleum imports is at an all-time high.

The Pull of *El Norte*

- More Mexicans are crossing the border into the U.S., reversing a trend of recent years

Swelling numbers of Mexicans are heading north across the border, propelled by a deep recession at home and drawn by the promise of a stimulus-fueled resurgence in the U.S.

Apprehensions at the southern U.S. border of working-age Mexicans traveling without children have more than doubled since October, to about 40,000 a month, from an average of fewer than 16,000 a month during the previous two years, according to U.S. Customs and Border Protection. At this pace, 2021 could see the most apprehensions of Mexicans in a decade.

The influx has been largely ignored so far, as the Biden administration struggles with a steep rise in the number of unaccompanied children and families from Central America seeking asylum. Most Mexicans caught at the border are adults traveling without children. The number of repeat attempts at crossing is up sharply from previous years, largely because of a change in U.S. policy last year that resulted in migrants often being expelled within hours of being apprehended instead of being formally deported.

From a high point in the late 1990s and early 2000s, apprehensions of Mexicans at the U.S. border declined steeply as opportunities back home improved, families became smaller,

financial support from those settled abroad grew, and crossings became more dangerous and costly. But they began to climb back in 2018, the year President Andrés Manuel López Obrador took office and economic growth began to stagnate.

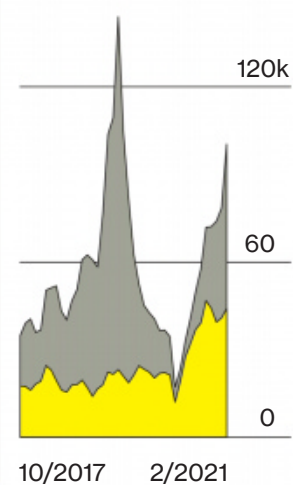
Then the coronavirus crisis hit, crippling the economy. The vast majority of Mexicans who lost their livelihoods in the past year didn't have unemployment programs for support. And López Obrador has refused to fund a major fiscal stimulus, arguing that past bailouts benefited only the elite. Growth in the U.S. has rebounded more quickly, thanks in part to large injections of government aid, including enhanced jobless benefits.

These divergent realities have led a new generation of Mexicans to weigh the painful decision to leave home and family behind. "What drives migration is relative conditions between Mexico and the United States," says Brian Cadena, an economist at the University of Colorado at Boulder. "It is not just booms that matter, it is also being hit less hard by a similar shock. If the U.S. is weathering the pandemic relatively well in terms of what the labor market looks like, that is going to continue to drive migration."

Both of José Granadino's sons departed for the U.S. in recent months. Ramiro, 20, was helping pay

▼ Encounters with U.S. Customs and Border Protection at the U.S.-Mexico border, by nationality

- Mexican
- Other



for his agronomy degree by working as a sound engineer for events around the family's home near Ixmiquilpan, about 70 miles north of Mexico City. But the pandemic killed the quinceañera and wedding party business. Meanwhile, his uncles in Oklahoma told him there was plenty of work north of the border. "He started to get desperate," says Granadino, who went to Florida when he was just 16. "He said, 'I want to improve myself, I want to do something.'"

In October, Ramiro set off for the U.S., braving a 10-day journey through the Texan desert. Granadino's 23-year-old son, Victor, followed a month later. The brothers are now working double shifts at bakeries and restaurants in Tulsa.

"Every time there is an economic crisis in the United States, undocumented workers play a key part in the recovery because they are the cheapest to hire and are willing to work in the most adverse conditions," says Jorge Santibañez, president of the Mexa Institute, based in Washington, D.C., which studies Mexican communities in the U.S.

Ixmiquilpan has been transformed by successive waves of emigration, starting in the 1980s. Thousand of migrants from the region have settled around Clearwater, Fla. Many stayed in the U.S. only five or 10 years, long enough to save money to build their own house in Mexico, buy a truck and a tractor, or start a business. Others stayed, leaving rocky fields at home dotted with half-finished or unoccupied U.S.-style dwellings built with money sent home. Remittances to Ixmiquilpan, mainly from the diaspora, totaled \$129 million last year, more than 10 times the municipal budget.

The pandemic hit as many children of the first migrant generation were coming of age. Benigno Ñonthe's youngest son, Lauro, finished high school and left four months ago. Ñonthe says the boy liked to watch internet videos about the rich and famous. He read Henry Ford's autobiography and personal finance bestsellers like *Rich Dad, Poor Dad*, and idolized Michael Jordan and Mexican billionaire Carlos Slim. Lauro's older siblings had all managed to secure professional jobs in Mexico, but Ñonthe's youngest told him, "You only go to school to become an employee."

Ñonthe, who bought a tractor with the money he earned in Florida years ago, warned his son of the risks involved, but he couldn't dissuade him. "Sometimes you have to let the fear go," he says. "When he returns, he will have a lot to tell."

He isn't even sure which state Lauro is living in, but says he's found plenty of work in construction. The industry, which relies heavily on unauthorized migrants, has fared better than many

others. While nonfarm employment fell about 6% from February 2020 to February 2021, construction employment fell only 3.8%.

Republicans have seized on immigration and asylum as issues that could win them back seats in Congress in next year's midterm elections. Members of the party have said Biden created a crisis by easing Trump's rules and using more welcoming rhetoric—even though most of the previous administration's policies remain in place. On March 23 senior U.S. officials met with



Mexican Foreign Secretary Marcelo Ebrard to discuss how to defuse what some are calling a humanitarian crisis.

Santibañez, of the Mexa Institute, says it will be difficult to prevent Mexicans from emigrating as long as demand for labor that's "diligent, cheap, and available" continues to build north of the border. "Businesses that are trying to recover say to the cook, the handyman, or a construction worker, 'Get me a cousin of yours or a brother,'" he says. "That's what gets people to go."

In Mexico, Fabián Morales Marchán, head of Guerrero state's office for migrant issues, says he doesn't have data to confirm that migration is picking up. But he points to a morbid marker: In the past three months alone, the bodies of five migrants from his state, all of whom died near the U.S.-Mexico border, were sent home. "In Mexico there's not any help from governments, which means that the situation in places like Guerrero, or in Mexico more generally, has been far worse than in the U.S.," he says. "People have had to find a way to help their families." —*Michael O'Boyle and Maya Averbuch*

▲ Ñonthe's youngest son left for the U.S. four months ago

THE BOTTOM LINE Apprehensions of working-age Mexicans at the northern border have more than doubled, to about 40,000 a month, from fewer than 16,000 a month during the prior two years.

5

POLITICS



● The abject public apology, a mainstay of American politics since Grover Cleveland, is fading

Susan Wise Bauer's editor reached out to her last year about updating her 2008 book, *The Art of the Public Grovel*, about how politicians apologize when accused of sexual misdeeds. Given the #MeToo movement and claims against Donald Trump, her editor said, a new edition might sell well.

It was Bauer's turn to say sorry. "I just don't know what I would write," Bauer, a historian, recalls saying. "No one really apologizes anymore."

The modern American political apology, which dates back to President Grover Cleveland seeking forgiveness in 1884 for fathering a child out of wedlock, is in a precarious state. Earlier this month, New York Governor Andrew Cuomo—facing sexual harassment allegations from several women—gave only a semi-apology for making some female

aides "uncomfortable." He denied he did anything wrong and argued the public should "wait for the facts." He's continued to maintain his innocence, ignoring growing calls from fellow Democrats to resign. Cuomo is just the latest in a recent string of male political figures, from state lawmakers to members of Congress to Supreme Court Justice Brett Kavanaugh, who've hotly denied allegations of sexual harassment, or attacked their accusers, or claimed to be the victims of smear campaigns.

It's part of a broader shamelessness in political life. In February, according to reports, Republican Representative Marjorie Taylor Greene of Georgia privately apologized to colleagues for her social media posts claiming that school shootings were faked and supporting the QAnon conspiracy theory. In public, she remained defiant. The same month, Republican Senator Ted Cruz of Texas said a family trip to Cancun, Mexico, during a massive power outage in his home state was "obviously a mistake," but blamed the trip on his young daughters and went on to joke about it at a conservative conference.

In the past, voters demanded that politicians who'd stumbled own up to it, which they often did in tearful televised speeches. When then-New York Governor Eliot Spitzer, a Democrat, apologized for hiring escorts in 2008, his wife Silda stood beside him stoically, a moment that inspired the TV series *The Good Wife*. At times, apologizing has saved careers. In the 1970s, Democratic Representative Wilbur Mills of Arkansas salvaged a reelection attempt with an apology to voters and his wife after he was caught driving drunk with a former stripper.

The classic American political apology, in a case of sexual misconduct, draws from Christian confessions of sin. The politician appears before reporters, often alongside his spouse and a spiritual adviser. He acknowledges that he's done wrong, maybe quotes some Scripture, and asks for forgiveness. In Bauer's interpretation, by placing the leader on the same level as his audience—since Christian theology holds that everyone is born a sinner—the ritual is meant to reassure voters who might worry that the politician will take similar advantage of them.

Former President Bill Clinton and former South Carolina Governor Mark Sanford both followed the formula when begging for forgiveness in public comments after being caught cheating on their wives. “Indeed, I did have a relationship with Miss Lewinsky that was not appropriate,” Clinton said in his 1998 speech. Republican Sanford, in a 2009 address acknowledging that he wasn't hiking the Appalachian Trail but was actually visiting his mistress in South America, apologized at length to his family, his staff, friends, voters, and “people of faith.”

Then came Donald Trump. At a 2015 Christian conservative forum, he was thrown a softball question about whether he'd ever asked God for forgiveness, a standard part of Christian theology. “I am not sure I have,” he said. The next October, when a tape surfaced of Trump bragging about sexually assaulting women on *Access Hollywood*, he dismissed it as “locker room talk” and pivoted to attacking Hillary Clinton over her husband's transgressions. The tape was damaging, as was Trump's response to it, but the scandal was soon eclipsed by Clinton's own troubles, and Trump won.

Many lawmakers took a lesson from Trump's survival, says historian Julian Zelizer, a professor at Princeton University. “The media cycle is now so fast, there's a realistic assumption that if you just wait it out, eventually the media will move on to something else,” he says.

A surprising exception to the new norm came on March 21, when a potential Cuomo challenger, Republican Representative Tom Reed, released a statement apologizing to a lobbyist who said he

touched her inappropriately in 2017 and announcing his intention to retire from office. Reed apologized directly to the woman, his wife and children, voters in his district, and his colleagues. He then shared that since the incident he'd sought help for alcoholism, citing his “trust in a higher power.”

Frank Newport, former editor-in-chief of Gallup polling, says the public apology may be a victim of the rise in partisan polarization since the early 2000s. Many voters now back elected officials from the same party no matter what. “Everything is us against them, and that makes it quite easy to attribute causality for almost anything negative to the other side,” Newport says.

Democrats are still more likely than Republicans to issue a traditional apology, Bauer says—as President Joe Biden did after several women said his public touches made them uncomfortable. But that may not last. Cuomo “is going to be something of a litmus test,” she says. “If he manages to stay in power without doing a full-on grovel, I think that will be the death of the public apology.” —*Ryan Teague Beckwith*

THE BOTTOM LINE Hyperpartisanship, the online news cycle, and the example of Trump have made the shamefaced apology rare in U.S. politics, especially (but not only) on the right.

Quad Nations, Assemble

● Biden is bolstering U.S. alliances to counter China. Will it work?

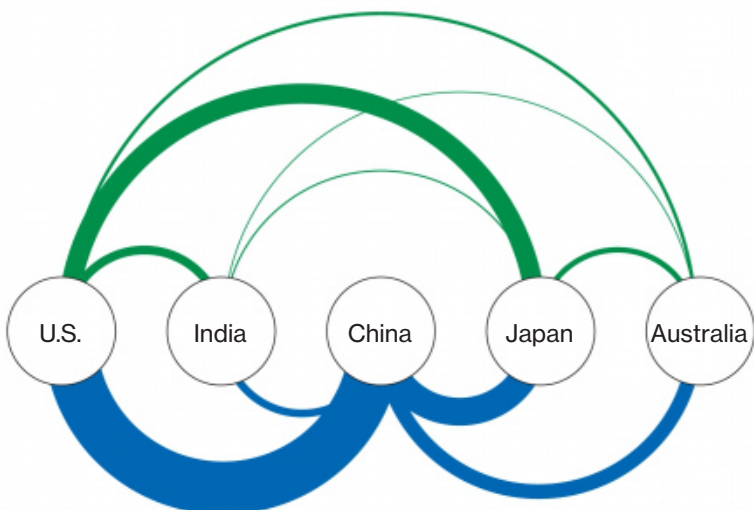
The fiery insults and recriminations at the U.S.-China summit in Alaska in mid-March showed there hasn't been a quick reset on U.S.-China relations since President Joe Biden took office. Yet while Biden has sustained his predecessor's tough approach, he's thinking differently about how to confront Beijing.

Donald Trump sought to punish China through the brute force of unilateral tools such as tariffs and sanctions. The Biden administration is trying to amplify U.S. strength by banding more closely with allies across the region. Leading up to the talks in Alaska, U.S. officials choreographed a series of meetings with allies as part of an effort to corral them as a bloc. That included a virtual meeting of Australia, India, Japan, and the U.S., or the “Quad”; a visit by ►

“The media cycle is now so fast, there's a realistic assumption that if you just wait it out, eventually the media will move on to something else”

How Trade Binds the Quad Countries to China

Total trade, 2019: / \$10b / \$100b / \$200b



DATA: UN COMTRADE

◀ Secretary of State Antony Blinken and Secretary of Defense Lloyd Austin to South Korea and Japan; and a solo trip by Austin to India.

The meetings sent a not-so-subtle message that the U.S. will intensify the use of alliances as a force multiplier. “There’s a rallying-the-crowd effort to tell China, ‘You can’t split the team anymore,’” says Sheila Smith, senior fellow at the Council on Foreign Relations. “There’s a new level of coordination and a sophisticated use of levers.”

Chinese officials aren’t happy about it, accusing the U.S. of trying to form a clique in the region. But India’s and Australia’s recent tussles with China, coupled with supply chain concerns during the pandemic, have given new urgency to the Quad.

As long as Trump eschewed collaboration—at times vilifying allies with almost the same level of vitriol he directed against Beijing—China held an upper hand against smaller countries in the region. Last year, after Australia called for independent investigators to be allowed into Wuhan to probe the origins of the coronavirus, China hit it with tariffs on such goods as coal and barley.

During the recent talks, Blinken signaled that the U.S. isn’t representing only its own grievances. “I’m hearing deep satisfaction that the United States is back, that we’re reengaged with our allies and partners,” he told his Chinese counterparts in Alaska. “I’m also hearing deep concern about some of the actions your government has taken.”

China’s Yang Jiechi fired back: “Secretary Blinken, you said you just came back from Japan and South Korea. Those two countries are China’s second- and the third-largest trading partners.”

Implicit in his comments was that although countries may be deeply worried about Beijing’s expanding military might, they’re likely to think twice before being pulled by the U.S. into an anti-China bloc that could harm their commercial

interests. While the Quad summit called for an “open” Indo-Pacific region, China wasn’t mentioned in its final statement. The group, which came together after the 2004 tsunami in the Indian Ocean region, wants to have a message of cooperation: One new initiative is for Australia, Japan, and the U.S. to invest in India’s capacity to manufacture more Covid vaccines.

Yet the group has a security component, too. The navies of Australia, India, Japan, and the U.S. last year conducted their first joint exercises in the Indian Ocean, making China feel increasingly surrounded. Meanwhile, China is changing the South China Sea’s status quo, building artificial reefs and claiming the sea’s fisheries and waterways.

In Europe as well as the U.S. and Asia, complaints about China’s intellectual-property theft and human-rights abuses are often muted by fear of undercutting commercial ties. “You either see China as a strategic competitor, or you see it primarily as a trading partner,” says Elisabeth Braw, a foreign and defense policy expert at the American Enterprise Institute. “If allies disagree on that basic perception, how could they possibly work on a unified strategy?”

The Quad acting as a collective could threaten China—if it can stick together. “This is a hard strategy to implement persistently over time,” says Smith. “China is going to do its best to peel someone off.” —David Wainer

THE BOTTOM LINE The U.S. is fostering the four-nation alliance known as the Quad to exert pressure on China. But the individual members’ close trade ties with China could make unity elusive.

Eyes on the Street

● One Asian-American community steps up grassroots safety efforts in response to attacks

Every weekday morning from 6 a.m. to 9 a.m., Sakhone Lasaphangthong walks the streets of Chinatown in Oakland, Calif., scrubbing away graffiti, dropping off McDonald’s to the people who sleep on the streets, checking in with merchants, and waving to the grandmothers buying vegetables. He’s a designated “ambassador,” employed by the Oakland Chinatown Chamber of Commerce, and his job is to watch over the neighborhood. “My role as ambassador is not to be a security guard



◀ Lasaphangthong

or a police officer. It's mainly to keep Chinatown clean and safe," says Lasaphangthong, 45, who was born in Laos.

In February, Oakland's Chinatown was the site of 18 attacks against Asian Americans in just two weeks, according to Alameda County's district attorney. The March 16 shootings at spas in Atlanta that killed eight people—six of them Asian women—is the latest in a wave of anti-Asian violence across the U.S. An estimated 3,800 hate incidents against Asian Americans have been recorded since the pandemic began, according to the tracking initiative Stop AAPI Hate, most of them reports of verbal harassment but 11% instances of physical assault.

Anxiety has flared in many Asian-American communities, and the carnage in Atlanta spurred some cities to increase police presence. Seattle and San Francisco sent extra patrols to protect Asian neighborhoods; New York City Mayor Bill de Blasio said he'd deploy members of the city's counterterrorism unit to monitor Chinatown.

But there are also efforts to increase safety without relying on law enforcement. Some Asian-American advocates have resisted calls for more police, highlighting the impact of police violence on Black and other minority communities.

As various U.S. cities launch or consider pilot programs to respond to mental health calls with social and health-care workers instead of police, Lasaphangthong and others in Oakland's Chinatown are already modeling a community-based safety program. After Lasaphangthong's morning shifts, other patrols do figure eights around the block. They paper local businesses with flyers that offer escorts for anyone who feels vulnerable, and they stay alert for disturbances.

Lasaphangthong has served as an ambassador

since 2019, trying to repair harm he'd done before serving time in prison for a violent crime he committed when he was 22. (Reintegrating former offenders was one goal of the program, which was founded in 2017.) He's focused on building a relationship with Chinatown's homeless, many of whom struggle with mental health and addiction problems. Recently, he says, locals called him to respond to an altercation between two men, one of whom had accused the other of stealing a cellphone, and he was able to talk them down before things got violent. He says he was shocked when Pak Ho, a 75-year-old man from Hong Kong, died after being assaulted and robbed on the streets of Chinatown on March 9—he used to see Ho practicing tai chi at a local recreation center.

In response to rising violence, Chinatown merchants have hired armed guards to stand watch on street corners. The Oakland Police Department dispatched a liaison officer who speaks Cantonese to Chinatown, and Carl Chan, president of the Oakland Chinatown Chamber of Commerce, has said the business owners he represents want more of a police presence in the neighborhood. But some local activists reject that idea, calling to address the root causes of crime instead. Oakland already spends about 45% of its general fund on policing.

Lasaphangthong is the only paid Chinatown ambassador currently; the president of the Oakland City Council recently called to expand the program. Extra eyes have helped combat intimidation, Lasaphangthong says. "That's what means a lot—seeing the folks, the grandmothers, still coming out, no matter what. Still living their life, and not living in fear." —*Sarah Holder*

THE BOTTOM LINE A program in a Bay Area Chinatown to prevent crime and make residents feel more secure could be a model for other U.S. cities seeking to stem violence.

How About ACovid

Vaccines are great and all, but molnupiravir, an antiviral drug in late-stage trials, could give doctors another major tool to end the pandemic—if, of course, it proves safe and effective

**By Cynthia Koons
and Riley Griffin**



Pill?!

The story of what might become the next major breakthrough in Covid-19 treatment starts on a hotel hallway floor in January 2020, months before you were worried about the virus, weeks before you likely knew it existed. A scientist and a business executive were at a health-care conference in San Francisco, hatching a plan to get a promising drug out of academia and into research trials for regulatory approval. George Painter, president of the Emory Institute for Drug Development, and Wendy Holman, chief executive officer of Ridgeback Biotherapeutics, had met at the Handlery Union Square Hotel to discuss a compound Painter had started developing with funding from the National Institutes of Health. They got so enthusiastic about the possibilities that their meeting ran long and a group of lawyers kicked them out of their room. So they continued on the hall floor, hours after they'd started.

Painter and Holman weren't talking about targeting Covid at the time. The disease and the coronavirus that causes it, SARS-CoV-2, weren't major concerns at the J.P. Morgan-run conference, where handshakes and cocktail parties with hundreds of guests were still the norm. Rather, Painter was hoping his drug, molnupiravir, could get more funding to speed up flu studies. Holman was eager to see if it worked on Ebola. That's the thing about molnupiravir: Many scientists think it could be a broad-spectrum antiviral, effective against a range of threats.

A few days later, Holman arrived in Atlanta to see the labs at Emory and pore through the early data. As she and Painter hashed out the terms of a deal in which Ridgeback would buy the drug and start studying its safety and efficacy in people, Covid was seeping into the public consciousness. By the time Ridgeback announced its acquisition of molnupiravir, on March 19, the world had shut down, and it was clear which threat the drug needed to be tested on right away. Clinical trials for the pill kicked off in April. The next month, Merck & Co., which has a deep history of public-health development work, including on HIV and Ebola, struck a deal to buy molnupiravir from Ridgeback and start the types of large-scale trials that could get it authorized by regulators. Those began in the fall.

Even as vaccines are rolling out worldwide, the coronavirus and its mutations still pose a major health threat. Not everyone who's eligible for a shot will agree to get one. The hundreds of thousands of people who continue to contract Covid each day have few treatment options. There's no simple, inexpensive pill that can prevent those at the earliest stages of infection from later needing to be hospitalized. The monoclonal antibody therapies that doctors now have available for those most at risk of getting severely ill need to be administered by infusions at specialized medical centers. And for those who do become hospitalized, the antiviral remdesivir, from Gilead Sciences Inc., speeds recovery, but hasn't been shown to reduce deaths.

Drugmakers see an opportunity to add to the arsenal of potential therapies. There are 246 antivirals in development, according to the Biotechnology Innovation Organization, an industry trade group. And companies as big as Pfizer Inc. and as little-known as Veru Inc. are testing them in pill form. Merck's molnupiravir is among the furthest along. Its developers hope

the pills can be prescribed widely to anyone who gets sick. Think Tamiflu for Covid.

The hurdle, beyond ensuring the drug works, is making sure it's safe. Developers of antivirals have been dealing with the thorny issues they pose for decades. Should Merck succeed in demonstrating that molnupiravir is effective and free of serious side effects, it could be a boon to the company, and to society, for many years to come.

Viruses are uniquely difficult to attack with drugs. They hijack human cells and set up machinery to churn out copies of themselves, creating a challenge: destroying the virus without harming the cells. Success, when it comes, can be fleeting, because viruses mutate to survive.

The first antiviral approved in the U.S. was idoxuridine, a herpes treatment regulators green-lit in 1963, generations after the discovery of antibiotics. It's among a widely used class of drugs called nucleoside analogues—synthetic versions of nucleosides, critical building blocks of DNA and its counterpart, RNA, the messenger molecule that delivers instructions to a cell's protein-making factories. Nucleoside analogues prevent viruses from replicating, or from replicating effectively, inside cells.

Concerns that idoxuridine was toxic to the heart led it to be recommended only for topical use—the sort of hurdle that kept antiviral drug development slow. The AIDS crisis of the 1980s invigorated the field. “Until HIV came along, there were precious few antivirals,” says Saye Khoo, a professor of pharmacology and therapeutics at the University of Liverpool. Rising death rates and the public outcry about the virus prompted companies and governments to pour millions of dollars into an area that hadn't seen that kind of investment before.

The breakthroughs were meaningful. Khoo says scientists discovered that some people appeared to have a natural resistance to getting HIV—they lacked a receptor allowing the virus to enter cells—leading to a new class of drugs. They also realized that antivirals would need to be adaptable enough to deal with mutations, and that potent combination therapies involving multiple drugs could prevent the evolution and spread of drug resistance. At the same time, some of the new treatments had serious side effects, including anemia and liver problems, pushing drugmakers to continually improve upon their treatments.

During this era, the U.S. government also started to boost its pandemic preparedness, with an emphasis on guarding against bioterrorism. President Bill Clinton, alarmed after reading the Richard Preston novel *The Cobra Event*, in which a terrorist unleashes a virus that causes a fictional ailment called brainpox, convened a group of cabinet members and scientists in April 1998 to assess such threats. That led to the formation of what's now called the Strategic National Stockpile, whose objective was to have enough emergency medicines and materials to deploy within 12 hours of an official request in times of crisis. Following the Sept. 11 and anthrax attacks of 2001, the Bush administration directed the stockpile to procure products such as smallpox vaccines. Then, in 2006, Congress authorized the formation of the Biomedical Advanced Research and

Inside Merck's infectious disease laboratories in Lansdale, Pa., where scientists are researching molnupiravir and other potential Covid-19 treatments



Development Authority, or Barda, to help develop treatments and vaccines for public-health threats.

Pharma's next major advance in antivirals came in 2013, a \$1,000-per-pill hepatitis C cure produced by Gilead. The company was roundly criticized for setting so high a price for such a widely used drug. It was the usual risk-reward problem: If pharma companies can't command prices that allow them to profit from the drugs, they aren't likely to invest in them.

When they do invest, they have much more incentive to focus on chronic diseases than acute ones, which entail inherently shorter treatment—and revenue—windows. “If you look at what drugs have been developed against viruses, you have HIV, you have hep C, you have herpes. Those are all chronic infections. That means longer-term therapy,” says Ashley Brown, an associate professor at the Institute for Therapeutic Innovation at the University of Florida's medical school. “For these acute viral infections like dengue, West Nile, chikungunya, you don't have anything to treat with.” Doctors were also left scrambling when the two prior coronavirus pandemic threats—severe acute respiratory syndrome (SARS) and Middle East respiratory syndrome (MERS)—emerged, in 2003 and 2012, respectively. Even for influenza, there are only four approved antiviral drugs recommended by the Centers for Disease Control and Prevention.

Barda might have helped fill the breach in antiviral drug research, but almost from the beginning it didn't get the funding it needed to support a robust pipeline. The U.S. government's focus on bioterrorism in some ways overshadowed the threat of infectious disease outbreaks. “There has not been as focused a strategy of investment in developing antivirals for pandemics,” says Phillip Gomez, who established a production program for potential HIV, SARS, and Ebola vaccines at the National Institute of Allergy and Infectious Diseases (Niaid) in the early 2000s before returning to the private sector.

Barda was also limited because the kinds of drugs that might be most useful in preparing for a pandemic—broad-spectrum compounds that fight multiple viruses—are particularly difficult

to develop. “The whole field has been littered with casualties, candidates that never worked,” says Robin Robinson, director of Barda from 2008 to 2016. Even if a given formulation succeeds in stymieing the replication of one virus, that doesn't mean it will work on another. That's because viruses have different ways of replicating, he explains. So, rather than put money toward what Robinson calls a “moonshot,” the U.S. government has taken a more targeted approach, funding antivirals tailored to specific viruses rather than for a number of them. And getting enough money to do that has always been an issue. “Every time we have a big emergency in the United States in the last 75 years, we do a great job afterwards, and it dissipates four or five years after that, when the funding runs out,” Robinson says.

Without the government spending billions of dollars on potential pandemic drugs, a handful of academic centers were left doing much of the research work, until something proved promising enough that a biotech or a pharma company stepped in to pay for large-scale trials. Put bluntly, “pharma has an attention deficit disorder,” says Ali Munawar, founder of two early-stage antiviral drug companies, one of which was bought by Johnson & Johnson. “I think it is the reward issue,” he adds. “You cannot predict when the next pandemic is going to hit. That uncertainty is difficult to plan for.” Drugmakers' lack of interest in developing antivirals for infectious diseases created what's known as the valley of death, where promising discoveries land because no major pharma company steps in.

Once in a while, though, an opportunity arises.

The chemical compound on which molnupiravir is based— $C_9H_{13}N_3O_6$, or N4-hydroxycytidine—has been known for decades. Like idoxuridine, the herpes drug, it's a nucleoside analogue. It interferes in replication, preventing a threat from causing severe infection. Molnupiravir doesn't stop the virus from replicating, though; instead, the drug introduces errors into the virus's RNA that are then replicated until it's defunct.

With antivirals such as this, “basically you're going to put ►

◀ a piece of sand in the gears and hope it stops the impact of the virus,” says Gomez, the former NIAID scientist. But, he adds, stopping the virus by creating errors in the genetic code or through other means can come with unintended consequences. “You don’t know where the sand might end up in the other parts of the body.” A company called Pharmasset Inc. (a hepatitis C drugmaker Gilead bought in 2011) investigated molnupiravir’s main ingredient around the turn of the century, but it abandoned development over concerns that it was mutagenic, meaning it could lead to birth defects.

Painter dusted off the chemical structure of molnupiravir years ago. Prompted by a concern raised by the Defense Threat Reduction Agency, a unit of the U.S. Department of Defense, he was looking for a countermeasure against weaponized Venezuelan equine encephalitis, the stuff of *Cobra Event*-level nightmares. A chemist who holds 45 patents, some for hepatitis B and HIV antiviral drugs in use today, Painter has made a career of bridging the gap between academic drug discovery and the biotech and pharma industries that get treatments across the finish line. He took the chemical structure that Pharmasset had once studied and screened it against a wide range of viruses, including SARS and MERS. In late 2016 he made it possible to use in pill form by modifying that chemical structure into a “prodrug,” which meant the compound would break down in the body, allowing the part that interferes with viral replication to be properly absorbed into the bloodstream.

After his initial research, Painter settled on influenza, an ever-present threat, as molnupiravir’s first target and prepared to launch an NIH-funded safety trial in early 2020. He also applied for funding from Barda but didn’t get it. Rick Bright, then the agency’s director, later noted in a whistleblower complaint about the Trump administration’s pandemic response that, though his supervisor at the Department of Health and Human Services was excited about molnupiravir and wanted to fund it, Bright had been reluctant to invest when it was first presented to him in the fall of 2019. Other nucleoside analogues had caused birth defects in animals, and he wanted more safety data before signing off.

That’s where Holman came in. Her story is unusual for biotech. She’d worked in finance for more than 15 years, developing experience with the health-care industry before deciding she wanted to get into drug development for diseases with few existing treatment options. Her husband, Wayne, is a doctor and former health-care specialist at a division of Steven Cohen’s SAC Capital Advisors. Wayne’s hedge fund, Ridgeback Capital (an homage to the family dog, a Rhodesian Ridgeback named Coco), invested in major drug companies such as BioMarin Pharmaceutical Inc. and Celgene Corp. before he co-founded

Ridgeback Biotherapeutics with Wendy in 2015. She became the biotech’s CEO and face.

Ridgeback Bio is best known for developing an approved Ebola treatment, Ebanga, which had its own wild journey. The centers where it was tested in Congo got caught up in violence and burned down during trials, as dedicated staffers saved patient records. (Holman has lately been working out how to transport the drug to parts of the country experiencing renewed outbreaks.) Her interest in molnupiravir stemmed from wanting to find new Ebola treatments.

As soon as she and Painter realized the urgency of the Covid crisis, they redirected their molnupiravir research toward SARS-CoV-2. She used her connections to track down the CEO of Labcorp—the company was busy making desperately needed Covid tests, but it also has a clinical trials business—to help her secure a facility in the U.K. for early-stage safety studies. “We came in and funded that because if we had waited around for the flu Phase I to happen, it would’ve taken six months to a year,” Holman says of those early studies of the drug.

Before the scale of the pandemic sank in, Ridgeback had invested enough in production to pay for 1 million treatment courses. “Then we started really thinking about it and thought, ‘If this is really needed and this can really work in this, that’s not enough drug,’” Holman says. “I did everything—there’s not a friend I didn’t call or a colleague I didn’t beg from.”

Her quest for more capacity made Merck a natural fit. The deal the companies struck last May involved a direct payment to Ridgeback for the drug and an agreement for a share of the profits if it’s approved. Ridgeback also kept a hand in development, running some trials seeking to further the research while Merck handled the large-scale ones. “The reason to partner with Merck,” she says, was to “make sure that there was enough drug around for the world.”

Merck could use a big win. In recent years it’s grown heavily

dependent on a single cancer drug and a declining diabetes franchise. It was also late to the Covid vaccine race, and the two candidates it tested failed in human trials, relegating the company to the unglamorous work of manufacturing the competition’s shots.

After reaching the deal with Ridgeback, Merck launched Phase II/III trials aimed at enrolling almost 3,000 patients in the U.S., Colombia, Israel, Russia, and elsewhere. With millions of people contracting Covid worldwide, the company’s chief of research at the time, Roger Perlmutter, says he would “look at the enrollment in our trials twice a day,” checking in constantly about the pace of recruitment in hopes of bringing molnupiravir to market in record time. (Perlmutter has since retired from Merck.)



Molnupiravir

“There’s always a little bit of tension around these issues of, well, is the drug going to work or not?”

The company is studying a variety of dosages, keeping a close eye on side effects, and monitoring a range of disease progressions, including following up to learn whether patients at different stages of Covid end up hospitalized, suffer an adverse event, or die. It’s also looking at whether or not molnupiravir reduces viral load—a measure of virus particles concentrated in the body after a person becomes infected. These studies could form the backbone of an emergency-use authorization submission with regulators.

In early March, results came in from a smaller study Ridgeback conducted of 202 nonhospitalized adults with Covid. Chief Medical Officer Wendy Painter, George’s wife, was listed as the lead author on findings from the study that were presented at one virtual conference. Some patients with detectable levels of virus particles saw them reduced after five days on the drug, with no major safety concerns. It was a good sign, but the study wasn’t comprehensive enough to determine efficacy on its own. “There’s a signal, there’s no denying that, but the numbers are so small that to say this is the ‘next antiviral,’ we need to be cautious of that,” says Adarsh Bhimraj, head of neurologic infectious disease at the Cleveland Clinic.

Data from Merck’s Phase II/III trials is expected in late March. Scientists are eager to find out if a reduction in viral load translates to better Covid outcomes. “We think that the more you lower the virus, the more likely it is to be beneficial,” says Rajesh Ghandi, an infectious disease physician and professor at Harvard Medical School. “We’ll also look to see, does it affect people’s clinical severity?” One reason Merck is studying molnupiravir in earlier-stage patients as well as later-stage, hospitalized ones is that interfering in viral replication might not make much difference in someone who’s already had Covid a while.

Then there’s the question of safety, which has resurfaced since Bright’s concerns first emerged. This March, researchers working out of the University of North Carolina at Chapel Hill presented a study of the drug’s main ingredient at the same infectious disease conference where Ridgeback presented its data. The UNC researchers said, based on their assays, that molnupiravir’s use should be limited to those likely to get the greatest benefits, “due to the unknown long term risks associated with systemic exposure to a DNA mutagen.”

Merck declined to comment on the UNC research. But given the class of drugs, “you do worry,” says Nicholas Kartsonis, senior vice president for clinical research for infectious diseases and vaccines at the company. “You want to make sure it doesn’t cause genetic mutations.” Merck has done studies in the lab, in rodents and in humans, and the data look clean, he says. What gives him the most confidence is a pair of two distinct assays looking at the drug’s capacity to alter DNA in living organisms. Here, molnupiravir was studied at higher doses and for longer periods than would be given to humans. The totality of data indicates it’s not mutagenic, Kartsonis says, “but I

need that efficacy data to help confirm it’s not just a sugar pill.”

Some scientists say that, because the drug is only intended for use twice a day for five days, its potential to cause damage is limited. And Bright himself has changed his tune. “Any concern I had about an academic group or a small startup trying to move too quickly, those were softened when Merck got involved,” he says, adding that he trusts the drugmaker to do the right safety studies. “Merck, more so than many other companies, has terminated projects because the data didn’t look right.” Umer Raffat, a pharma analyst at investment firm Evercore ISI, says that while “big names in virology” have raised concerns about the risk profile of the drug, Merck is “very conservative,” and the early data don’t suggest the drug is mutagenic.

“There’s always a little bit of tension around these issues of, well, is the drug going to work or not?” says Robert Shafer, a Stanford medical school professor who specializes in infectious diseases. Data on how much molnupiravir reduces viral load, what effect this has on Covid, and what side effects it has “will definitely influence how widely a drug like this will be used,” Shafer says. “If there were remaining concerns, you’d probably use it in really limited circumstances to prevent Covid in high-risk patients. If accumulating data suggests it doesn’t have off-target effects, you might use it in lower-risk persons.”

For Merck, this could be the billion-dollar question. “It could be a \$1 billion or \$10 billion product,” depending on how the data turns out, says Mara Goldstein, an analyst at Mizuho Securities Co. Merck is considering studying molnupiravir as a preventive treatment, to be deployed after a person is exposed but before they’ve fallen ill. That would allow the drug to be deployed even more broadly in the fight against Covid.

If the drug proves safe and effective, Merck says it’s ready to go, with the capacity to make as many as 100 million molnupiravir pills, enough to treat 10 million people, by the end of the year. Down the road, the drug could even be an asset beyond the fight against Covid. Painter says it’s shown promise against a number of RNA viruses, not just SARS-CoV-2, which would mean it could help governments prepare for the next pandemic. “You never know what the next one is going to be,” says Brown, of the University of Florida. “Back when Zika happened, I was also looking at a lot of these drugs against Zika. Everything was Ebola, and then Zika. We have to kind of get ahead of it as opposed to trying to catch up.”

Timothy Sheahan, an assistant epidemiology professor at the University of North Carolina who worked with Painter on some of the early research into molnupiravir and played a role in Gilead’s remdesivir, thinks that, as soon as a year or two from now, there will be far more antivirals than there are today. “I’m predicting it will be unrecognizable,” he says. “The things that we will have at our disposal if another coronavirus emerges will be black-and-white compared to what we have today.” Molnupiravir, should it succeed, could be just the beginning. **B**

Disorder on the

Pospisil in Delray Beach, Fla.

48

Count

With Rafa, Roger, and Serena in the twilight of their careers, pro tennis is struggling to reform itself. Some players are taking matters into their own hands

By David Yaffe-Bellany

It was a rare sight at last year's pandemic-interrupted U.S. Open: a crowd. One afternoon in late August, a group of about 80 male tennis players in T-shirts and masks gathered at the Grandstand stadium in Flushing Meadows, filling up rows of dark-blue seats, like schoolboys assembled for a socially distanced class picture. The only action on the court below was a practice session. The 57th-ranked female player, Ajla Tomljanovic of Australia, was rallying with a partner, glancing up in bewilderment as the men applauded between points.

The group had been summoned to Grandstand by Canadian pro Vasek Pospisil and Serbian world men's No. 1 Novak Djokovic. Frustrated with the slow pace of change in elite tennis, Pospisil and Djokovic were aiming to form a players association—not a union, exactly, but a group that could negotiate with tournaments for prize money and threaten boycotts when necessary. The meeting, convened via WhatsApp, was the latest salvo in tennis's never-ending war with itself.

Djokovic arrived a few minutes late, after winning a grueling match across the complex. He and Pospisil took turns speaking, straining to be heard over the sound of planes roaring above LaGuardia. Their goal wasn't to dismantle the structure of professional tennis, they assured the group. They simply wanted the executives who run the sport to take players' concerns more seriously.

Soon, phones started to buzz, with a message from the Association of Tennis Professionals (or ATP), the business entity that runs the men's tour. American pro Ryan Harrison handed his phone to Djokovic, who started reading the message aloud—six paragraphs seemingly designed to discourage labor organizing. “The consequences of a separate Player Association are unknown,” it said. “The future could become very different.”

By some metrics, tennis is the world's fourth-most-popular sport. Its global fan base numbers more than a billion, and its superstars are among the best-paid athletes anywhere. As a

business, though, it's a perennial underachiever, accounting for only 1.3% of the total value of global sports TV and media rights, a smaller share than golf, hockey, or cricket, according to a 2018 report by data company SportBusiness. Players good enough to win matches at Grand Slams struggle to support themselves on their tennis earnings, sometimes taking second jobs to make extra income.

Attempts to fix the sport tend to devolve into infighting. Players and tournament organizers joust constantly over prize money. The men have proved unwilling to collaborate with the women. “Everyone distrusts everyone else,” says Etienne de Villiers, who served as ATP chairman from 2005 to 2008. “To use a very eloquent Wordsworthian expression, it's a ratf---.”

Even before the pandemic, tennis was facing a period of uncertainty, as perhaps its greatest generation of stars—Roger Federer, Rafael Nadal, and Djokovic on the men's side, and Serena Williams on the women's—neared retirement with few clear successors in sight. The coronavirus left tennis further exposed, with revenue dropping as its fractured leadership struggled to stage tournaments. But the virus has also prompted the sport's leaders to contemplate reform. There's been renewed discussion of a partnership between the men's and women's tours, a proposal that could produce a surge in revenue. Calls for shorter, more TV-friendly matches have intensified. And the simmering tensions between players and tournaments have pushed some of the sport's stars into open revolt.

At Grandstand, the players posed for a photo to pledge support for the new Professional Tennis Players Association. As news of the initiative traveled, Djokovic and Pospisil were asked to step down from the ATP's Player Council, an elected body that represents player interests within the pro tour. Djokovic is a polarizing figure in tennis—an 18-time Grand Slam champion with a penchant for pointed criticism of the sport's establishment. His main rivals in the conversation about the greatest men's player of all time, Federer and Nadal, swiftly distanced themselves from the break-away group, saying a pandemic was the wrong time to seek a structural overhaul.

Yet another fissure was opening in a fractured sport. Novak vs. Rafa and Roger. The players vs. the ATP. One reporter compared Djokovic and Pospisil to Cassius and Brutus, the assassins of Julius Caesar.

Pro tennis is less a single enterprise than a sprawling and divided empire, composed of fiefdoms and sub-fiefdoms, factions within sub-fiefdoms, and sub-factions within factions. Before the pandemic, the sport generated roughly \$2.3 billion in annual revenue. About 60% comes from the U.S. Open and the three other Slams, each of which operates independently, under the auspices of a private club or national tennis federation. Much of the rest comes from tournament circuits supervised by the ATP and its counterpart, the WTA (Women's Tennis Association). ►

◀ A third governing body, the ITF (International Tennis Federation), holds its own events, including head-to-head team competitions among countries.

The ATP and WTA are structured as partnerships between players and tournament organizers—labor and management at the same table. The arrangement has led to political paralysis, especially at the ATP. The organization’s board consists of an equal number of player and tournament representatives, overseen by a chairman who can cast tie-breaking votes. The structure isn’t the result of careful long-term planning among tennis’s factions; it’s an historical oddity that emerged from a power struggle in the late 1980s.

Rather than exploring initiatives to generate revenue, the ATP board has often spent its time adjudicating disagreements over prize money and calendar commitments. The players want to play less and earn more; the tournaments want players to play more and earn less. “It’s like watching a soap opera,” says Charlie Pasarell, who spent two decades on the ATP board as a tournament representative. “You can stay away from it for a year or two. And then you turn it on again and start watching it, and the plot is still the same.”

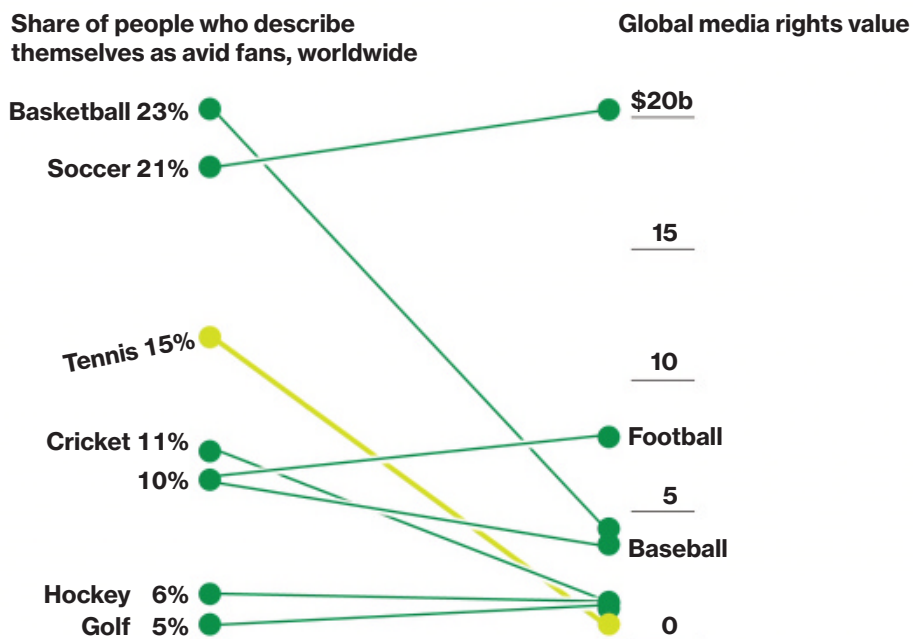
Last year the chairman of the ATP, Andrea Gaudenzi, circulated a report warning that tennis could “drift towards obsolescence” unless competing factions started working together. But Pospisil, a wiry 30-year-old with a toothy grin, says he joined forces with Djokovic after growing distrustful of the sport’s executives. “You see these guys walk around in their suits, and they’re all smiley,” he says. “Most players are breaking even or losing money. It shouldn’t be like that.” (Djokovic declined to be interviewed.)

Players often complain that the ATP and WTA partnerships favor the tournament owners, who have the time, money, and business expertise to advance their interests. Historically the players’ power has hinged largely on whether top stars have been willing to advocate for their colleagues. “The game is always at the mercy of what type of persons you have at the top,” says Richard Evans, a historian of the sport. “We got a period with [Björn] Borg and [Guillermo] Vilas and that gang—very nice guys, great friends of mine. But they really didn’t give a s--- about anyone else.” In the early weeks of the pandemic, Dominic Thiem, an Austrian who won last year’s U.S. Open and has earned almost \$30 million in prize money, expressed reluctance to contribute to a fund for lower-ranked players struggling with unemployment. “Many of them are quite unprofessional,” he said at the time. “I don’t see why I should give them money.”

For the most part, though, the current generation of



Tennis, Anyone?



DATA: YOUNG & RUBICAM, SPORTSBUSINESS ANNUAL MEDIA REPORT 2018

stars has been generous. In 2012 a group of top players led by Federer negotiated with the Slams to secure prize-money increases for the early rounds, an initiative that Williams also supported. And then there’s Djokovic. Although his many detractors have dismissed the players association as a ploy to increase his influence in the sport, he frames his activism as a moral responsibility. “When we talk about politics in tennis, we mostly talk about the first 50 to 100,” he said at a news conference in November. “Little attention is paid to those who are the largest group, from 100th to 500th place. They have big problems.”

In 2017, as a senior at the University of Virginia, Thai-Son Kwiatkowski won the NCAA men’s singles championship, earning a slot at that year’s U.S. Open. After college, however, he suffered from a knee injury and had to pay for his own rehab as he worked through the setback. In 2019 he tweeted a breakdown of his taxes, showing a loss of \$63,000. “Basically all I’m saying,” he wrote, “is put your kids in team sports.”

Tennis’s top players make their money largely from endorsements. Naomi Osaka, the No. 2 ranked woman, earned \$37.4 million in 2020, almost all of it from sponsors, making her the world’s highest-paid female athlete, according to *Forbes*. The top earner in men’s tennis, Federer, made \$106 million, with \$100 million from endorsements. But the vast majority of players depend entirely on prize money, which sometimes barely covers travel expenses. “It’s not glamorous,” says Noah Rubin, whose popular Instagram page, Behind the Racquet, aims to raise awareness about the struggles of lower-ranked players. “You’re losing on your own. There’s not a lot of help for you. It becomes a very dark place for a lot of players.”

In 2018, Rubin reached No. 125 in the world and competed in two Grand Slams. That year he made about \$225,000 in prize money, roughly \$600,000 less than the equivalently ranked golfer on the PGA Tour over a similar period. But

he walked away with only \$15,000 of his earnings, he says, after accounting for travel, food, equipment, lodging, and the salaries of his support staff.

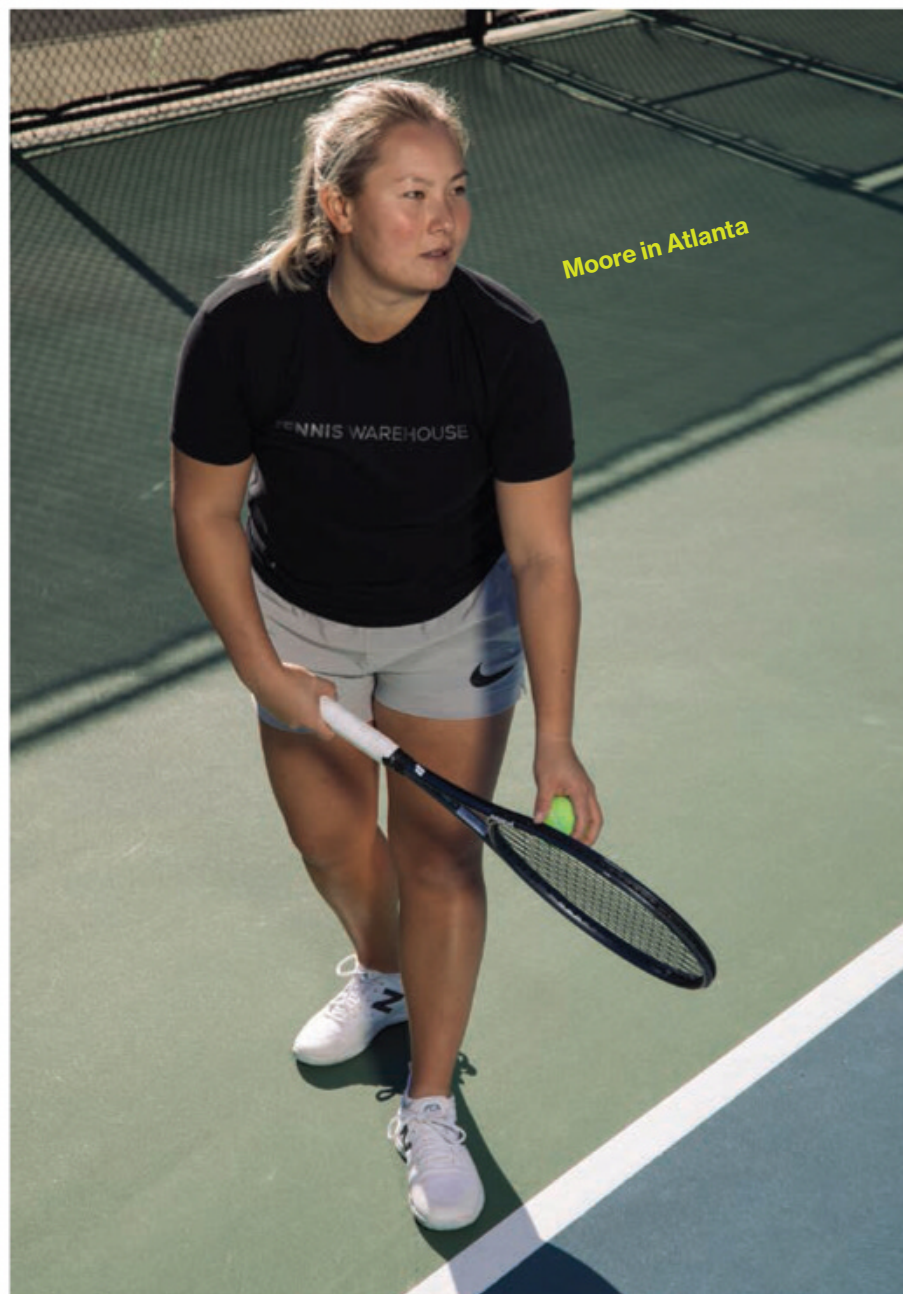
On the women's tour, player finances are even more precarious. Jamie Loeb, a 26-year-old American ranked in the top 300, says she's either broken even or lost money every year she's played professional tennis. During the pandemic she took a part-time sales job with a company that makes green clay courts. "We all find our own ways to stay afloat," she says.

The pandemic hit lower-ranked players especially hard. Despite Thiem's objections, the ATP, WTA, ITF, and the Slams ultimately allocated more than \$6 million to help a group of about 800 male and female players. But that spirit of generosity had its limits. Last spring, Tara Moore, a Brit who's been ranked as high as No. 145 in the world, learned that the WTA was presenting details about its rejiggered tournament calendar at virtual meetings she couldn't attend because her ranking had slipped below a certain threshold—a restriction that was in place even though the meetings included updates about lower-level ITF tourneys. "It's already hard enough," Moore says. (A WTA spokeswoman says the organization limited attendance because the "primary focus" was on WTA events.) When Moore eventually got a copy of the calendar and circulated it on Twitter, some higher-ranked women reacted indignantly, claiming she was spreading confidential information.

Moore is working with Pospisil to persuade players on the women's tour to join the breakaway association, but so far she hasn't had much luck. "Women are a lot more cautious than men," she says. They want to know exactly how the group will be structured before they sign up. Pospisil says he and Djokovic are still crafting bylaws and recruiting executives from outside tennis, with an unveiling planned for some time in the next few months.

Privately, some current and former tennis executives argue that lower-ranked players' struggles are simply a function of capitalism—that tennis is a star-driven sport in which the top 30 or so players generate the bulk of the economic output. Others call that view a failure of imagination: Shouldn't a multibillion-dollar sport allow more than 30 athletes to become stars and others to make a comfortable living?

Many players describe investing in a tennis career as essentially a gamble—a bet that traveling to a far-off tournament or hiring an expensive coach will produce prize-money gains to offset the initial costs. Some would like to see initiatives to reduce the risk, such as a minimum salary modeled on the relief payments supplied during the pandemic, or tournaments with experimental scoring systems that might create new opportunities for lower-ranked players. "There are steps that can be taken to make tennis more popular and expand the fan base instead of having all these tournament formats where Roger, Rafa, and Novak go deep," says Peter Polansky, a Canadian journeyman who's played at all four Grand Slams. Rubin has been raising money from sponsors for a new circuit of tournaments that would have a cumulative scoring



format and operate outside the ATP and WTA, with the first event scheduled for September.

Strengthening tennis's lower ranks would also help protect the sport's future. "As much as we want Federer and Nadal and Djokovic to be playing until 2054, that's not going to happen," Moore says. "There needs to be a next generation. There needs to be a pool of people that are keeping the competition alive."

At one point in his tenure as ATP chairman, Etienne de Villiers got a call from an old friend: Bernie Ecclestone, the British billionaire who'd built Formula One into a European sports power. As the two men commiserated over the state of professional tennis, the conversation turned to a remote hypothetical: What if Ecclestone ran the show?

The conversation was simply "idle conjecture," de Villiers says, not a serious discussion of possible investment. But Ecclestone acknowledges mulling the possibility over the years, saying he's batted around ideas on how to "take over the tennis" with contacts in the sport. If he were to invest, however, he'd want to own all the major properties and make the decisions himself. "I'm not anyone to support democracy too well," he says. "You need a dictator of sorts."

The prospect of a unified tennis ecosystem, in which a single owner or commissioner controls the Grand Slams, the ATP, the WTA, and the ITF, is often invoked as the sport's best hope for reform. It would, among other things, allow ►

media and sponsorship deals to be negotiated jointly, creating a more marketable product and increasing revenue. At the moment, the three governing bodies and each of the Slams negotiate TV rights separately, resulting in a random-seeming set of tournaments. “Tennis needs to reduce the amount of fragmentation,” says Mark Webster, chief executive officer of the ATP’s media rights arm. “You can sell the story of the season all the way through. That would be nirvana.”

There’s no realistic prospect that the sport’s current powers would allow someone to buy them out, though. Several times over the past 20 years, the ATP and WTA have discussed the more achievable transformation of merging their tours, an idea Billie Jean King originally championed in the 1970s. But those discussions ran into a stubborn obstacle: the pervasive locker-room machismo of men’s tennis.

In the mid-2000s, WTA Chairman Larry Scott was the leading candidate to replace his longtime counterpart at the ATP. An outside recruitment company scored Scott—a vocal proponent of combined tours and equal prize money for women—higher than any other candidate. But he never got an offer. “The players said, ‘Even though he’s clearly the most qualified individual, we won’t do it,’” recalls Pasarell, the former board member. “‘He’s an American, and he wants to do this stuff with the women.’ Nixed.”

In 2008, Scott, still WTA chairman, presented the ATP



board with a merger proposal that projected revenue gains of more than \$1 billion within six years. Once again the male players rejected the idea. “It was almost a nonstarter,” Pasarell says. The ATP generates more than three times as much revenue as the WTA, and male players have long believed that a merger would benefit women more than men. “If they have to alter their practice schedule because the WTA is playing at the same venue that week, if they can’t get a courtesy car at the time that they wish because all of those transportation resources are being diverted to the WTA players’ hotel—those are things which are obstacles,” says Weller Evans, who served as a player representative on the ATP board in 2019. “They look at sharing a venue with their WTA brethren as a drain on the tournament resources that would normally be available solely for them.”

Two-time Wimbledon champion Andy Murray described a similar mindset last year when he went on CNN to discuss gender inequality in tennis. “Let’s say the first-round loser’s check for the men went from \$8,000 to \$10,000 and the women went from \$6,000 to \$10,000,” Murray said. “I spoke to some of the male players about that who were unhappy because the prize money was equal. And I said, ‘Well, would you rather there was no increase at all?’ And they said to me, ‘Yeah, actually.’”

Similarly self-defeating politics have doomed one of the sport’s other major initiatives, the establishment of a Tennis World Cup. For decades the men’s tennis calendar has featured an international team tournament, the Davis Cup, that the ITF oversees. By 2016 it was growing clear that the competition’s structure, in which matches were spaced out over months, had made it unappealing to players and confusing for fans. The ATP and ITF both hoped to create a new international team tournament that might eventually develop the commercial appeal of a Slam.

The ITF’s president, David Haggerty, considered a series of reforms, including a proposal to combine the Davis Cup with its counterpart on the women’s tour, then called the Fed Cup. “Anytime you bring men and women together, it’s the highlight of the year,” Haggerty says. “Just look at the Grand Slams, and you can see the benefits.” A joint World Cup, however, would have required the ITF, ATP, and WTA to find a slot in the crowded tennis calendar. And a combined event was a bigger change than many of the ITF’s member nations were likely to support.

Around the same time, the sports investment company Kosmos, founded by soccer star Gerard Piqué and billionaire Hiroshi Mikitani, started discussing a deal to finance a team tournament with the ATP. Piqué presented his plans to members of the Player Council, which voted in October 2016 to move forward, according to people familiar with the discussions. It took only a few months for the deal to collapse, partly over scheduling disputes. Instead, Kosmos announced a partnership with the ITF, pledging to invest \$3 billion over 25 years in grassroots tennis development and in a revamped Davis Cup tournament that would take place over one week and

“As much as we want Federer and Nadal and Djokovic to be playing until 2054, that’s not going to happen. There needs to be a next generation”

continue to involve only the men. The ATP brokered a separate agreement with the Australian tennis federation to start the ATP Cup, a team tournament with a similar structure.

Rather than create a single showpiece, the ATP and the ITF had ended up with two almost identical men’s tournaments that would be played within six weeks of each other. The negotiations were “very, very counterproductive,” says Bruno Soares, a Brazilian doubles champion who serves on the Player Council. “It was just impossible—politics and money and personal interest. Everyone is pulling the strings for their side.”

The outcome of the negotiations enraged Djokovic, who felt the ATP’s leadership had cut the players out of the discussions. “We are constantly under pressure to be pawns for someone else’s game of chess,” he wrote in a stinging 1,400-word email to council members in July 2018, a few months before the ATP Cup was officially unveiled. “They know that as the time passes, we will slowly forget about what happened, and people in power can keep on manipulating.” (He signed off on a mellower note: “Peace and Friendship... Novak.”)

A year later, Kosmos approached the ATP about merging the ATP Cup and the Davis Cup, according to people familiar with the matter, but the negotiations went nowhere. The women’s tournament, meanwhile, was rebranded as the Billie Jean King Cup and adopted a new format. The prospect of a combined men’s and women’s event seems as remote as ever. A joint World Cup remains “one of my dreams,” Haggerty says. “I may not live long enough to see it.”

In some ways the pandemic has been good for tennis. Cooped-up Americans have crowded public courts for socially distanced workouts. And at the pro level, the virus has forced even staunch traditionalists to consider structural reform. In late April, Federer announced on Twitter that he would support merging the tours. “Maybe now is really the time,” he wrote. Gaudenzi, the current ATP chairman, says he, too, supports the effort. “Crisis inevitably requires collaboration,” he says. “Once we are somehow all in trouble, we tend to stick together.”

An Italian ex-player once ranked No. 18 in the world, Gaudenzi, 47, took over the ATP at the worst possible time. “Not to forget,” he says with a wry smile. “Before the

pandemic we had the bush fires.” In January 2020, his first month on the job, wildfires ravaged southeastern Australia, interrupting an ATP event that takes place in Canberra in the runup to the Australian Open.

That same month he presented players with his vision for the ATP, an ambitious set of plans he later articulated in a 67-page document complete with a pie chart showing tennis’s tiny share of the global media market. He proposed instituting a formula tying prize-money increases to tournaments’ profit growth—a potential solution to the cycle of contentious negotiations over player earnings. He also called for expanding ATP tournaments to create more slots for players. And he floated some longer-term ideas, such as aggregating media rights with the Grand Slams.

But a political struggle loomed. Early last year, Pospisil and Djokovic told Gaudenzi about their intentions. “Guys, can you wait?” he asked them. “This is our plan. We want to change.”

The players association moved forward; the pandemic delayed Gaudenzi’s reforms. “We are dealing with crisis and big decisions on a week-to-week basis,” he says. The complexities of international public-health restrictions meant that the first leg of the 2021 calendar was finalized only in December. But the problems the pandemic has caused have also reinforced Gaudenzi’s core argument: The fractured governance of professional tennis is hurting players and reducing the sport’s growth.

After Federer endorsed an ATP-WTA merger, Nadal chimed in as well, saying he hoped to see a “union of men’s and women’s tennis.” It’s the first time in the sport’s history that the major men’s players and the leadership of the ATP have publicly supported a merger. But sorting out the details will be complicated. “I don’t have a timeline,” says Steve Simon, CEO and chairman of the WTA. “I don’t know when it will happen.”

Last year, Gaudenzi, Simon, and the leaders of the Grand Slams formed a working group to discuss pooling TV rights and other strategies to unite the sport. The mere existence of the group counts as an accomplishment, Gaudenzi says: In the past, the leaders of the major governing bodies sometimes met only a few times a year. Now meetings take place every two weeks.

The ATP board is set to vote on Gaudenzi’s proposal in June. It’s not clear whether it will pass. Players broadly support it, but some tournament organizers oppose an element of the plan that requires events to open more of their books to the athletes, according to a senior tennis executive involved in the discussions.

Gaudenzi has no shortage of metaphors to explain the challenge facing his sport. Should tennis fail to evolve into a more sophisticated and profitable media operation, he says, it could experience the financial devastation that Napster wreaked on the music industry in the 2000s. And if reforming the ATP is a marathon, the hardest stretch of the race is still ahead of him. “You either get it over the line,” he says, “or everything explodes.” **B**

WHERE THEY'RE GOING, THEY'LL NEED ROADS

54

**Pandemic caution cut off a tiny ice fishing town from the rest of the U.S.
Residents teamed up to span the gap**

**By Donna Cohen
Photographs by Ackerman + Gruber**

→ Guests pay at least \$120 per vehicle for a round trip on the Northwest Angle Guest Ice Road, which runs through 8 miles of forested snowmobile paths and 22 miles across the massive frozen Lake of the Woods. (A season pass costs \$500.) Inset: An out-of-date sign reminds visitors to check in with a customs office that visitors who've traveled the new ice road haven't had to use.

When Covid-19 lockdowns closed the border between the U.S. and Canada to all nonessential traffic on March 18, 2020, they took the \$10 million economy of Minnesota's Northwest Angle (also known as Angle Township) with them. The result of an accident of history and a misunderstanding of geography, the Angle, the northernmost point in the Lower 48, is blocked off from the rest of Minnesota by the Lake of the Woods to the east and by Manitoba on its other sides. The Angle's roughly 120 year-round residents rely mostly on revenue from tourists in search of prime ice fishing spots at the lake, so with tourism deemed nonessential, the community was desperate for a way to work around the border crossing, says Paul Colson, who owns and operates the lake-adjacent cabins at Jake's Resort. "Tourists are by definition essential to us," he says. "We can't make a living without them." In December, Colson says, he and his fellow business owners pooled about \$9,000 to begin building a 22-mile ice road through American territory—that is, straight across the frozen lake and through a forest. After the ice road opened this January, he says, the area's eight or so winter tourist resorts were packed, and he recouped about a third of his usual peak-season business. The next hurdle will be warmer weather. Soon, boats will be the only way to reach the Angle without venturing onto Canadian soil, and the Angle residents are counting on Canada's government to reopen the border in time for their operations to survive the summer season.



At the beginning of a day of fishing, Jason Goulet (right), owner of Red Fox Ice Fishing Co., helps customers unload gear from the front of the vehicle he uses to bring them to one of his fish houses. The ride across the frozen Lake of the Woods usually takes 15 to 45 minutes. Locals say most visitors come to the Angle for the world-class fishing.



An obelisk marks the border between the U.S. and Canada on the Northwest Angle Guest Ice Road. Before the pandemic, visitors would pass through two international border crossings and 40 miles of Manitoba to reach the Angle.



The Angle Inlet School, the last one-room schoolhouse in Minnesota, is educating 11 students in grades 1-6. Its sole teacher, Linda LaMie, has been there for 39 years and might be the only teacher in America who commutes by snowmobile in the winter and by boat in the spring and fall.

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← Leland and Marlys Olson have been married for 34 years but fishing together for 35. The pandemic has made the simple joys of fishing—coffee, sandwiches, the radio, and each other’s company—all the better, says Marlys, who was hospitalized for five days with Covid-19 last year. “Even if the fish aren’t biting, we just enjoy being out on the ice,” she says.



↓ Jeanette McAtee and her husband have owned J&M General Store, the Angle’s only grocer and gas station, for 21 years. The 80-year-old owner says she’s looking to sell the store and retire this year. If she can’t find a new operator, the next-closest grocery store is 63 miles away.



↓ Volunteers roll out a hay bale on part of the Guest Ice Road, aiming to keep it from becoming a muddy mess as the temperature warms. Money from close to 1,000 passes paid for about \$130,000 in road maintenance. By mid-March the ice was still thick enough for a semitruck to cross the lake, but most of the snow cover was gone, says Colson of Jake’s Resort. At that point, the community decided to stop selling passes and decommission the road starting in April. “Spring is coming,” Colson says. “We don’t want to take any chances.”





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THE KITCHEN SPECIAL

Rediscover



Your Happy Place

**A range of clever appliances will remind you how much fun you can have in the kitchen. *By Kate Krader*
*Photographs by Ted & Chelsea Cavanaugh***

March 29, 2021

Edited by
Chris Rovzar

Businessweek.com

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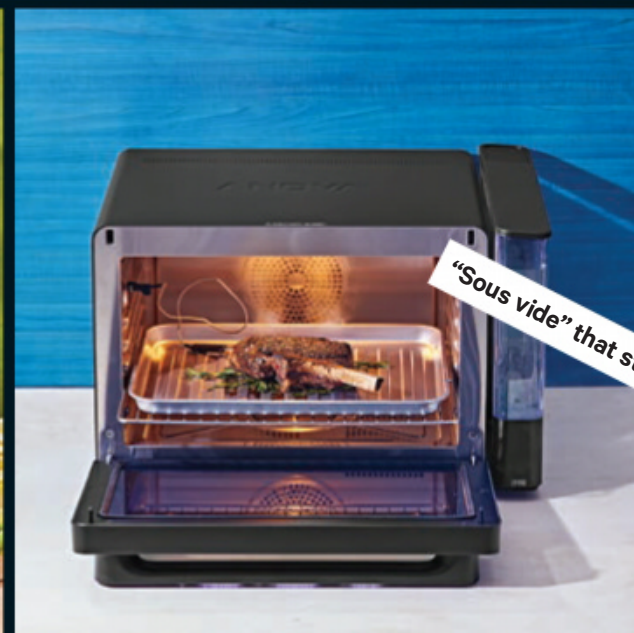
Make all the tortillas



Ferment to your heart's content



"Sous vide" that steak



We spent more time in the kitchen this past year than we have in decades. Over half of Americans reported cooking more in December than they had the year prior, according to a poll by food and beverage marketing firm Hunter Public Relations LLC. The shift may be long-lasting: Almost three-quarters of respondents said they intend to continue cooking more when the pandemic ends.

This, then, is a year for home cooks to flex culinary muscles with an eye toward fun. They're already experimenting with equipment and techniques primarily considered the provenance of professionals. Take dry-aging beef. Meat coolers such as Steak Locker's Smart Dry Aging refrigerator, which produce tender, flavorful rib-eyes and T-bones, are becoming widely available. Gabriel Llauro, who sells the \$1,500 Steak Locker fridge at his virtual butcher shop Meat n' Bone in Miami, estimates he sold more than 50 of them during the third and fourth quarters of 2020 and would have sold more if he could have sourced them. "There's a lot of interest in having a steak like in a restaurant," Llauro says.

Bread-baking fatigue has given rise to a boom in homemade tortillas. "Last year we sold about 50 tortilla presses and over 450 pounds of fresh masa," says Aaron Harris, who with his wife, Christie, operates the Mexican specialty food shop Molino Tortilleria & Market in Sawyer, Mich. "That might not be a huge number in an urban area, but we're a small town, where many are trying homemade tortillas for the first time—and then they're hooked."

Homebrewers are filling their cups at a record pace, too. Brooklyn Brew Shop owners Erica Shea and Stephen Valand shipped 80,000 kits in 2020, for \$2 million in sales, a 250% rise from 2019. "Our April e-commerce looked like December, which is not how April ever looks," Shea says. She expects 2021 to be even stronger with warmer weather. "There will be a lot of homemade beer served at socially distanced barbecues this summer."

The Dome outdoor pizza oven can reach 950F, delivering a blast of heat, and can char without overcooking



Upgrade Your Comfort Food

Pizza Oven

The next time you reheat a rubbery slice, consider a patio oven from home pizza-making champ Gozney, which produces gas-powered and wood-fired options. Its newest, the Dome, resembles a flattened igloo and stands at just a bit more than 2 feet tall. \$1,300

Tortilla Press

The handsome, utilitarian presses from Verve Culture are made in Mexico from recycled pieces of cast iron and Singer sewing machines. The flat, uniform tortillas that result are so much better than store-bought versions, you'll start taking Taco Tuesdays more seriously. \$48

Pasta Maker

Even with all the high-quality pasta around, the difference you get from making it fresh is hard to overstate.

Marcato's Atasmotor improves on hand-cranked models with its discreetly attached motor: It works faster, and you can place it on any flat surface, instead of securing it precariously to the side of a counter. \$175

Get More Precise

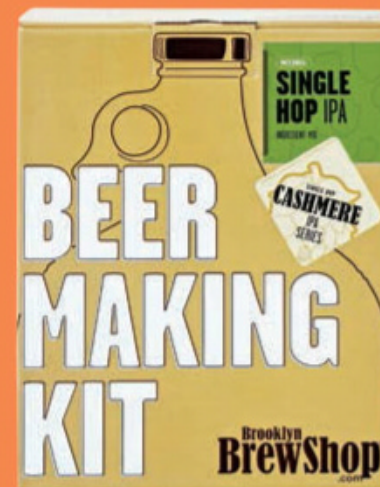
"Sous Vide" Oven

Cooking in vacuum-sealed bags has been in the food nerd's repertoire for years. But if you'd rather not fuss with all that, the Anova Precision Oven 10 offers a bagless solution. An internal probe lets you calibrate cooking within 0.5F—then automatically crank the heat for a crisp finish. \$600

Smart Dry-Aging Fridge

As every steak aficionado knows, dry-aged cuts of meat have a more pronounced flavor and are more tender than unaged ones. Steak Locker's aging fridge, which looks like a supersize wine cooler and weighs 165 pounds, is equipped with sensors that monitor the humidity and aging time. \$1,500

Kits from Brooklyn Brew Shop include single-hop IPAs and chestnut-brown ales



Pellet Grill Smoker

Smokers stand out among hobbyist chefs in their quest to infuse meat with an exact, not overwhelming amount of smoke. The Traeger Timberline 1300 pellet grill carries hardwood pellets through a tube to flames below the food; a tray keeps fire from making direct contact, while a fan circulates the smoke. It also comes with Wi-Fi—or “WiFire,” according to the manual—to maintain control if you need to step away. \$1,500

Add Some Cultures

Mushroom-Growing Kit

Funghi are riding a wave of popularity. U.S. sales of the 2019-20 crop were \$1.5 billion, up 3% from the previous season. Kits from Forest Origins can produce gourmet shrooms within two weeks. The meaty oyster varieties are versatile in sautés, stir-fries, pastas, and grain entrées. \$55

A charcoal filter in the dry-aging fridge from Steak Locker neutralizes funky smells



Beermaking Kit

The continued closures of bars have increased interest in homebrewing. The Brooklyn Brew Shop in New York sells an array of kits that look like groovy science experiments, with vinyl tubing and thermometers. “If you can make oatmeal, you can make beer,” the instructions promise, and they’re right. *From \$45*

Fermenting Kit

The art of making the perfect pickle—or kimchi or sauerkraut—doesn’t demand high-tech equipment, just a jar that can keep food submerged as it ferments and releases gases. Kilner, which has been around since the 1840s, has a modestly priced unit that includes weights and an air-locked top. \$45

Don't Delay Gratification

Microwave Cookware

One of the country’s top chefs, David Chang of the Momofuku empire, is backing the new Anyday startup. In its microwave-safe glass dishes, you can prepare—not just rewarm—everything

from a bacon-egg-and-cheese burrito to Thai chicken curry in minutes. *From \$30*

Greens-Growing Kit

Among the benefits of starting an indoor garden is handy access to produce year-round—and having plants around is pretty nice, too. The Click & Grow Smart Garden 9 is equipped with an LED grow light and a built-in timer. Select among 60 plants, including romaine, red kale, mini tomatoes, and even wild strawberries. \$199

Infuser

For those who like to fiddle with flavors, the Levo II makes rosemary-infused olive oil or cannabis butter an easier proposition. You control the temperature and cycles, from “dry” to “infuse,” with an app. It comes in robin blue, cayenne red, and other colors. \$300



In addition to being eco-friendly, mushrooms are high in micronutrients—all the more reason to grow them at home

Snow King

Wagyu aged in the frozen reaches of Japan has become the hottest cut in steak

By Kate Krader

Photograph by Sandy Noto

Not so long ago, *wagyu* was a synonym for top-of-the-line beef. Now consumers can find as many types of *wagyu* worldwide as there are shows on a Netflix watchlist. Demand for the luscious Japanese original, which can come only from one of four breeds of exquisitely cared-for cattle, is growing. In 2020 the U.S. imported almost \$39 million worth of *wagyu*, 136% more than the previous year. And that number is expected to keep climbing as chefs go beyond steaks to use it for tartare, in ramen, and as a pizza topping, according to the Japan Food Product Overseas Promotion Center.

One of the newest, most extravagantly priced variations to arrive in the U.S. is snow-aged *wagyu*, which comes from

Niigata in western Japan. The prized beef is aged for 30 days in a *yukimoro*, a storehouse covered with snow. Instead of relying on an industrial, sometimes inconsistent cooling system, snow-aged *wagyu* sits in a pristine, humid, and very cold environment, tenderizing as oxygen breaks down its fibers.

The product, which arrived in the U.S. at the end of 2019, is sourced from only one person, Takashi Uono, who began producing it in 2012. Its popularity is on the rise: In 2015, Uono's business, Uoshoku Co., sold a little more than 13,800 pounds of snow-aged *wagyu*; in 2019 it was almost 29,000 pounds.

The process comes at a price. One pound of boneless sirloin strip steaks costs about \$300 in the U.S. Pre-pandemic, one of the most expensive steaks at Delmonico's in New York, says former executive chef Billy Oliva, was a 4-ounce rib-eye, which went for about \$180. ("It sold real well.") He'll serve it at his soon-to-open restaurant at the Hudson National Golf Club in New York's Westchester County.

Because the meat is aged in high humidity rather than using a dry-aging process, which typically creates a more funky taste and scent, the flavor is subtle and silky. And though extremely fatty meat tends to coat your mouth with an unpleasant stickiness, Jonathan Benno, chef and owner of Benno restaurant in New York, says the snow-aging results in a cut that's "sweet, full of beefy flavor, with tenderness that has to be experienced at least once in your life." Put it on your *wagyu* watchlist. **B**

A bit of tenderizing magic happens during 30 days in the snow



Placate Your Picky Eaters

In advance of *Top Chef Season 18*, stars Padma Lakshmi, Tom Colicchio, and Gail Simmons share recipes to win over all diners, even kids. *By Kate Krader*



Gail's Steak Tacos

Serves 4

¼ cup extra-virgin olive oil, plus more for grill
¼ cup chopped cilantro, plus more for garnish
2 garlic cloves, finely chopped
2 Tbsp very thinly sliced scallions
2 tsp coarsely cracked black peppercorns, plus more for seasoning
1½ lbs flank or hanger steak
Kosher salt
12 small corn tortillas, warmed
Avocado crema (recipe follows)
Toppings such as shredded cabbage, halved cherry tomatoes, crumbled queso fresco or shredded Monterey Jack cheese, thinly sliced radishes and scallions, pickled jalapeños, lime wedges, hot sauce

In a small baking dish, whisk oil, cilantro, garlic, scallions, and cracked pepper. Add steak, turn to coat, and let stand at room temperature for 30 minutes, turning once. Gently pat off most of the marinade, then season well with salt and pepper. Heat a grill or grill pan over medium-high heat and brush lightly with oil. Grill steak, turning once halfway through, until medium rare, about 5 minutes per side. Let rest for 10 minutes. Slice steak against the grain into ½-inch slices, then cut them crosswise into bite-size pieces. Serve with the tortillas, avocado crema, and toppings.

AVOCADO CREMA

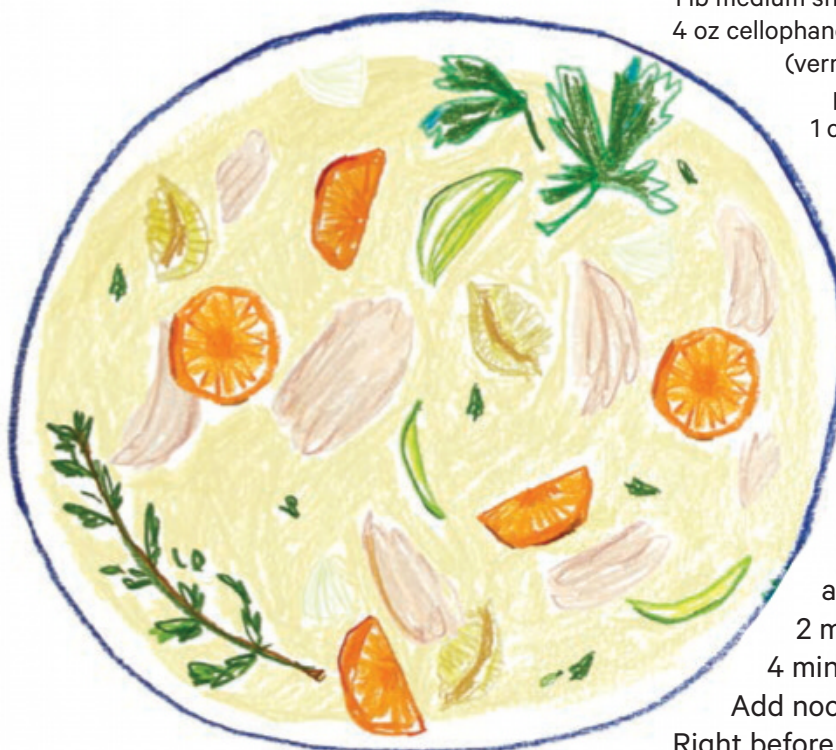
In a large bowl, mash 2 ripe avocados until creamy but with small chunks. Gently fold in ½ cup sour cream or plain Greek yogurt, the finely grated zest and juice from 1 lime, ¼ cup chopped red onion, ½ tsp cumin, and salt and pepper to taste.

Tom's Chicken Soup

Serves 4-6

1 chicken, quartered, with bones intact, including necks and giblets
2 carrots, coarsely chopped
2 celery stalks, coarsely chopped
2 leeks, sliced into half moons
2 parsnips, coarsely chopped
1 onion, coarsely chopped
1 sprig fresh thyme
Kosher salt and freshly ground black pepper
1½ cups small shell pasta, cooked (optional)
Coarse sea salt

In a stockpot, combine 1 gallon water and the chicken and bring to a simmer over medium heat. Simmer gently, skimming regularly, until the broth is fragrant, about 30 minutes. Add vegetables and thyme and simmer another 20 minutes. Season with salt and pepper. Remove chicken from broth and shred the meat. Return to pot with vegetables. Add pasta shells if using. Ladle soup into bowls and season with more salt and pepper as desired.



Padma's Singapore Noodles

Serves 6-8

3 Tbsp sesame oil
1 cup diced onion
1 Tbsp freshly chopped ginger
1 tsp chopped garlic
1 tsp chopped fresh hot red chile
2 cups sliced shiitake mushrooms
1 cup shredded carrots
2 Tbsp soy sauce
1 Tbsp fish sauce
1 tsp curry powder
1 lb medium shrimp, peeled and deveined
4 oz cellophane rice noodles (vermicelli type), softened per package directions
1 cup chopped mint

In a large deep skillet, heat oil over medium-high heat to almost smoking. Add onion, ginger, and garlic and sauté 3 to 4 minutes. Add chile, reduce heat to medium, and cook 2 minutes. Add mushrooms and carrots and cook, stirring, for 2 minutes. Add soy sauce, fish sauce, and curry powder and cook 2 minutes. Add shrimp and stir 4 minutes, just until cooked through. Add noodles and toss well to combine. Right before serving, stir in mint.

Gail's steak tacos recipe is adapted from her cookbook *Bringing It Home*. Padma's Singapore noodles are from her recently released book *Tangy Tart Hot & Sweet*.



Canisters from In Good Company

Which Meal Kit Is Right for You?

The market is suddenly awash in options to take the pain out of coordinating dinner. Here's help choosing the right one

By Matthew Kronsberg



I try!

How ambitious are you?

Not at all

Is it a special occasion?

It's date night!

It's game night!

No, but I'd like to make it special!



Misipasta



Misipasta

Missy Robbins's pasta-centric Brooklyn restaurant, Misi, is a case study in the power of matching simple ingredients with impeccable technique. If you live in the New York area, you can order individual meals, like her mafaldini with pink peppercorns, and try to match her skill. *From \$45*



Guy's Nachos

Guy's BBQ Trash Can Nachos

Load all of the components—chips, Guy's Super Melty Cheese, your choice of meat, beans—into the metal cylinder provided and voilà: a one-time teetering tower that the mayor of Flavortown might describe as a tornado on your tongue. *From \$69*



One tasty TV dinner, please

CookUnity

You can create a flexible subscription plan with these heat-and-serve meals and keep boredom at bay with wild mushroom bibimbap from Esther Choi or Pierre Thiam's kale and fonio salad. (There are meat and seafood dishes, too.) *From \$54 per week*

Want it healthy?

Do you eat meat?

Ummm, yeah

No

Yes

OK, just how healthy?

Do you care about sustainability?



Yes

Just feed me

In Good Company

Disposable packaging can leave a bad taste in your mouth. This SoCal startup works with local chefs on one-off meals packed in reusable metal canisters. *From \$25 for two servings*



Xi'an Famous Foods

Stretch these slabs of noodle dough by hand into ribbons, all while slapping them on your table or countertop. (That smacking sound gives them their name: *biang biang* noodles.) Choose from singular, lip-tingling options—vegetarian, beef, pork, and cumin-spiced lamb. *From \$44*

I work out

Food is medicine



Sakara Life

Embracing a Goop-tastic, clean-eating philosophy, Sakara's vegetarian meal plans come with weekly stocks of its detox tea and probiotic supplements. *From \$26 a day for a lunch subscription*

Street food

What's your idea of a good time?

Dessert

The morning after

Tovala

Meals such as braised chicken or everything-bagel-spiced salmon are a snap with this countertop oven. Its scanner sets cook times and temperatures. *\$299 (oven); from \$12 (meals)*

Truffles



Eleven Madison Park

Whether you select the marrow-crusted beef tenderloin or a whole roasted cauliflower, expect the ingredients (and optional truffles) to be exquisitely packaged and the instructions detailed enough to produce a one-off Michelin-worthy meal in your kitchen. *From \$250*

Blue Hill Resourced Breakfast Box

Baldor, a purveyor of high-end ingredients to restaurants in the Northeast, has partnered with many of them to create single-meal kits. Start your day right with Blue Hill's own spelt-flour pancake mix, thick-cut bacon, butter, eggs, and more. *\$88*



Blue Hill at Stone Barns

OnlyFlans

Seattle chef Eric Rivera has become a leading emissary for Puerto Rican cuisine. His cheekily titled bake-at-home dessert custards come in dulce de leche, cherry, and other flavors. *\$50 for five 4-ounce servings*

Sunbasket

Tailor subscriptions to your needs, like Paleo-friendly spicy sole arrabbiata with squash ribbon salad. The company prioritizes organic fresh produce, eggs, milk, and yogurt. *From \$9 a serving*



Dinner: The Movie

Amid the rise in instructional cooking videos, the ability to entertain still rules. By Brad Japhe

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Zoom fatigue is palpable—researchers at Stanford have even found it to be a condition that can be clinically diagnosed.

But it's much less tiring when you're using the platform to watch the duo behind Dos Hombres mezcal, Bryan Cranston and Aaron Paul, describe the almost mystical way in which their Oaxacan distiller arrives at the liquor's 84 proof designation. After some technical talk on heat cycles and ABV percentage, Cranston steals the famous line from his *Breaking Bad* co-star and yells out, "It's science, bitches!"

An entire industry of virtual, interactive cooking sessions and wine tastings is in full bloom on Zoom, but after testing out a range of relevant services, the most rewarding examples are the ones that—surprise!—are also highly entertaining. We used to go to dinner and a show. Now dinner *is* the show.

One of the best I've seen so far is *Bollywood Kitchen*. Billed as live culinary theater, it's basically a one-man play formed as a collaboration between filmmaker and cookbook author Sri Rao and the Geffen Playhouse. What would otherwise be a straightforward 90-minute kitchen demo—an Americanized *chana masala* prepared alongside a Mumbai Mule cocktail—is interspersed with a half-dozen classic clips of Indian cinema that Rao picked. (I was especially enchanted by a dance sequence from the legendary actress Madhuri Dixit.) Every so often, Rao steps out of his open kitchen to share a poignant story about his life as a gay,

first-generation immigrant growing up in rural Pennsylvania.

Beyond the dynamic nature of its presentation, *Bollywood Kitchen* is also notable for its three-tiered pricing. For \$40 you can simply observe; \$95 gets you a recipe box shipped to your door; and for \$175 you receive all that plus a seat at the "Chef's Table," which includes the opportunity to ask Rao questions directly in Zoom's chat feature. In the performance I saw, he allocated a significant amount of time to interact with the live participants. *Bollywood Kitchen's* 32-show run concluded in early March, but a spokesperson for the Geffen confirmed that more interactive programming will be announced soon.

Several other sites are leveraging star power to fill Zoom rooms. Wine.com offers live virtual tastings every week buoyed by the many Hollywood types now crowding the spirits space. In addition to Cranston and Paul, recent A-listers have included Cameron Diaz, promoting her Avaline wine; Sting, who shared three bottles from his Il Palagio Italian vintage; and John Legend, who broke into song during a tasting of his LVE label. Typically less than an hour long, the events are free to join, and attendees are given the opportunity to buy the relevant liquids and submit questions ahead of time.

New York fixture Murray's Cheese is now enjoying nationwide attention thanks to its Zoom-based courses. The curriculum includes lessons in building a perfect charcuterie board (\$110), and Murray's will send you curd ahead of time to learn how to make your own burrata and mozzarella (\$90). The lively hourlong lessons are filled with ample servings of technical insight. And who doesn't love a chat that opens up with "Hello? Is it Brie you're looking for?"

Ultimately the value of any of these experiences is much more a function of personality than technology. Zoom is merely the vehicle. Which means you'll need to find the right driver to take you where you want to go. I found mine through Table22, a subscription platform that's essentially a Patreon for the restaurant industry. In addition to cooking classes, it offers monthly meal kits and professionally chosen pantry staples.

It was here that I linked up with the affable Kelly English, chef and owner of Restaurant Iris in Memphis. For \$60 you get three classes a month, in which he alternates from guiding aspiring chefs through crafting basic condiments—such as mayonnaise or aioli—to arranging an elaborate regional delicacy like crawfish étouffée.

From his modest home kitchen, it took English about 100 minutes to proceduralize the platonic ideal of eggs Benedict. Through the glowing screen, he even showed me how to forever avoid "shrapnel" when cracking my eggs. Everyone cracks the shell on the edge of a surface—a bowl, a pan, a stove—but you should really crack it against a flat surface such as the middle of a table or cutting board. It breaks cleanly, and the shell never goes inward.

The only downside to all this Zoom cooking? When it's time to clean the kitchen, the laptop extends no relief. Some things just can't be left to virtual devices. **B**

A Tasty Stack

Each of these six standout cookbooks opens a culinary door and serves as a reminder that learning is a lot more fun when you've got the right teacher. *Photograph by Gabriela Herman*

CHEFS' FRIDGES

In this inadvertently well-timed book, Carrie Solomon travels around North America and Europe and gets notable cooks—José Andrés, Christina Tosi, Daniel Boulud—to open their refrigerators and tell what incredible dishes they can produce from very random contents. \$40

CHI SPACCA

Spotlighting recipes from her popular meat-centric Los Angeles restaurant, Nancy Silverton's latest is a gift to everyone who has missed eating a professionally cooked steak and wants to take matters into their own hands. There's a wealth of info here for carnivores of all stripes. \$35

THE FLAVOR EQUATION

Author Nik Sharma has a background in molecular biology and treats cooking as a most gratifying science experiment. He leapfrogs from recipes that highlight tastes such as sweet and spicy to thoughts about how colors, shapes, and even sounds contribute to a dish's appeal. \$35

IN BIBI'S KITCHEN

Entrepreneur Hawa Hassan promotes the foods of her native Somalia as well as seven other East African countries using techniques from grandmothers (*bibis* in Swahili). Perhaps that's why options like ground chickpea stew and braised oxtail feel both authentic and accessible. \$35

OTTOLENGHI FLAVOR

The London-based chef has been preaching the virtues of plant-based meals for more than a decade. Here Yotam Ottolenghi provides 100 compelling recipes and explains how vegetables develop during cooking, how to accent their flavors, and how to pick the right ones. \$35

A GOOD BAKE

To help readers excel in the greatest hits of baked goods, from sticky buns to croissants, bagel queen Melissa Weller patiently walks through the sometimes complicated steps. She does so with such aplomb that even the multipage process for chocolate babka feels achievable. \$40



He Pleaded Guilty in Varsity Blues, Then Fought The Sentence

By Joe Nocera



U.S. v. Sidoo et al.

Case 1:19-cr-10080
U.S. District Court,
District of
Massachusetts

● Sentencing lite: Hodge's nine months turned out to be the toughest sentence imposed in the scandal. Most of the other parents spent only a few months in prison. The two most famous parents, actors Felicity Huffman and Lori Loughlin, received 14 days and two months, respectively.

● What about the mastermind? Although he's pleaded guilty to fraud, racketeering, and money laundering, Singer has yet to be sentenced. He created the scheme, but his willingness to allow the feds to wiretap his calls to parents means his time in prison is likely to be minimal.

❶ THE ORIGIN Douglas Hodge, the former chief executive officer of Pacific Investment Management Co., is worth about \$80 million. That's where this really starts. If Hodge hadn't been rich, he'd never have been able to hire Rick Singer to help his children get into college. He wouldn't have given Singer \$850,000 to create fake résumés to make his kids appear to be athletes and pay bribes to slip them into prestigious universities. Unfortunately for Hodge, the last time he spoke to Singer, the FBI recorded the call. In March 2019, Hodge was arrested as part of Operation Varsity Blues and charged with conspiracy to commit mail fraud and money laundering.

❷ THE PLEA Like most parents ensnared in Varsity Blues, Hodge ultimately pleaded guilty. At his sentencing in February 2020, U.S. District Judge Nathaniel Gorton appeared to be disgusted. "Your conduct in this whole sordid affair is appalling and mind-boggling," the judge said. On the other hand, though the feds had sought a two-year prison sentence, Gorton gave Hodge nine months, plus a \$750,000 fine and 500 hours of community service.

❸ THE DENIALS Because of the threat of Covid-19, Hodge sought to have his sentence changed to home confinement. Denied. Upon reporting to a minimum-security facility in June, he was put in quarantine, aka solitary confinement, in a medium-security prison next door, again because of Covid. He filed for compassionate release on his second day. Denied. In August he again asked that his sentence be modified because the ongoing confinement, as Covid spread through the prison, amounted to "torture." Denied.

❹ THE CONCLUSION Was Hodge done appealing his sentence? He was not. A month after the torture appeal was denied, his lawyers cited several additional reasons Hodge's sentence should be overturned. The first appeal was—you guessed it—denied. And on March 17, Hodge threw in the towel, withdrawing the second appeal. As well he should have: He'd gotten out of prison three months earlier. ● —Nocera is a columnist for Bloomberg Opinion



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